

Agenda Item 1: Adoption of agenda

1.1 The agenda adopted by the meeting was as follows:

Agenda Item 1: Adoption of agenda including election of Vice Chair of MET Working Group

Agenda Item 2: Review:

- 1) follow-up action on reports of the CNS/MET SG/13 and APANPIRG/20 Meetings
- 2) relevant action items of 46th DGCA Conference
- 3) outcome of meetings of other related groups of APANPIRG

Agenda Item 3: Aeronautical Fixed Service (AFS):

- 1) review report of the Fifth Meeting of the ATN Implementation Coordination Group (ATNICG/5)
- 2) discuss other AFS related issues

Agenda Item 4: Aeronautical Mobile Service (AMS):

- 1) discuss satellite data-link communication continuity issues
- 2) discuss satellite voice communication
- 3) other AMS related issues

Agenda Item 5: Navigation:

- 1) review reports of the Performance Based Navigation (PBN) Task Force
- 2) review outcome of activities related to Testing and Calibration of Navigation facilities
- 3) discuss issues related to implementation of GNSS and review developments that have taken place in the Region
- 4) review navigation strategy
- 5) other radio navigation issues

Agenda Item 6: Surveillance:

- 1) review surveillance related activities
- 2) review strategy for the surveillance systems
- 3) discuss other surveillance related issues

Agenda Item 7: Aeronautical electromagnetic spectrum utilization:

- 1) review ICAO position for WRC-2012
- 2) review result of various Regional Preparatory Group Meetings

Agenda Item 8: Regional Implementation of World Area Forecast System (WAFS)

- 1) implementation issues associated with cessation of ISCS-G2
- 2) progress of trial gridded forecasts and related implementation issues
- 3) other WAFS (ISCS & SADIS) implementation issues

Agenda Item 9: Regional Implementation of International Airways Volcano Watch (IAVW)

Agenda Item 10: Regional Implementation of International Tropical Cyclone Watch (ITCW)

- Agenda Item 11:** Implementation of SIGMET and warnings
- 1) review SIGMET tests
 - 2) SIGMET and warnings implementation issues
 - 3) review METWSG SIGMET advisory
 - 4) update on SIGMET Guide
- Agenda Item 12:** Implementation of the issuance of observation, TAF and OPMET exchanges
- 1) review of OPMET/M TF/8 meeting
 - 2) implementation of Amendment 74
 - 3) other OPMET implementation issues
 - 4) update on ROBEX Handbook and ICD
- Agenda Item 13:** Review of regional procedures contained in the ANP/FASID
- Agenda Item 14:** Regional MET support to ATM
- 1) review of MET/ATM TF/1 meeting
 - 2) exchange of information on MET support for operations at aerodromes, terminal areas and en-route
- Agenda Item 15:** Other MET issues
- 1) amendment 75 implementation issues
 - 2) implementation of QMS
- Agenda Item 16:** Review and update Regional Performance Framework Objectives and forms:
- 1) CNS related Performance Framework Forms
 - 2) MET related Performance Framework Forms
 - 3) review and update CNS/ATM Implementation Planning Matrix
- Agenda Item 17:** Review of deficiencies in the CNS and MET fields:
- 1) status of CNS deficiencies (APANPIRG Deficiency List)
 - 2) status of MET deficiencies (APANPIRG Deficiency List)
- Agenda Item 18:** Future Work Programme
- Agenda Item 19:** Any other business

Election of Vice Chair of CNS/MET Sub-group of APANPIRG

1.1 After introduction of participants, Chairman invited the Secretariat for a proposal regarding Vice Chair of MET Working Group. Considering heavy tasks and work load being dealt with by MET Working Group and appropriate regional representation, the Secretariat proposed Dr. Cheng Cho-minig, Senior Scientific Officer (Aviation Weather Services) from Hong Kong China and Mr. Keith Mackersy, Meteorological Technical Consultant from Civil Aviation Authority of New Zealand to be the co-chair for the MET Working Group. The proposal was supported by New Zealand, Australia and was further supported by Cambodia, Brunei Darussalam, Malaysia, Bhutan, India, Thailand, Singapore and Indonesia in particular for Dr. Cheng Cho-ming. As result, the meeting elected Dr. Cheng Cho-ming and Mr. Keith Mackersy as co-chair for the MET Working Group of CNS/MET Sub-group of APANPIRG.

1.2 Mr. Shun Chi-ming, Assistant Director of Observatory Hong Kong, China (Forecasting and Warning Services) congratulated Mr. Keith Mackersy and Dr. CM Cheng for co-chairing the MET Working Group, demonstrating the spirit of enhanced cooperation and bringing in expertise from different sub-regions. He indicated that even though he has moved on to other MET disciplines, he will continue to be involved in aeronautical MET as the President of CAeM, WMO. He is looking forward to working with all colleagues in another context under WMO.

Agenda Item 2: Review:

- 1) follow-up action on reports of the CNS/MET SG/13 and APANPIRG/20 Meetings
- 2) relevant action items of 46th DGCA Conference
- 3) outcome of meetings of other related groups of APANPIRG

Report of the CNS/MET SG/13 and APANPIRG/20 Meetings

2.1 The meeting carried out a review of the actions taken by APANPIRG/20 on Decisions and Conclusions formulated by the Thirteenth Meeting of the CNS/MET Sub-group held in Bangkok from 20 to 24 July 2009. The meeting noted with satisfaction, actions taken and the significant progress achieved by the States and the Secretariat. It was noted that action on 88% of the 50 Conclusions and Decisions of the APANPIRG/20 in the CNS/MET fields were complete. The status of the follow-up action as reviewed by the meeting is provided in **Appendix A** to the Report.

Action taken by Air Navigation Commission

2.2 The meeting also noted the specific actions taken by the Air Navigation Commission (ANC) on the APANPIRG/20 Report with respect to the CNS/MET matters. Regarding *Satellite data link communication capability*, (Conclusion 20/34 refers), the ANC had noted the concerns of APANPIRG for ensuring the availability and sustainability of infrastructure to fulfill operational requirements for satellite data link communication services. The ANC had noted that ICAO would undertake a case study on the ownership and control of the air navigation services infrastructure, including the development of a draft service level agreement for use by air navigation service providers (ANSPs), to ensure that private third party service providers perform in line with recognized safety and performance requirements. Furthermore, it was recognized that usage of two or more autonomous networks by States and international organizations would provide much better availability. With respect to PBN implementation, ANC confirmed the request of APANPIRG in its Conclusions 20/37 for development of additional PBN implementation related guidance material, 20/42 on PBN safety assessment and 20/48 with respect to Flight inspection and validation of flight procedures, the Secretary General was requested to address these PBN implementation related issues through appropriate ANC Panels and Study Groups.

Outstanding Conclusions

2.3 The meeting reviewed the list of Outstanding Conclusions up to APANPIRG/19 (2008), which is provided in **Appendix B** to the Report. The meeting noted that of the 8 outstanding Conclusions, action on 4 Conclusions had either been completed or the item had been closed. The remaining 4 on-going items would require further action, which is expected to be completed by early 2011.

Relevant Action Items of the 46th DGCA Conference

2.4 The 46th Conference of Directors General of Civil Aviation (DGCAs), Asia and Pacific Regions (DGCA/46) was held in Osaka, Japan from 12-16 October 2009. A total of 215 delegates from 34 States/administrations and 5 international organizations attended the Conference. The meeting noted the theme subjects for 46th and 47th DGCA Conference. The Conference developed 12 Action Items which is provided in the Appendix XX to this Report. Action Items relating to the Work Programme of the CNS/MET Sub-group were highlighted as follows:

- Action Item 46/1 – Seamless Sky - ATM;
- Action Item 46/6 – Implementation of Continuous Descent Operation;
- Action Item 46/7 – Asia-Pacific Flight Procedure Programme;
- Action Item 46/8 – Preparation for WRC2011 (2012); and
- Action Item 46/11 – Technical Cooperation (Training opportunities)

2.5 The meeting noted that Items 46/6, 46/7 and 46/8 were already covered by the work program of the CNS/MET Sub-group and APANPIRG. The meeting encouraged States to make use of the opportunities provided under ICAO Developing Countries Training Programme for training of their national technical staff as and when they are made available.

2.6 With respect to Action Item 46/9 regarding USOAP Compliance Checklists, Australia noted that the percentage of compliance or non compliance for ICAO provisions by those States that have been audited should be made known. In this regard, the meeting was informed that the database on notification of deference by States based on information derived from Compliance Checklists would be made available shortly by ICAO. The meeting also encouraged States to follow up the recommendations of the 46th DGCA Conference.

Review outcome of the ATM/AIS/SAR/SG/20

2.7 The meeting noted following outcome of ATM/AIS/SAR/SG/20 meeting which was held in Singapore from 5 to 9 July 2010. ATM/AIS/SAR SG developed 15 Draft Decisions and Conclusions for consideration by APANPIRG/21. The following Conclusions and subjects of relevance to the CNS/MET/SG were reviewed and noted by the meeting.

- Developed a Draft Conclusion recommended APANPIRG to adopt a regional guidance material to assist States for the implementation of changes introduced by Amendment 1 to the 5th Edition of PANS-ATM, Doc 4444;
- Similarly, a Draft Conclusion for APANPIRG to adopt the *Strategy for Implementation of the New Flight Plan Format and Messages* was developed;
- It was agreed that after termination of the service provided by CRA-Japan for South East Asia on 31 March 2011, the responsibility will be taken over by Singapore;
- The meeting noted the update on ASIA/PAC initiatives for the reduction of emission. The meeting urged States to correct the air navigation deficiencies where identified;
- It was informed that a draft consolidated Interface Control Document (ICD) has been prepared to provide a harmonized AIDC for the North Atlantic and Asia/Pacific Regions. The meeting noted that an AIDC Implementation Seminar will be held in Bangkok from 12 to 13 October 2010 and this forum could also be used to seek further comments on the proposed Global AIDC;
- The meeting also identified a need for the development of a harmonized State contingency plans; and
- The meeting adopted the draft Decision formulated by SEA ATS coordination Group to assign task to the MET/ATM Task Force to develop a Sub-regional Volcanic Ash Contingency Plan also requested States to designate a contact person.

2.8 The meeting noted that ATM/AIS/SAR SG/20 endorsed a draft Conclusion regarding transfer the FASID Table ATS-2 – ATS Radiotelephony VOLMET broadcast from ATS to MET part of the ANP/FASID.

2.9 While reviewing a working paper jointly presented by Japan and USA regarding a proposal to organize an Asia/Pacific Seamless ATM Workshop in early 2011, the meeting endorsed the following draft Conclusion formulated by the ATM/AIS/SAR SG/20 inviting ICAO to convene the Workshop for planning the future ATM system .

Draft Conclusion SG 20/9 – 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.

2.10 Under this agenda item, the meeting also discussed the issue of CNS/MET Sub-group meeting arrangement as tasked by APANPIRG/20 Meeting. It was recalled that New Zealand presented a proposal to reduce time spent for plenary session and extension of daily meeting of CNS/MET Sub-group with the an ultimae objective of bringing down the meeting schedule to four days. The meeting considered it as trial for this year in conducting the meeting in 4 days. The daily working hours was stated ealier (08:00/08:30 and ended at 16:30). The meeting was unabl to convene a plenary session to jointly reivew the furture work programme, list of subjects and tasks and the meeting report. Chairman also asked the participants to think how the activies of Sub-groups of APANPIRG could be better grouppped. In this regard, the meeting was informed that the proposal for setting up AIM/MET Sub-group of APANPIRG was not supported by ATM/AIS/SAR SG/20 meeting.

(Above PARAGRAPH COULD BE RELOCATED UNDER AGENDA ITEM18 –FUTURE PROGRAMME)

Agenda Item 3: Aeronautical Fixed Service (AFS)

- 1) Review report of the Fifth Meeting of the ATN Implementation Coordination Group;
- 2) Discuss other AFS related issues

AMHS Implementation Plan

3.1 Hong Kong China, through Working Paper 51 proposed the procedures required and the phased approach to ensure an orderly testing and implementation of AMHS in the region. AMHS implementation planner to support the States in planning their testing and implementation of AMHS in their administration was also presented to the meeting. To avoid the complexities involved in testing every possible combination of a huge number of MTAs in the region and to save testing time involved in testing all these innumerable number of combinations, it was proposed that comprehensive interoperability test procedures included in Annex C and E of the AMHS Manual should be used only for those pairs of MTAs which are directly connected. For indirectly connected MTA pairs, abridged interoperability test procedure included in the Bilateral Test items (except IT601) stipulated in paragraph 4, Annex E of the AMHS Manual should be sufficient. Four phases of testing with Phase I for AFTN routing at MTA level, Phase II or intermediate phase for MTA direct routing to end BBIS, Phase III or final phase for MTA – to – any – MTA routing within the region and Phase IV for migration to IPS as when IPS is available were explained in detail. In accordance with the phased testing approach explained above, an AMHS Implementation Planner developed to present AMHS testing and implementation was presented. Above proposals were recommended by ATNICG in its Fifth Meeting for adoption.

3.2 Meeting tasked ATNICG to develop similar phases for the implementation of AIDC in the region and desired that a similar planner should be developed to plan AIDC implementation. It was agreed that initial draft on testing and planner will be developed.

Clarifications on ATN/IPS guidance (Doc 9896)

3.3 USA brought out the issues related to implementation of ATN, which need to be clarified. It was informed that publication of Edition 2 of ICAO Doc 9896 ATN/IPS Technical Manual was announced for May 2010, but the document has not been published and this has caused a number of States and industry to defer their planning to support IPS environment. Same issues when raised, ATNICG/5 made following recommendations.

- a) ICAO Doc 9896, Edition 2 need to be published before implementation issues can be addressed; and
- b) Publish Guidance Material of ICAO Doc 9896 to provide guidance to sustain existing service while transitioning to an IPS environment. Regular tracking and verification of referred RFCs need to be performed and reported.

3.4 On the use of VoIP recommended in ICAO 9896, ATNICG made a number of recommendations, which have been discussed in the report on ATNICG/5 meeting. Similarly, on the issue of referring to Request for Comments (RFC), in ATNICG it was expressed that reference to RFC without identifying specific paragraphs would result in different interpretations of requirements. It was also feared that the RFC can be changed or superseded by the industry without any notice. RFCs are developed by the industry and it has happened that some of them have not even been implemented. ATNICG/5 also discussed issues related to IPv4 and IPv6 addressing schemes and developed a consensus which has been included in the presentation on the report of meeting.

3.5 IP31 presented by the Secretariat address some of the issues raised in Working Paper 55. It was clarified that the adoption of external standard was in line with the recommendation of the 36th Session of ICAO assembly. It was also clarified that IPv6 has been adopted, since the address capacity of IPv4 has almost exhausted and IPv6 infrastructure is almost in place to support the implementation. Information Paper also covered the issues related to VoIP.

Asia/Pacific ATN Implementation Strategy

3.6 Singapore presented a paper on the development of Asia/Pacific regional ATN implementation Strategy. It was informed that the Strategy now proposed is in three parts. The three parts in the strategy was introduced in detailed and was included in the report on the Fifth Meeting of Aeronautical Telecommunication Network Implementation Coordination Group.

Fifth Meeting of ATNICG

3.7 Fifth Meeting of Aeronautical Telecommunication Network Implementation Coordination Group (ATNICG/5), hosted by Department of Civil Aviation, Malaysia was held from 31 May to 4 June 2010 in Kuala Lumpur, Malaysia. The meeting, attended by 56 participants from 16 States (Bangladesh, Brunei Darussalam, China, Hong Kong China, Macao China, India, Indonesia, Japan, Malaysia, Nepal, New Zealand, Pakistan, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand and the USA) and a representative from the industry was inaugurated by Mr. Azharuddin Abdul Rahman, Director General of Civil Aviation, Malaysia.

3.8 ATNICG reviewed the Subject/Tasks list assigned for the Group and decided to propose new sub-tasks and remove of some of them on the basis of developments that have taken place. CNS/MET SG Meeting reviewed the updated Subject/Tasks List placed at **Appendix X** to this report and recommended it for adoption by APANPIRG through the following draft Decision:

Draft Decision 14/xx - ATNICG Subject/Tasks List

That, the updated Subject/Tasks List placed at **Appendix X** to this report be adopted as the Asia/Pacific Aeronautical Telecommunication Network Implementation Coordination Group (ATNICG) Subject/Tasks List.

Clarifications on ICAO Doc 9896

3.9 Meeting noted the outcome of Aeronautical Communication Panel (ACP) Working Group of the Whole meeting held from 18 to 22 January 2010 in Montreal as presented to ATNICG. ACP Working Group of the Whole was assured that Edition 2 of Doc 9896, guidance document on ATN using IPS will be delivered in May 2010 but it has not been delivered so far. Differences between Edition 1 and 2 of Doc 9896 were explained and inclusion of Voice over IP (VoIP) in the later edition was informed. Meeting also noted issues related to the on-line and off-line Directory Services and formulated following draft Conclusion bringing out some of the implementation related issues:

Draft Conclusion 14/xx - 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 needs to be clarified. A proposal by ATNICG will be presented.

ATNICG Working Group Activities

3.10 Sixth meeting of ATNICG Working Group (ATNICG WG/6) was held in Hua Hin, Thailand from 22 to 25 September 2010 and the Seventh Meeting of the Working Group (ATNICG WG/7) was held on 29 January 2010 in Bangkok. ATNICG WG/7 was held back to back with AMC Training conducted by EUROCONTROL on 25 and 26 January and the AMHS Implementation Workshop organized on 27 and 28 January 2010. All these programmes (the meetings, the training and the workshop) were hosted by Aeronautical Radio of Thailand (AEROTHAI). Meeting was informed about the commissioning of AMHS link between Hong Kong and Macao in December 2009.

Review ATN/AMHS Implementation Status

3.11 Implementation status was also presented by Japan, Indonesia, India, China, Singapore, Republic of Korea, Thailand and USA to the ATNICG Meeting. Compatibility issue between Edition 2 AMHS installed in Japan and Edition 3 in Korea was noted by the meeting. Hong Kong China presented the implementation status in the region through an Excel based Regional AMHS Implementation Planner. It was informed that the implementation status will in future be presented through the Implementation Planner and following draft Decision on this issue was recommended for adoption by the APANPIRG:

Draft Decision 14/xx - Regional ATN/AMHS Implementation Planner

That, the Asia/Pacific Regional Implementation Planner Placed at **Appendix X** to this report be adopted to report ATN/AMHS implementation progress in the region.

Review of implementation plan and status from other ICAO regions

3.12 It was informed that MID region had adopted ATN over IPS, which will maintain compatibility with AFTN, CIDIN and ISO/OSI based implementation and also AMHS implementation had been completed or was in very advanced stage of completion in a number of States in the region. MID region currently has four links with Asia and Pacific regions (Bahrain/Singapore, Kuwait/Pakistan, Iran/Pakistan and Oman/India). It was agreed that Singapore, Pakistan and India should take initiative in transiting to AMHS connectivity following the prescribed procedure. Following draft Conclusion was recommended by the meeting for adoption by APANPIRG:

Draft Conclusion 14/xx - 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.

In response to a query raised in the meeting, both India and Singapore confirmed their readiness to conduct tests with their reciprocal ends.

3.13 AMHS connectivity between Amman/Jordan and Abu Dhabi/UAE on Virtual Private Network (VPN) and policy adopted in the MID region regarding usage of public internet was also informed to the meeting.

Asia/Pacific Regional ATN/AMHS Implementation Strategy

3.14 Proposed ATN/AMHS Implementation Strategy updated by ATNICG/5 was taken up for review. Changes proposed in the format of the Strategy were noted. Meeting agreed with the stress given to replace the X.25 sub-network with IP sub-network connectivity. The revised Strategy recommends deployment of a backbone network of ATN/OSI and a private network of ATN/IPS comprising of dedicated point-to-point circuits with no connectivity provided with public network. Usage of public network however is accommodated for connectivity between MTAs and UAs. Meeting, after deliberations decided to recommend following draft Conclusion for the consideration of CNS/MET Sub-group and the APANPIRG:

Draft Conclusion 14/xx - Strategy for Implementation of Aeronautical Telecommunication Network (ATN) in the Asia/Pacific Region

That, the document placed at **Appendix X** be adopted as Strategy for Implementation of Aeronautical Telecommunication Network (ATN) in the Asia/Pacific Region.

AMC Data

3.15 Meeting was informed about the observation made in ATNICG/5 that AMC data provided by the States was sometimes not correct though the ICAO State Letter on this subject was quite comprehensive. To facilitate recording of correct data, meeting was presented a proposal to circulate a form amongst the States for collecting the correct information. This form includes a filled up sample to provide a better understanding about the requirements of each column. The meeting agreed with the proposal and adopted following draft Conclusion supporting it:

Draft Conclusion 14/xx: AMC Information Form

That, the States be invited to provide information in respect of their Administration in the format placed at **Appendix X** to this Report.

Use of Directory Service

3.16 Directory Service concepts are specified in ICAO Doc 9705, Edition 3, Sub-Volume VII and Asia/Pacific Directory Service Guidance document. Based on X.500, Directory Service allows users to collect information describing the users, the applications and other resources in a common directory that is accessible to all authorized users and applications within ATN. It also provides 'on-line' administration tool to centrally manage information for the global ATN. For the reasons like synchronizing the data in all the MTAs etc, the service is still not being used on-line. It was informed that ATNICG adopted a Decision to analyze and recommend Directory Service that can be implemented for future use, develop procedures for implementation, identify obstacles on its implementation and develop mitigation proposals for these obstacles.

IP Sub-network Planning

3.17 ATNICG was presented two Addressing Plans, one based on the IPv6 and the other based on IPv4 as has been adopted in the CAR/SAM region. Based on the IPv4 and IPv6 addressing plans proposed and considering that:

- i.) The coordination required to obtain a global IPv6 address prefix for the region, and the cost in acquiring and maintaining such address prefix;
- ii.) The desirability of an ICAO global IPv6 addressing scheme, which must be coordinated through the Aeronautical Communication Panel;
- iii.) The urgent need to migrate from AFTN to the AMHS, and the need for non-backbone States to use the Internet Protocol Suite to reduce their implementation costs; and
- iv.) That the proposed IPv4 addressing plan is considered sufficient to meet the requirements of ground-ground communication in the Asia/Pacific region in the short-to-medium term.

Based on the considerations mentioned above, meeting decided to endorse following draft Conclusion developed by ATNICG for adoption by APANPIRG:

Draft Conclusion 14/xx – 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 X** 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.

Amendment of Regional Documents

3.18 Meeting was informed that Asia/Pacific ATN IDRP Routing Policy Version 3.1 provides for a common addressing prefix for Asia/Pacific and NAM regions to achieve the ultimate goal of shortest path and hence ATNICG has proposed that the two regions should have common 5-byte NSAP prefix and this requires that Asia/Pacific ATN NSAP addressing plan should be changed to include Hexadecimal Code '91' in the ADM field. Meeting recommended that the mentioned change should be recommended for adoption by APANPIRG.

3.19 ATNICG WG/6 was informed that the current test cases provided in Annex C to Asia/Pacific AMHS Manual are somewhat limited in scope of verifying routing capabilities of ATN routers operating in multiple domains and hence amendment proposed by ATNICG to include additional test cases was recommended for adoption by APANPIRG through a draft Conclusion developed by ATNICG.

3.20 Updated version of guidance document on Management, Operation and Technical Controls on Security was also recommended for adoption through a draft Conclusion. Meeting also agreed to recommend the ATNICG proposal to revise the test procedures to limit the testing between indirectly connected MTA pairs to abridged procedures provided in paragraph 4, Annex E of the AMHS Manual to save time and efforts required for conducting the comprehensive testing procedure provided in Annex C and Annex E. Draft Conclusion recommending this change was endorsed by the meeting.

3.21 Step-by-step approach for transiting from AFTN Routing to MTA-to-any-MTA developed by ATNICG on the basis of the experience gained by many States was also recommended for adoption by APANPIRG. Following draft Conclusion was adopted based on the above outcomes

Draft Conclusion 14/xx – Amendment/update of Regional ATN/AMHS Guidance Document

That,

- a) the document placed at **Appendix X** to this Report be adopted as the amended Asia/Pacific ATN Network Service Access Point (NSAP) Addressing Plan for Asia/Pacific Region
- b) That, the document placed at **Appendix X** to this Report be adopted as the Test Procedure for ATN Router Connection Test, Annex C to Asia/Pacific AMHS Manual
- c) That, the document placed at **Appendix X** to this Report be adopted as ‘Asia/Pacific ATN Security Guidance Document’ to replace the existing Asia/Pacific ATN Security Guidance Document, Draft First Edition.
- d) That, the phased testing procedure to transit from AFTN routing to MTA-to-any-MTA routing provided in **Appendix X** to the Report be adopted and incorporated in the AMHS Manual.

3.22 It was informed that ATNICG had considered an Interface Control Document for the IPS routers and agreed to have a common standard to facilitate uniform and harmonized implementation of ATN over IPS. ATNICG also felt that there may be a requirement to amend the FASID tables to accommodate the unique requirement of IPS and decided to propose that an additional sub task may be introduced in the Subject/Tasks list for ATNICG.

3.23 The meeting was reminded about the requirement of amending the guidance documents on the basis of Proposed Defect Reports (PDRs) raised in the Aeronautical Communication Panel (ACP) meetings. It was expressed that those States, which were not attending the ACP meetings regularly, were not having an opportunity to raise the PDRs. The meeting was informed that PDR has since been renamed as Amendment Proposals. The meeting therefore decided to formulate following draft Conclusion for providing a facility to such States an opportunity to raise PDR (Amendment Proposal):

Draft Conclusion 14/xx - Points for Proposed Defect Report (PDR) (Amendment Proposal) raised in the region

That, States may 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.

3.24 Japan presented their proposal for AFTN Routing Change between Japan and Russia in the ATNICG meeting, in view of the developments that have taken place lately. It was agreed that ICAO should coordinate with Europe for updating the AFTN routing directory accordingly and following draft Conclusion formulated by ATNICG was endorsed by the meeting:

Draft Conclusion 14/XX – Japan/Russia AFTN routing Change

That, ICAO be requested to coordinate with Europe for updating AFTN routing directory and consequential change to the APAC AFTN routing directory.

3.25 It was informed that the next Working Group (ATNICG WG/8) meeting has been planned to be held for four days from 27 to 30 September 2010. In the ATNICG/5 meeting, New Zealand offered to host the Working Group meeting in Christchurch. Republic of Korea offered to host the Sixth Meeting of ATNICG in Seoul tentatively scheduled from 23 to 27 May 2011.

3.26 Meeting appreciated the contributions made by Department of Civil Aviation, Malaysia by hosting the Fifth Meeting of ATNICG and thanked New Zealand and Republic of Korea for their offers to host the next Working Group and ATNICG meetings respectively.

Network Incompatibility Issues

3.27 Issues related to network incompatibilities when reported to CNS/MET SG/13, the Sub-group tasked ATNICG to develop a solution for this problem. Working Paper 55 presented by USA discusses a possible solution based on using Applications to overcome the network incompatibility issues. Usage of Extensible Markup Language (XML) for transmission of OPMET data, usage of public internet for accessing ATS Management Centers (AMC) and the World Area Forecast System (WAFS) Internet File Server, Virtual Private Network (VPN) over public internet etc. are some of the diverse systems which are proposed to be used in the future.

3.28 Asia Pacific regions are phasing out X.25 subnetwork and transiting towards IP subnetwork to support AMHS . It is recommended that the region should move forward to using XML formatted data over AMHS to support OPMET data and other traffic. Trial of XML over AMHS has been planned between Hong Kong China, USA, Singapore and China. It was also recommended that States should use public internet using IP Security (such as VPN) on a case to case basis to improve network performance,. It was informed that table driven protocol like XML can be used for many aeronautical applications. Meeting was of the view that since the proposal included issues related to transmission of OPMET messages, coordination with MET sub group should be established.

Agenda Item 4: Aeronautical Mobile Service (AMS):

- 1) discuss satellite data-link communication continuity issues
- 2) discuss satellite voice communication
- 3) other AMS related issues

Outcome of First Satellite Operational Continuity Meeting (SOCM/1)

4.1 While reviewing the outcome of the SOCM/1) which was organized from 26 to 28 August in Bangkok to meet the requirements of APANPIRG Conclusion 19/24 and consequential actions taken by APANPIRG and Air Navigation Commission, the meeting discussed the current satellite data link communication status and related issues.

4.1.1 The meeting noted that the end to end severability performance has been improved to some extent since late 2009. The meeting noted that service provider stockholders have been putting efforts into incentivising the Release 15 upgrades to all four GESs – which are now nearing completion. It was also informed that additional 60 aircraft from 4 airlines started using MTSAT through SITA AIRCOM service.

4.1.2 It is noted that although improvement for end to end communication performance is still required, the requirement for RNP 4 based separation in the South Pacific could be marginally achieved. The meeting appreciated ICAO Regional Office for taking the lead role in conducting the SOCM/1 Meeting.

4.1.3 The meeting noted the chain of SATCOM datalink service involves several segments from different service providers and stakeholders including end users. Therefore improvements for the SATCOM datalink service require coordinated and collaborated efforts among all the stockholders and strategic planning. The meeting considered it as a global issue which need to be addressed at global level.

4.1.4 In this connection, the meeting further discussed possible dates for SOCM/2 Meeting which as scheduled for end of 2010. It was agreed that the second meeting of SOCM should be organized after receiving input from the reconvened FANS Satcom Improvement Team (FSIT). It was clarified that ICAO once again had recommended that the Air Navigation Service Providers and the Airline Operators should consider to use two or more redundant SATCOM systems through service providers to achieve improved performance. The meeting expressed concerns about the availability of data link services after the life of some of current INMARSAT and MTSAT satellites expire in 2016. Therefore, strategic system planning for future system and requirements for the correspondent and/or updated avionics is required.

4.1.5 It was noted that SOCM/2 meeting may be postponed due to the FANS SATCOM Improvement Team Meeting (FSIT) has not been reconvened as planned. The meeting discussed objective of the meeting and identified following items that may be included in the agenda for the next SOCM/2 meeting.

Some Issues need to be included in the Agenda for SOCM/2

- Review the status of Satellite datalink communication status;
- Implementation of improvement plan by stakeholders to develop a common outage/maintenance reporting template and process by CSPs which is useful for States/ANSPs
- Develop common service level agreement between CSPs and State/ANSPs based on requirements in the GOLD.

- Satellite Communication Voice for routine ATS;
- Mid and long term strategy for Satellite communication i.e. beyond 2016 including requirements for modification to SATCOM satellite data unit (SDU) to enhance capability to access multi satellite service provider and whole I3 and I4 network.

Global Operational Data Link Document (GOLD)

4.2 The meeting noted information presented by the USA on the development process of GOLD to replace FANS Operational Manual (FOM) for Asia/Pacific, South American and African/Indian Ocean Regions. The meeting noted that the Ad-Hoc GOLD Working Group has completed the First Edition, which was published on 14 June 2010 which can be accessed on the following websites.

- a) FAA: http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/enroute/oceanic/data_link/;
- b) Airways New Zealand: <http://www.ispacg-cra.com>; and
- c) ICAO Asia and Pacific Office: <http://www.bangkok.icao.int/edocs/index.html>.

4.2.1 In this regard, the meeting recalled that APANPIRIG had approved GOLD as Asia/Pacific regional guidance material at its 20th meeting for use by States and airspace users (Conclusion 20/73 refers) to replace FOM in the Asia and Pacific Region upon release of the GOLD by the Ad-Hoc GOLD Working Group. A State Letter was issued on 28th June 2010 to notify States and International Organizations that GOLD has become applicable since June 2010.

Review outcome of NAT SPG/46 Meeting

4.3 The meeting was informed that the Forty-Sixth Meeting of the North Atlantic Systems Planning Group (NAT SPG) was held in the European and North Atlantic (EUR/NAT) Office of ICAO from 22 to 25 June 2010. It was required to coordinate with APAC Region and with the APANPIRIG groups for some conclusions adopted by NAT SPG/46. The Secretariat was also requested to provide the issues identified to the meetings of APANPIRIG Sub-groups for review.

4.4 It was noted that NAT SPG/46 has adopted a conclusion for an amendment proposal to the NAT SUPPs (Doc 7030) with respect to the FANS 1/A mandatory equipment carriage requirement (NAT SPG Conclusion 46/2 refers).

4.5 The meeting also noted that NAT SPG/46 has reviewed the status of implementation of the NAT Data Link Monitoring Agency (NAT DLMA) and urged the NAT States, service providers and industry to complete some remaining actions (NAT SPG Conclusion 46/3 refers) ;

4.6 The meeting also noted NAT SPG Conclusion 46/4 on a revised version of the NAT Proposal for Amendment to Doc 7030 on SATCOM Voice. In this connection, the meeting also considered a paper presented by Australia. The meeting supported the continued development of ICAO global AMS(R)S Voice avionics standards and procedures. The meeting recommended to endorse the Terms of Reference for the future work of the inter-regional ad hoc Satellite Communication (SATCOM) Task Force as approved by NAT SPG/46 and provided at

Appendix X to this Report. (NAT SPG Conclusion 46/5 refers). Accordingly the following draft Conclusion was formulated for consideration by APANPIRG:

Draft Conclusion 14/xx – Inter-regional ad hoc SATCOM Task Force

That,

- a) the Terms of Reference of the inter-regional ad hoc Satellite Communication (SATCOM) task force as adopted by NAT System Planning Group as provided at **Appendix X** be endorsed;
- b) the outcome of the task force should be coordinated with the CNS/MET Sub-group of APANPIRG).

4.7 The meeting noted that Global Operational Data link Document (GOLD) Version 1.0 has been adopted by the NAT SPG and proposal for ICAO to establish a global document configuration management process. It was also informed that the amendment procedure included in the GOLD was quite different from the conventional ones being used.

Pan-regional ICD for AIDC

4.8 The meeting noticed that NAT SPG has agreed to the development of Pan-regional ICAO guidance material for oceanic AIDC ICD based on the current AIDC ICD (version 3) adopted by APANPIRG and the latest AIDC ICD used in the NAT Region. The NAT SPG further agreed that the task of harmonising the NAT and APAC AIDC ICDs should be advanced in accordance with the following principles:

- a) The United States should continue the effort by drafting a consolidated ICD with thorough bi-directional tracking of content;
- b) Since the ICD would apply to oceanic regions only a title of the future document should be “Pan-regional ICD for Oceanic AIDC”;
- c) The content of the initial consolidated ICD should be confined to the existing substance of the NAT and APAC ICDs. Otherwise review would be unnecessarily complicated;
- d) The above should be accomplished as quickly as practicable, and the NAT and APAC ICDs should be frozen in the interim; and
- e) Once the NAT and APAC PIRGs had endorsed the resulting ICD, a new round of drafting and review could begin to incorporate any desired new substance, as part of the ongoing inter-regional maintenance of the document.

4.9 The NAT SPG also agreed that this work would be progressed in the framework of the NAT IMG and that a group of experts would be identified to review the draft consolidated NAT/APAC AIDC ICD. The Rapporteur of the NAT CNSG would coordinate this activity with the APAC Region. The work would be conducted via electronic means of communication as far as possible. A progress report would be provided to the next meeting of the NAT IMG where a decision would be taken regarding further steps.

4.10 Within the Asia Pacific Region, the APAC AIDC ICD applies to ATS units and ATM systems serving oceanic, continental and regional airspace. Therefore the assumption that the ICD would only apply to oceanic regions is at complete variance with the implementation and use of the APAC AIDC ICD. Accordingly, the meeting formulated following draft Conclusion:

Draft Conclusion 14/xx – Pan-Regional IDC 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 IDC for AIDC

Update on use of Satellite Voice Communication (SCV) for ATC purpose

4.11 The meeting discussed a paper presented by Australia which summarizes work undertaken by ICAO in the field of Satellite Voice Communication (SCV) for use for ATS purpose. The concerns and limitation raised by States and industry with using SCV for ATS are as follows:

- a) The Annex 10 requirements for Aeronautical Mobile Satellite (Route) Service (AMS(R)S voice avionics and the supporting ground system requirements and performance standards are not sufficiently robust to support the desired use as a substitute to HF as a long range communication system,
- b) Many ANSPs do not have the supporting infrastructure nor ATC procedures to use SCV as an alternative to HF,
- c) Pilot and ATC procedures are not fully developed ,
- d) SCV, unlike HF, would not be globally available, and
- e) The lack of guidance on the separations standards for which SCV is intended to be used.

4.12 In addition, Japan indicated that using SCV would increase workload of air traffic controller. While supporting the continued development of relevant ICAO standards and procedures for using SCV for ATS, the meeting recommended to retain SCV use to emergency and non-routine purposes as stated in APANPIRG Conclusion 14/17 adopted in 2003.

Policy on harmonizing data communication

4.13 USA informed the meeting of the FAA’s policy on harmonizing its data communication programs within the National Airspace System (NAS) and the international airspace it serves. After introduction of history of datalink communication related activities and background information on standard development for CPDCL and ADS-C applications, it was stated that the FAA will promote the use of RTCA, EUROCAE, and ICAO to internationally standardize the operational and technical definition for next generation data communication services that meet the operational needs in its domestic and international airspace. The FAA envisions that operators will only need one upgrade cycle to equip their aircraft to benefit from the next generation data communication capabilities planned for 2015-2025 in international and domestic airspace. RTCA SC-214 and EUROCAE WG-78 are working jointly to develop standards for next generation data communication services. The reason for the Policy is to promote all regions to follow on convergence of services using 214/78 in their FANS systems.

ADS/CPDLC operational trial in the Ujung Pandang FIR

4.14 Indonesia informed the meeting that taking into account the progress CNS/ATM implementation in the Region, Indonesia has conducted the ADS/CPDLC operational trial on particular oceanic ATS routes of A461, B583, B584, B472, B473, B462, R340/R590 in the Ujung Pandang FIR for all aircraft equipped with FANS-1/A. Starting time of the trial was 00.00 UTC on 3 July 2008 with duration of three months. The trial operation period has been extended several times

which were notified by NOTAM. This ADS-C/CPDLC trial will finish in September 2010. The result of the trial was optimistic and met the operational requirement. Indonesia has proposed transition from the trial to the operational implementation.

DATA-LINK Performance Monitoring Results by New Zealand

4.15 The meeting reviewed some encouraging results of data-link performance monitoring within the Auckland Oceanic FIR presented by New Zealand. The meeting noted that the Central Reporting Agencies (CRA) of the Informal South Pacific ATS Coordinating Group i.e the ISPACG CRA, has for some time published a collection of data-link monitoring data on its website at: <http://www.ispacg-cra.com/performance.asp>.

4.16 The statistics data collected since December 2008 indicates that while the safety targets for network availability are being achieved at present, it is clear that considerable improvement is necessary for the efficiency target to be met. The efficiency target supports operational efficiency and orderly flow of air traffic. It was demonstrated that the nominal times for CPDLC and ADS-C continuity are being achieved. The availability should improve significantly when the figures to 1 July 2010 are available,

Regional HF Management Guidance Material

4.17 The HF management guidance material covering SP6 area, provided by the Chair of the South Pacific HF Working Group Mr. Alla Londeon was presented to the meeting by the Secretariat. The guidance material integrated regulatory materials relating to South Pacific States (Doc. 7030), FASID, radio regulations and current NOTAM's etc.

4.18 The purpose of the document is to provide a guidance methodology for the utilization of the Families and Frequencies employed by the Aeronautical Communication Stations in the South Pacific, to support a better management plan of the available families, frequencies and human resources, in order to increase the efficiency and capacity of the Communications Network. The document focuses on the propagation, technical and characteristics of the HF network while detailing specific information on ground facilities within the south pacific SP6 region. It will also include other relevant information about HF frequencies for air-ground communications. In addition, it also includes contact information for Aeronautical Stations. Its intent was to make information freely available from one source document.

4.19 While the document is primarily aimed at the South Pacific, a lot of the information has been used from the NAT document 003. Consequently there is no reason why it could not be rolled into the current NAT document as a step towards a global HF guidance document, much like the datalink document "GOLD" which was born out of the SPOM, FOM etc.

4.20 After reviewing the structure and contents of the document, the meeting considered it a very useful document for operators and ANSPs in the South Pacific Region. Therefore, the meeting developed the following draft Conclusion for consideration by APANPIRG

Draft Conclusion 14/xx – Regional HF Management Guidance Material

That, the HF Management Guidance Material for the South Pacific as provided in the Appendix X to the Report be adopted as Part One of Asia/Pacific Regional Guidance Material for HF Management.)

4.21 The meeting also encouraged States in North Pacific Sub-region, Bay of Bengal and Indian Ocean sub-regions coordinate each other to develop a similar document for use by the Operators and Air Navigation Service Providers. These documents will become part of the Regional HF management guidance material for adoption by APANPIRG through CNS/MET Sub-group.

Agenda Item 5: Navigation:

- 1) review reports of the Performance Based Navigation (PBN) Task Force
- 2) review outcome of activities related to Testing and Calibration of Navigation facilities
- 3) discuss issues related to implementation of GNSS and review developments that have taken place in the Region
- 4) review navigation strategy
- 5) other radio navigation issues

Review reports of the Performance Based Navigation (PBN) Task Force

5.1 The meeting noted that the seventh meeting of the PBN TF has been delay and will now not occur until just before APANPIRG/21. The timing of the seventh meeting means that the outcome the meeting will not able to be reviewed by either the ATM/AIS/SAR SG or CNS/MET SG. This meeting reviewed the report of the sixth meeting of the PBN TF which took place in Hong Kong, China from 3 to 5 February 2010. PBN TF/6 was preceded by an Implementation Seminar also held in Hong Kong.

5.2 The meeting was informed that PBN TF had recommended integration of the Implementation Tasks List into the PBN Task Force Tasks List. Meeting reviewed the integrated Tasks List proposed by the PBN TF and decided to endorse it through the following Draft Decision:

Draft Decision 14/xx – PBN Task Force Tasks List

That, the document placed at **Appendix X** to this report be adopted as the PBN Task Force Tasks List.

Global PBN Implementation – Update

5.3 Meeting was briefed about the significant global PBN initiatives and completion of the initial draft of PBN Operational Approval Manual and Continuous Descent Operations (CDO) Manual. Directions adopted by the PBN Study Group in September 2009 to harmonize the global PBN implementation efforts were informed to the meeting. Informing the meeting about the activities of APAC Flight Procedure Program, Chairman PBN TF informed that the contribution by each active participating States is going to be around \$16,000 and in addition non monetary contributions have also been assured by FAA, French DGCA/ENAC, Airbus Industries, Hong Kong China, and Jeppesen.

APAC Region PBN Implementation

5.4 States, which had not developed their State PBN Plan, were once again reminded about the requirement and an action item was adopted encouraging the States to consider implementation of CDO. State were also encouraged to attend various PBN related training and other program. Meeting was briefed about various issues related to PBN implementation in the region and about various action items adopted by the Task Force.

PBN Implementation Plan

5.5 States were urged to review the draft PBN Operational Approval Handbook and provide feedback to the next PBN TF scheduled for September 2010. Meeting was briefed about the limitations of earlier generation FMS and it was recommended that this issue should be taken up with Instrument Flight Procedure Panel (IFPP). Following draft Conclusion developed by PBN TF was endorsed by the meeting for the consideration of APANPIRG:

Draft Conclusion 14/xx – FMS (older generation) – limitations

That, ICAO (IFPP, PBNSG) be invited to note the limitation of older generation FMS in putting procedure identification within 6-digit alpha-numeric. This limitation occurs when pilot attempts to select a specific approach for an airport that has multiple runways and each of the runways has multiple procedures for the same type of navigation system. ICAO is also requested to provide guidance and standardize solution on the issue.

State/Industry Contribution

5.6 Meeting was informed about the status of PBN implementation in various States, as presented to the PBN Task Force meeting. States, while informing the PBN TF about the status of implementation in their administration also described various benefits these implementations have provided. Based on the review of the status of implementation in various States, PBN TF revised APAC Regional PBN Implementation Plan. Meeting reviewed the revised plan developed by the PBN TF and decided to recommend it for adoption by APANPIRG through the following draft Conclusion:

Draft Conclusion 14/xx – APAC Regional PBN Implementation Plan (Version 2)

That, the revised APAC Regional PBN Implementation Plan provided in **Appendix X** be adopted as Version 2.0.

State PBN Implementation Plan

5.7 PBN Task Force urged the States to plan their PBN implementation efforts to ensure harmonized transition and implementation. Meeting also discussed State implementation plans and decided to endorse following draft Conclusion formulated by the Task Force:

Draft Conclusion 14/xx – Develop State PBN Implementation Plan

That, the States, which have not developed their State PBN Implementation Plans so far, are urged to develop the mentioned plan in accordance with the Asia/Pacific Regional PBN Implementation Plan at the earliest.

5.8 CNS/MET SG was also informed about the discussions that took place in PBN TF regarding the display limitations related to the RNP operations to levels below 0.3. Based on the experience gained by some of the States, PBN TF recommended an alternate means of compliance and developed following draft Conclusion. CNS/MET SG after reviewing the recommendation endorsed the draft Conclusion:

Draft Conclusion 14/xx – Aircraft Equipage Requirements

That, ICAO provide 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 an alternate means of compliance if supplemented by appropriate flight crew training for RNP value of 0.3 RNP or greater.

PBN Implementation Progress Report

5.9 Meeting was informed about the discussion that took place in PBN TF meeting regarding the measurements proposed for assessing the benefits of PBN implementation. It was informed that PBN TF was of the view that PBN Progress Report Template should include the impact on safety, gains in efficiency, environmental savings and infrastructure cost reduction to synchronize them with the performance based measurements concept. After review of the PBN TF recommendation, meeting endorsed following draft Decision on this issue:

Draft Decision 14/xx – PBN Performance Metrics

That, CNS/MET SG, ATM/AIS/SAR SG be tasked to review and consider amending the APAC Performance Monitoring and Measurement Metrics 2 and 3 for PBN to include specific measurements that capture operational benefits in terms of PBN's ability to help fulfill strategic objectives: safety, efficiency, capacity, access and the environment.

Feasibility of Establishing a Regional RAIM Prediction System

5.10 It was informed that PBN Manual requires the States and ANSPs to provide timely warning of GNSS RAIM outages to the users of the services like the pilots, flight dispatchers, Air Traffic Controllers and Airspace Planners. Meeting was briefed about the advantages that can accrue from generating harmonized regional RAIM prediction information. It was informed that AEROTHAI has been requested to develop more detailed technical architecture, operational concepts and administrative arrangements and an action item was developed by the PBN TF.

PBN Flight Planning Issues

5.11 Meeting was briefed about the PBN issues related to the Flight Plan Amendment, which becomes applicable in November 2012. PBN TF had developed action items to address these issues.

Meeting appreciated the support provided by Hong Kong China in hosting the meeting and conveyed its thanks to the Civil Aviation Department of Hong Kong China for this help.

5.12 States and International Organizations appreciated the work done by the Task Force and expressed that the Tasks assigned to the Task Force will grow in future. Meeting also expressed that though GNSS has been there since last about sixteen to seventeen years, yet there is some resistance in its adoption by some States. It was agreed that the concerted efforts are needed to develop a global acceptance of GNSS to support PBN implementation.

PBN Task Force

5.13 Chairman, PBN Task Force, through Working Paper 09 presented a comprehensive report on the PBN Task Force activities. It was informed that PBN Task Force had planned two meetings 2010, but has been able to organize only one so far, the second meeting is scheduled in September 2010. Paper informed the meeting about various global and regional developments that have taken place in the implementation scenario. Meeting was also briefed about the future work program of the PBN Task Force and was informed that the 37th Session of ICAO Assembly will be presented a report and will be informed about the future program on this subject. Paper requested the meeting to recognize the work accomplished by the PBN Task Force and the need for ongoing ICAO regional support to continue the PBN and APV tasks. Meeting was also urged to develop a recommendation that the Task Force be continued in the manner suggested above. Essentiality of continuing PBN Task Force for more time was generally agreed to by the meeting. It was expressed that PBN implementation is still going on and hence PBN TF has to be there to support this

implementation. It was agreed that at least more meetings of the Task Force should be held after PBN TF/7 and TF/8.

5.14 The meeting considered the terms of reference of the PBN TF and the continuing contribution the TF can make to the implementation of PBN in the Asia/Pacific Region. The meeting considered the existing terms of reference were appropriate to allow the PBN TF to focus on implementation and to move on from the planning phase of PBN implementation. The meeting also observed that the TF should pass routine and repetitious task to other bodies more appropriate to undertake these activities. Example being education and training which can be transferred to aviation academies. The meeting was of the opinion that the PBN TF should be extended with a life of 3 to 5 years and formulated the following Draft Decision:

Draft Decision 14/xx -PBN Task Force continuation

That, the PBN Task Force be continued for a period of 3 to 5 years with the existing terms of reference and the focus of the TF be on implementation support with routine and repetitious tasks being past to other groups.

PBN State Plan Harmonization

5.15 IATA, on behalf of Australia, Hong Kong China, New Zealand and Thailand presented a report on the PBN State Plan harmonization in the region through Working Paper 45. Highlighting the slow progress of PBN implementation in the region, it was informed that approximately half of the Asia Pacific regional States had not submitted their PBN Implementation Plan by the end of 2009 (as required by ICAO Assembly Resolution). Out of the plans submitted, only one third demonstrated a path towards timely and successful implementation. The paper also predicts that APAC region will not be able to meet implementation targets and stands at the risk of not meeting ICAO Resolution A36-23 requirements. Paper goes on to describe the review criteria and review methodology adopted in the assessment of State PBN Implementation Plans and provides an outcome of their assessment. In conclusion, the paper categorizes the plans received in three categories based on their quality:

- i) Robust – when 8 to 10 basic plan elements (BPE) are satisfied
- ii) Marginal – when 5 to 7 BPE are satisfied
- iii) Incomplete – when 4 or less BPE are satisfied

5.16 Out of the 21 plans assessed, 7 were rated as robust, 5 were rated as marginal and 9 were rated incomplete. It was informed that individual plan assessment letters will be issued through ICAO to each State, providing confidential feedback and suggesting improvements.

5.17 Tool used for the assessment of the State Implementation Plans was appreciated by the meeting and it was hoped that the States will benefit tremendously from the feedback and suggestions. It was also hoped that this assessment feedback will not be taken as criticism by the States. In response to a query, the meeting was informed that the assessment criteria was developed in PBN TF/6 and it was proposed that this tool should be passed on to ICAO HQ for its global usage. Meeting was of the view that those States, which have acquired implementation experience and which have the skills available on the subject should support the States, which are not that well informed in the implementation. Some participants were of the view that non-submission of the Implementation Plan should not be taken as deficiency, but efforts should be made to find out as to why these States have not submitted their plans in time. It was also suggested that the issue of non submission of plan should be taken up in APANPIRG and DGCA meetings.

Regional Support Strategy for PBN Implementation

5.18 On the subject of providing support to the States to achieve acceleration in the implementation, IATA proposed a strategy through Working Paper 49. It was observed that the State progress on implementation of PBN is slow, though the Regional Plan providing guidance on PBN implementation has been delivered and a number of training programmes and seminars have been conducted on the subject. Strategy proposed includes (but is not limited to)

- Establishing a PBN Regional Development and Implementation (REDI) Team to identify implementation needs and organize resources for that;
- Formulation of cooperative arrangements with volunteering States that are advanced in PBN;
- Develop additional support mechanism that creates skills and capabilities within States to implement and sustain PBN operations; and
- Promote PBN to decision makers.

Implementation of GNSS

5.19 While discussing WP 02 regarding updating of the GNSS Manual Rev 1 (2005), the Meeting noted the slow progress of aviation in implementing GNSS applications in some new ATM initiatives such as PBN, RNP approaches, etc where GNSS is a core technology. While the Meeting recognized much progress had been achieved in the PBN initiative such as use of GNSS in the oceanic phase but it felt more could be achieved in the terminal and approach phases. Also the Meeting noted there is a lack of formal adoption of GNSS in most States. The Meeting brainstormed ways for greater implementation of GNSS in the aviation field, including overcoming of existing hurdles. The Meeting agreed that this slow implementation of GNSS applications in some aviation fields should be brought to the attention of the coming DGCA Conference in Macao, China as well as the 37th Session of the ICAO Assembly.

5.20 The Meeting noted that a number of hurdles had been identified in WP 2 by the Navigation Systems Panel (please see **Appendix xx**). Rev 2 of the GNSS Manual, expected to be out by end 2010, would provide guidance on how to deal with these hurdles and would become a more useful reference document in guiding States in GNSS implementation. ICAO HQ is soliciting feedback from Regional Offices regarding this list of hurdles. In order to make Rev 2 of the GNSS Manual a useful reference document and as Asia/Pac's contribution to the updated Manual, the Meeting adopted the following Decision.

Decision 14/xx -.....

That, Secretariat circulates WP 2 to members of the CNS/MET SG and points-of-contact of the PBN Task Force to solicit feedback of additional hurdles encountered in the implementation of GNSS.

5.21 The Meeting was briefed that Rev 1 of the GNSS Manual contains substantial information about GNSS implementation. From feedback received and queries from States, States may not be aware of the GNSS Manual. The Meeting suggested a need to raise awareness of the existence of GNSS Manual among the aviation community such as to present a copy of the Rev 1 GNSS Manual to each DG at the coming DGCA Conference.

5.22 The Meeting also brainstormed the possibility of forming Regional Development and Implementation (REDI) team to assist States in their PBN implementation as well as to facilitate

Regional support. The mechanism of forming such a REDI team could be along the line of the set-up of the Beijing Instrument Procedure Office. The Meeting discussed the tentative terms of reference and scope of the REDI team and these could be found attached at [Appendix xx](#)

5.23 In view of the above brainstorming, the Meeting adopted the following draft Conclusion for promotion of greater implementation of GNSS applications in the aviation field:-

Draft Conclusion 14/xx – Progress of GNSS Implementation & Awareness of GNSS Manual

That ICAO

- a) Highlights the slow progress of GNSS implementation in the aviation field at forums such as the coming DGCA Conference in Macao, China and the 37th Session of ICAO General Assembly in September 2010; and
- b) Raise the awareness of existence of the GNSS Manual among the aviation community

Revision of the GNSS Manual Doc 9849

5.24 The meeting was informed that ICAO through the Navigation Systems Panel (NSP) has commenced the revision of the GNSS Manual Doc 9849 with the target of presenting the revised manual to the November 2010 meeting of the NSP for consideration. The Secretary of the NSP has sought the input of regional group to identify hurdles to the implementation of GNSS applications. The meeting was provided with examples of implementation hurdles already identified. The discussed a range of hurdles and considered many of the institutional issues could be addressed by authoritative information provided in the revised GNSS Manual.

Ionspheric Data Collection

5.25 In the CNS/MET SG/13 and APANPIRG/20 meetings, it was agreed to develop a cooperative effort in developing a standard ionospheric model for the region to facilitate implementation of GNSS. As a first step, it was decided that Focal Contact Points in the States should be identified, who will coordinate in the matters of ionospheric data collection. The second step is to be discussed in this meeting. The progress was reported that has taken place in the identification of Focal Contact Points and invites the meeting to discuss the second step in the direction of developing the model.

5.26 Japan provided a comprehensive paper describing activities in monitoring and possible mitigations of ionosphere characteristics in the low latitudes. The paper noted that the Electronic Navigation Research Institute (ENRI) has successfully developed a prototype GBAS that Cat I performance in the Japanese ionosphere environment. The paper promoted the cooperative collection and sharing of ionospheric data particularly in the period leading to and during the next solar maximum which is expected to occur in 2013. Japan also suggested that workshop be conducted by voluntary group to enhance the understanding of ionosphere issues.

5.27 Australia presented the findings of a historic review of ionospheric characteristics observed in the Australian mid latitude. The review found from the observed data that ionospheric excursions were well contained with the threat space developed for the contiguous United States. The methodology used in the Australian study is proposed as an evaluation tool for other States.

5.28 The meeting agreed the worth of a coordinated ionospheric review and measurement campaign. Japan was invited to provide technical leadership with the ICAO providing support for

development of a measurement campaign coordinated through the points of contacts nominated by States. The coordination is initially to be undertaken by correspondence and with option of a meeting further into the program.

Navigation Strategy

5.29 The Navigation Strategy for the Asia/Pacific Region was reviewed and was found to be appropriate without revision.

The meeting noted the ninth Edition of the flight inspection Catalogue

5.30 The meeting noted that the twentieth meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/20) held in September 2009 urged States to update the information in the Flight Inspection Catalogue and encouraged ICAO to publish the new edition of the Catalogue by end of October 2009. The Updated *Catalogue of Flight Inspection Units Asia and Pacific Regions* was published in October 2009 as the Ninth Edition which is available on the following ICAO website: http://www.bangkok.icao.int/edocs/cns/cfiu_ver9.pdf

The Catalogue of Flight Calibration Units in the Asia and Pacific Regions can be used to facilitate those States, which do not have the Flight Calibration Units of their own and are desirous of utilizing the services of some other State in meeting ICAO requirement of periodical calibration of their Navigation Facilities.

IFIS 16th

5.31 The meeting was informed that the 16th International Flight Inspection Symposium, organized by Organized by Flight Inspection Center of CAAC and The International Committee for Airspace Standards was held in Beijing, China from 21 to 25 June 2010. The Symposium was attended by 202 participants from the flight inspection/validation organisations, industry partners of 36 States/ Administrations including 10 Administrations in APAC Region with additional local participants from various places in China. This was the first time that such Symposium held in the APAC Region. The objective of the Symposium was to exchange technical information and experiences gained in flight inspection and validation and promote development of new technology. The outcome of the regional seminar on Testing of Navigation and Surveillance Facilities and Validation of Flight Procedures and its follow-up actions taken by Navigation System Panel was provided to the Symposium.

Agenda Item 6: Surveillance

- 1) review outcome of Regulator's Workshop on ADS-B avionics equipage requirements and report of the Ninth Meeting of ADS-B Study and Implementation Task Force
- 2) review strategy for the surveillance systems
- 3) discuss other surveillance related issues

Outcome of SEA ADS-B WG/5 Meeting

6.1 The meeting noted that the Fifth Meeting of the South East Asia Sub-Regional ADS-B implementation Working Group hosted by Directorate General of Civil Aviation (DGCA), Indonesia was held from 21 to 22 January 2010 at the Mandarin Oriental Hotel, Jakarta, Indonesia.

6.2 The meeting was attended by 57 participants from Australia, Cambodia, Hong Kong, China, Indonesia, Malaysia, and Singapore, CANSO, IATA and representatives from industries.

6.3 With regard to the requirement to identify optimum coverage of ADS-B ground stations and associated VHF radio voice communication in the sub-regional FIR boundary area, the meeting updated a coverage chart based on the available information presented to the meeting.

Activities updates at SEA ADS-B WG meeting and Issues on Regional TrialsIndonesia

6.4 Indonesia informed the meeting that 27 ADS-B Ground stations with dual system had been installed at Makassar, Sorong, Natuna, Kupang, Merauke, Banda Aceh, Matak, Cilacap, Soekarno Hatta Airport-Jakarta, Tarakan, Pangkalan Bun, Palu, Kintamani - Bali, Waingapu, Alor, Galela, Ambon, Saumlaki, Medan, Pekanbaru, Palembang, Pontianak, Timika, Biak, Kendari, Manado, and Surabaya. Amongst which 18 Stations in the Eastern part of Indonesia are connected to Makassar Air Traffic Service (MAATS) ATM system and 9 ADS-B Ground Station in the Western part of Indonesia are linked to the Remote Control Monitor System (RCMS) in JAATS-Jakarta. The Test-Bed system at DGCA Headquarters is able to monitor and control the ADS-B Data from these 27 ADS-B Ground Stations.

6.5 MAATS-Makassar has been upgraded from Eurocat-X version 2.4 to version 3.15 integrating with ADS-B capabilities and was commissioned in December 2009. DGCA will establish Implementation Team for ADS-B implementation. Required regulations such as Operational Concept, Safety Assessment, ADS-B Procedure will be developed and introduced into CASR. For Near Term, DGCA has a plan to use ADS-B for Situational Awareness in MAATS Center. Cross FIR boundary operational data sharing has been identified as the initial application of ADS-B Services. Based on experience gained in using ADS-B for situational awareness, Indonesia will provide separation services using ADS-B.

6.6 The meeting congratulated Indonesia for the work completed and significant milestone achieved. In response to a query, it was clarified that ADS-B based separation service is expected to be provided in 2013. The meeting also supported the intension of Indonesia for ADS-B data sharing from which huge benefits could be derived.

Singapore

6.7 Singapore informed the meeting that the Civil Aviation Authority of Singapore (CAAS) installed an ADS-B station and an ADS-B data processor in Singapore on 7 December 2009. The installation will:

- a) complement the existing surveillance coverage by the Long Range Radar;
- b) allow Singapore to perform operational trial using ADS-B data; and
- c) complement the coverage of Indonesia and Vietnam through data sharing.

6.8 The ground station supplied by Comsoft GmbH supports ASTERIX Cat 21 versions 0.23, 0.26 and 1.3 with coverage of about 290 NM based on targets of opportunity. The ADS-B data processor can also process versions 0.23, 0.26 and 1.3 of ASTERIX Cat 21. The processing system is able to fuse ADS-B data from various sources and customized filtered dataset for each user.

6.9 It was also informed that the ADS-B data is currently used mainly for technical evaluation and familiarization. CAAS considers purchasing a stand-alone controller position to conduct operational trials, before the commissioning of the new ATM automation system in early 2012. Singapore is ready to share ADS-B data with other States.

Malaysia

Malaysia provided following updates:

- DCA Malaysia had a discussion with DGCA Indonesia at Special Coordination Meeting which was held in June 2009 regarding ADS-B data sharing from Banda Aceh for ATC surveillance in Bay of Bengal. The discussion is still on-going;
- Malaysia had started upgrading the ATM System which will be able to integrate all the surveillance data inclusive of ADS-B. The project is scheduled to be completed in April 2011;
- Malaysian airspace is covered by radar except for a small portion in the Bay of Bengal which at the moment is covered by ADS-C. Nevertheless DCA Malaysia has submitted in 10th Malaysia Plan to install ADS-B station and also upgrade and refurbish the present radars;
- DCA Malaysia expects the timeline for ADS-B mandatory equipage in Kuala Lumpur and Kota Kinabalu FIRs to be before 2020.

6.10 Malaysia was encouraged to advance planning for providing ADS-B based surveillance service for its air space in BoB area.

Hong Kong, China

6.11 Hong Kong China reconfirmed its plan for:

- mandate ADS-B carriage, by end 2013 for aircraft flying over ATS routes L642/M771;
- mandate ADS-B carriage, by end 2014, for aircraft flying within Hong Kong FIR; and
- mandate ADS-B carriage, after 2015 to be confirmed, for low flying aircraft including general aviation aircraft and helicopters.

Cambodia

6.12 The meeting was informed that airspace of Phnom Penh FIR is covered by radar. Cambodia has no immediate plan for the implementation of ADS-B. With assistance provided by JICA, Cambodia has developed a master plan for CNS/ATM systems implementation including ADS-B. Cambodia has coordinated the implementation plan with neighboring States – Laos and Viet Nam. Cambodia has also initiated coordination with Thailand.

Review of sub-regional implementation plan

6.13 Singapore and Indonesia agreed to prepare a paper on further updates to the data sharing template based on experience gained in using the template for next ADS-B SITF meeting to be held in May 2010.

Updates on ADS-B Data Sharing in South China Sea area

6.14 Singapore updated the implementation plan in the South China Sea area. Indonesia, Singapore and Vietnam have been jointly working on the installation of ADS-B ground stations and VHF radios. Discussions were also held between the parties concerned on the ADS-B data sharing and the use of the VHF radio facilities at other party's premises. It was explained that confirmation to the final version of the paper was not received from Viet Nam.

6.15 ADS-B operations will be implemented in the Singapore FIR in 2 phases. In Phase I, ADS-B operations will apply to ATS routes **L642 and M771** while other ATS routes in the Singapore FIR could be covered in Phase II. ADS-B operations will be exclusive and applicable between FL310 and FL410. Aircraft intending to operate in ADS-B airspace will need to be ADS-B equipped and certified accordingly. The task list and proposed milestones will be presented to ADS-B SITF/9 for review.

6.16 CANSO congratulated Indonesia, Viet Nam and Singapore for the project and for coming up with the project timeline and milestone so that all parties could work towards timely completion of the project. It was further stated that this was an excellent example of regional collaboration involving multiple ANSPs which would pave the way for the wider implementation of ADS-B in the ASIA/PAC Region.

6.17 IATA supported efforts made by the three States to enable ADS-B data and DCPC capability sharing. IATA totally endorsed the proposed steps and emphasized the very important role of the project with clear timelines. It was emphasized important of regulator's ADS-B equipment seminar to be held next month. States should finalize their equipment requirement to allow the air space users to have 4-5 years time for equipping of the equipment. At Member Airlines are expecting to receive early benefits as best equipping should be able to receive best service.

6.18 USA made a presentation providing a brief introduction of the Federal Aviation Administration's ADS-B Program, including the following components:

- a) Overview of FAA's NextGen
- b) Program Strategy
- c) Description of Essential Services
- d) Description of Critical Services
- e) Description of Airborne Applications
- f) Existing and Proposed Gulf of Mexico Route Structure;
- g) Domestic and International Agreements

6.19 An essential component of the FAA's Next Generation Air Transportation System (NextGen), is the ADS-B Program. This program will increase safety, capacity and efficiency of air travel and provides critical flight information simultaneously to pilots and air traffic controllers. In response to a query, it was clarified that USA issued the final rule in end of May for Do260B mandate from 2020. It was further explained the mandate does not include ADS-B IN nor include TIB-B and FIS-B. The further information regarding ADS-B project is available on the following FAA's webpage: www.adsb.gov

Australia-Indonesia Data Sharing Project

6.20 Australia and Indonesia provided an update on their data sharing project (IP32). Airservices Australia has approved Phase 1A. Indonesia's DGCA has also approved Phase 1A and an

ADS-B Filter has been installed in MAATS, Makassar. The ADS-B Filter has been tested and integrated into the ATC System in MAATS (Eurocat-X). The tests were conducted between two States and the result of the test was successful.

6.21 The meeting noted that four ADS-B ground stations at Saumlaki, Merauke, Thursday Island and Gove have been installed and are operating. A draft agreement is in the final stage of co-ordination for signature by the two States. The draft is based on large part of the sample agreement developed by SEA ADS-B WG. The meeting noted the planned schedule of the projects and target dates of some specified milestone. Recognising that the agreement needs approval from Foreign and Defence Ministries of Indonesia, the meeting encouraged DGCA to make every effort to get it approved by the authorities as early as possible.

6.22 It should be clarified that no issue of sovereignty is involved as the data derived from aircraft has been shared in ADS-C applications for years. The difference between ADS-C and ADS-B is updating rates. It is not like radar data which may involve liability concerns. Testing activities were undertaken in May 2010. A satellite datalink has been established to exchange the ADS-B data using multicast and using Asterix Category 21 Version 0.23. The testing of this link (Indosat 64Kb) is now complete. The target date of using ADS-B data for situational awareness and safety nets by ATC is set for 2010 for Australia and 2011 for Indonesia. The expected outcome and benefits of the project Phase 1A are as follows:

- reduced numbers of safety incidents at the FIR boundary;
- earlier detection of ATC and pilot errors (co-ordination errors, incorrect Flight level etc);
- increased support and confidence in data sharing to allow introduction of radar-like separation at the FIR boundary in a future phase; and
- technical & operational analysis of data in preparation for future application of radar like separation services.

6.23 Operational ADS-B data from Indonesia was successfully displayed in Australia on the Remote Control & Monitoring System (RCMS). However, the surveillance data will not be displayed for use by air traffic controllers until the Deed of Agreement between the two countries is signed and the formal commissioning activities associated with the link and Filter are completed. Both Indonesia and Australia have developed and have tested ADS-B filters to control and manage data flow under the data sharing agreement. These filters are now installed in the respective ATC centres. A draft Deed of Agreement to support ADS-B data sharing has been developed and is in the final stages of co-ordination before signature by Australia and Indonesia. The agreement is based in large part on the sample agreement developed by **SEA ADS-B Working Group**.

6.24 The project is expected to extend to Phase 1B and possibly Phase 2. The Phase 1A shall be operational before requesting approval to commence phase 1B which would comprise following additional sites:

Australia: Broome, Doongan TBD ******(alternate location to Darwin is considered)
 Indonesia: Waingapu, Kintamani, Kupang
 (All these stations are already operational)

	Milestone	Planned date
1.	Signature of Data sharing agreement	TBD
2.	Complete Inter FIR datalink installed for testing	Completed April 2010
3.	Completion of data link testing:	Completed May 2010
4.	Use of foreign ADS-B data for situational awareness by ATC	August 2010 for Australia

5.	Use of ADS-B data for monitoring by ATC	June 2010 for Indonesia
6.	Use of ADS-B data for situational awareness by ATC	2011 for Indonesia

6.25 Phase 2 - This phase, if approved, could transition to full radar-like separation when both parties have in place suitable ATC infrastructure such as:

- duplicated data communication capability
- Direct Controller Pilot Communication (DCPC) for both parties at the boundary
- revised boundary separation standards and Memorandums of Cooperation
- Policies, regulations and extensive training

6.26 USA commended for the cooperation work done and congratulations for the good work done by the region. IATA indicated strong support for the project and noted still a lot of work need be done and look for the agreement to be signed.

R&D activities on ADS-B, GBAS system technologies in the Republic of Korea (ROK)

6.27 The meeting noted the R&D activities related to ADS-B and Ground Based Augmentation System (GBAS) technologies undertaken in the Republic of Korea.

6.28 Based on the CNS/ATM R&D road map for 2005~2020 in the Republic of Korea(ROK), the Korean government will undertake 19 research programs on next generation aviation safety facilities step by step. Among them GBAS and ADS-B technologies are being developed during 2010~2014 in the ROK which are recommended by the ICAO (International Civil Aviation Organization) standards, particularly focusing on the certification and operation technologies. These systems will be implemented in Korean territory after the successful development of GBAS and ADS-B test-bed system.

Schedule of ADS-B R&D:

- a) Phase 1 (2010-2011) : Development of ADS-B system, Implementation of Test and Evaluation environments;
- b) Phase 2 (2012-2013) : Performance Improvement of air and ground surveillance
- c) Phase 3 (after 2014): Acquiring key technologies, deployment in the domestic area and regulation for installation of ADS-B airborne system;

The Development of the GBAS CAT-I operation technology

- A. 1st Phase (2010-2011) : Certification system development, build a test-bed facility and select a test airport
- B. 2nd Phase (2012-2013) : Ground and flight test, establish operation procedures and certification system
- C. 3rd phase (2014~) : Basic research on equipment and service for GBAS CAT-II/III system

Surveillance Strategy

6.29 The meeting reviewed the regional Surveillance Strategy for Asia/Pacific Regions which was updated by the CNS/MET SG/12 and adopted by APANPIRG/19 in 2008 under Conclusion 19/39.

6.30 It was suggested to insert additional word “cooperation” at last bullet paragraph as follows:

12. Ensure civil-military *cooperation and* interoperability

6.31 It was also suggest to include additional information into the consideration part regarding newly developed standard DO260B (Version 2 ES being developed by ICAO).

6.32 Considering the surveillance strategy to be reviewed the ADS-B Study and Implementation Task Force meeting month, the meeting decide to ask the Secretariat to refer the above comments for consideration by the ADS-B Task Force

Update on the Surveillance and Collision Avoidance RELATED WORK BY ICAO PANELS

6.33 The meeting noted (IP03) the developments that have taken up in the global Aeronautical Surveillance environment and the future direction which the developments are going to take including the changes that have been incorporated through Amendment 85 to Annex 10, outcome of some Aeronautical Surveillance Panel and work programme of SAS Panel and OPLIN Panel.

Agenda Item 7: Regional Preparations for ITU WRC 2012.

- 1) review ICAO position for WRC-2012
- 2) review result of various Regional Preparatory Group Meetings

7.1 Radio Frequency Spectrum is a scarce resource with finite capacity for which demand is continuously increasing because of requirements being generated by new technological applications and periodical expansion of existing services. Continuation of existing aeronautical services and development of new aeronautical applications are dependents on the availability of adequate spectrum. Process of international competition between expanding aeronautical and non-aeronautical radio services takes place in ITU World Radiocommunication Conference (WRC) held every four (approximately) years. Next WRC is scheduled to be held from 23 January to 17 February 2012. To protect the interests of global aeronautical community, ICAO has circulated its position on WRC 2012 Agenda Items of critical interest to Civil Aviation through a State Letter dated 30 June 2009. Working Paper 07 presented by the Secretariat provides information on the regional activities aimed at ensuring inclusion of ICAO position on WRC – 2012 Agenda Items of critical interest to civil aviation in the regional/national position.

First Meeting of the Regional Preparatory Group (RPG) for WRC - 2012

7.2 States have identified focal contact points in their administration who will project ICAO position in the national/regional level forums to try and get this position included in the regional/national position. To provide a forum for these contact focal points to be thoroughly briefed about ICAO position and help them in effectively participate in the national/regional level forums, First Meeting of the Regional Preparatory Group (RPG/1) was organized on 8 and 9 December 2009 in Bangkok. Meeting addressed following agenda items:

- i) Introduction to ITU and WRC Processes;
- ii) Aviation Issues at WRC – 2012; and
- iii) Role of aviation sector in the preparation for WRC – 2012.

Discussion during RPG/1 led to the formulate following draft Conclusion, which was endorsed by the CNS/MET SG/14 after review:

Draft Conclusion 14/xx – 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 meetings 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.

7/3 RPG/1 was informed that the States can get the latest information regarding ICAO position from ICAO Aeronautical Communication Panel (ACP) website <http://www.icao.int/anb/panels/acp/index.cfm>. Some participants were of the view that better visibility should be provided to ICAO Position on WRC – 2012 Agenda Items of interest to civil aviation and developed a draft Conclusion to this effect. CNS/MET SG reviewed agreed with RPG/1 view and endorsed following draft Conclusion formulated by RPG for adoption by APANPIRG:

Draft Conclusion 14/xx – Visibility to CAO Position on WRC – 2012 Agenda Items

That, ICAO be urged to provide better visibility to ICAO Position on WRC – 2012 Agenda Items of critical interest to civil aviation on the ICAO website.

Third Meeting of APT Conference Preparatory Group (APG/3) for WRC – 2012

7.4 APG/3 for WRC – 2012 was held in Bangkok from 8 to 12 March 2012. The meeting was attended by 306 participants representing 27 States, industrial bodies and international organizations. ICAO participated in the meeting with observer status and presented two Information Papers reflecting ICAO Position on WRC – 2012 agenda items of critical interest to civil and ICAO contribution to the ITU – R Working Party activities. Working Paper 07 presented to the meeting covered in detail the outcome of APG/3 on Agenda Items of critical interest to civil aviation. Meeting stressed on the importance of ensuring retention of the existing spectrum and acquisition of additional spectrum for new applications and urged the States to ensure that their delegations to the national/regional forums effectively project ICAO position and to the extent possible ensure its inclusion in the national/regional position. It was commented that if aviation loses spectrum it will lose capacity also.

7.5 With respect to Agenda Item 1.7 of WRC2012 on long term spectrum availability and access to meet the requirements of aeronautical mobile-satellite (R) service which was specifically highlighted during the meeting and States were urged to support Method B specified in the proposal. Different positions taken by national administrations were discussed in the meeting.

Agenda Item 16: Review

- 1) CNS related Performance Framework Forms
- 2) MET related Performance Framework Forms
- 3) review and update CNS/ATM Implementation Planning Matrix

Regional Performance Framework Objective

16.1 The meeting reviewed and discussed the regional Performance Objectives and associated Asia/Pacific performance Metrics.

16.2 The meeting noted that ATM/AIS/SAR SG/20 held two week ago noted that States were required to provide a large number of data making it more difficult to report such information and IATA clarified that there is need to indicate number of measurements for PBN implementation which had been discussed at the sixth meeting of PBN Task Force.

16.3 It was recalled that CNS/MET SG/13 discussed the proposed metrics in particular APAC Efficiency-4 and considered it necessary to further develop the harmonized methodology for measurement once the Metrics are adopted by APANPIRG because the delay could be because of various reasons. The meeting noted that ATM/AIS/SAR SG/20 developed a draft Conclusion to invite ICAO to develop a common set of performance metrics for all the ICAO regions so as to facilitate comparative analysis and establish the globally harmonised guidance on methodology of how to collect the data in order to achieve commonality.

16.4 The meeting also noted that NAT SPG/46 had considered the need to have a clearly defined common approach to performance monitoring and measurement and the need to agree on a uniform set of metrics. The NAT SPG acknowledged the need to identify a suitable set of metrics – Key Performance Indicators (KPI) related to key performance areas (KPA) of: access, capacity, cost effectiveness, efficiency, environment, flexibility, predictability and safety. NAT implementation management group (NAT IMG) has been tasked to identify such metrics i.e. KPIs. These metrics would then be incorporated into a performance monitoring process. The NAT SPG developed following Conclusion:

16.5 The meeting also recalled that APANPIRG/20 also adopted Conclusion 20/3 to encourage States to use the similar template format from the regional objectives as the basis for their national objectives to align with Regional & National performance Objectives. The meeting noted that States are also expected to collect and provide data to support the existing four APAC regional metrics and report to APANPIRG/21.

Performance Framework Forms in the CNS and MET fields

16.6 The meeting reviewed and updated the CNS and MET related five PFFs as adopted by APANPIRG at its 20th meeting. Accordingly the meeting adopted the following draft Decision:

Draft Decision - Performance Framework forms (PFFs)

That, updated performance Framework Forms (PFFs) as contained in the Appendix XX to Report be adopted.

Review of CNS/ATM Implementation and Planning Matrix

16.7 Secretariat presented the matrix reflecting implementation status of CNS/ATM systems in Asia/Pacific Regions. It was noted that the CNS/ATM Implementation Planning Matrix was developed in accordance with the Conclusion 11/37 of APANPIRG and the Matrix has since been updated regularly. CNS/ATM Implementation Matrix reflects the status of implementation of major CNS/ATM elements in the region which includes ATN, AIDC, CPDLC, GNSS, ADS-C and ADS-B.

The meeting was informed that the Matrix was updated by the Fifth meeting of ATN Study and Implementation Task Force held in May 2010 and will be further updated at the next ADS-B Study and Implementation Task Force meeting to held in middle August 2010.

16.8 The meeting encouraged the member States of the Sub-group to provide updates to the information contained in the Table from time to time. Unnecessary to wait for meetings to update the information.

16.9 The meeting reviewed and updated the information in the Matrix which is provided in **Appendix X** to this Report.

16.10 Under this agenda item, the meeting also noted information regarding fellowship training programme provided by the Republic of Korea (ROK) to the developing countries in accordance with MOU signed with ICAO. Since 2001. The ROK has trained 360 fellows from 84 countries in the field of air navigation and ROK will continuously make every possible effort to contribute to balanced development of international civil aviation.

16.11 While the meeting appreciating the training programme provided by the Republic of Korea and important role of training, there was a request for a need to issue the letter of invitation to States and their nominated and selected trainees at least 2 months in advance to allow necessary arrangement for travel which can be made in time.

Agenda Item 17: Review of deficiencies in the CNS and MET fields:

- 1) status of CNS deficiencies (APANPIRG Deficiency List)
- 2) status of MET deficiencies (APANPIRG Deficiency List)

17.1 Status of CNS deficiencies

17.1.1 Presenting the status of deficiencies reviewed by APANPIRG/20, the meeting observed that resolving safety related deficiencies was one of the most important tasks of PIRGs. The meeting reviewed the deficiencies listed in the Deficiency List in the CNS fields.

Air-ground communication in Yangon FIR
(First reported in 1998 and later in July 2010)

17.1.2 The extended-range VHF coverage in the northern part of Yangon FIR utilizes 3 RCAG stations located at Lashio, Mandalay and Sittwe operating on 126.750 MHz. To improve the signal quality, a procedure for selection of RCAG stations has been developed based on the statistics and samples. For the Southern part of Yangon FIR, Yangon ACC utilizes local VHF station in Yangon airport and another two RCAG stations located at Myeik and Pathein operating on 128.750 MHz.

17.1.3 In 2009, IATA provided monitoring reports on the air/ground communications status in Yangon FIR. These reports indicated that some improvement of VHF communication had been achieved. Preliminary review of the report revealed that some 70 percent reports from pilots indicated they had normal air ground communication. Based on the statistics collected by Myanmar, loss of communication with aircraft in Yangon FIR is very low and rare. However, communication difficulties were still experienced by some pilots flying over the FIR

17.1.4 A report was received on 1 July 2010 indicating poor to no communication in the Yangon FIR on VHF 126.750 MHz and HF at 18:00 UTC at FL360. Signal strength was only 1 to 2. No COMS lasting up to 15 minutes.

17.1.5 Myanmar requested IATA and the operators to provide timely feedback for communication problems experienced. It was expected that the report or feedback for investigation should include the following minimum information. The operators are also required to be aware of the characteristics of the communication infrastructure and their condition.

- Time of occurrence and position of occurrence added in the report template;
- ATS Route no. and the closest waypoint when problem experienced;
- Flight level which is important to analyze the coverage of RCAG; and
- The report is required to be forwarded to DCA Myanmar as soon as possible preferably within 1 to 2 days of the occurrence.

17.1.6 While noting and appreciating the efforts made by the Administration and close coordination between IATA and ICAO Regional Office, IATA informed the meeting that roadmap is being worked out to remove requirement for the IFBP in Yangon FIR with target date in September 2010.

ATIS function at Kathmandu and Dhaka airports
(First reported in May 2007)

17.1.7 The meeting noted that the ATIS function has been implemented at TIA, Kathmandu and the deficiency had been deleted from the list of deficiencies in CNS field in 2009.

17.1.8 The ATIS function has been implemented at Dhaka Airport and official notification has been received from Bangladesh on 17 September 2009. The deficiency has been deleted from the list of deficiencies in CNS field accordingly.

Manila-Hong Kong AFTN circuit and Manila – Hong Kong ATS Direct Speech Circuit (First reported in 2007).

17.1.9 The circuit was resumed operational on 4 May 2008. An official notification from Air transportation Office on the Restoration was received on 13 May 2008. However, again in May 2009 there was a 719 minutes of circuit outage when cable was upgraded between CAAP and Philcom on 1 May 2009.

17.1.10 Since February 2010, the circuit stays quite stable. In the last 13 months, there were only three interruptions due to equipment maintenance/problems at Phicom in March, June and August 2009. The circuit serviceability performance has shown that it has achieved satisfactory status i.e. more than 97% except for August, September 2009 which were 85% and 96.4% respectively. CAAP has been invited to notify the Regional Office for removal of the deficiency from the list.

HF communication problem in Mumbai FIR
(First report in September 2006)

17.1.11 Concerns on High Frequency (HF) air-ground communications at Mumbai FIR were expressed at Sixteenth Meeting of ATM/AIS/SAR Sub-group and subsequently in the Seventeenth Meeting of APANPIRG in 2006. The concerns were on the quality of communication particularly, the noisy reception conditions and channel congestions. Follow-up actions were taken by the Airport Authority of India (AAI) to improve HF communications over Mumbai FIR.

17.1.12 However, negative contact on the route B459 has been reported by an operator in 2009. The matter has been taken up and the State has been requested to investigate into the matter and take up urgent rectification to mitigate the problem. . In one report filed on 9 April 2010, Captain of the South African Airways reported ‘No HF communications were established with Mumbai on BOM-JNB. All published frequencies tried including the frequencies given over VHF.’ In a separate report received from the operator’s representative, it has been reported that ‘HF Communication channels over crowded. The same frequencies are in use by multiple control stations. Superfluous information is requested and passed – this causes channel congestion. When contact is made, communication quality is good’.

17.1.13 India informed the meeting that efforts have been made by Airport Authority India to improve the services by replacing antenna. HF receivers will be replaced with new ones at end of this year. The recent report from a flight on JNB-BOM indicated that the HF communications in Mumbai FIR has been improved. In view of the foregoing, the meeting agreed not to include it into the list of Deficiencies for the time being.

Navigation Aids Performance deficiencies in Philippines
(First report in September 2009)

17.1.14 Disruption of Air Traffic Services in Manila FIR was reported on 13 September 2009 for about two hours. It was reported that the Standby Power source failed to takeover the load when the main power failed. It has been reported that action for the new CNS/ATM project is in procurement stage and is expected to be operational by 2013. Interim project of replacement of the 14 year old ATM System in Manila has also been taken up.

17.1.15 Subsequently on 19 June 2010, failure of DVOR at Manila was reported at 05:30 leading to non availability of instrument approach procedures at the Ninoy Aquino International Airport (NAIA). The facility was restored on 23 June at around 3:00 am (local time). Both the ILSs

provided to serve the instrument runway were unserviceable. It has earlier been reported that the ILSs and DVOR provided at the NAIA are quite old and have become unreliable. Moreover, difficulty is being faced in getting spares for the equipment. The ILS 24 and ILS 06 became unserviceable on 26 September 2009 and 27 October 2009 respectively. The Administration has been urged to take necessary remedial action at the earliest. This was considered as deficiency in CNS field subject to remedial action by the Civil Aviation Authority of Pakistan.

Poor ground/ground communication between Afghanistan and Pakistan

17.1.16 Because lack of reliable communication infrastructure between Afghanistan and Pakistan, the poor performance of Aeronautical Fix Service including data communication between Kabul and Karachi and ATS voice communication between Lahore and Kabul has become an issue of concern. Karachi – Kabul AFTN circuit became intermittent since 29 June 2010 due to unstable performance of VSAT system. Currently e-mail and AFTN messages are sent from Karachi AFTN centre but no response is normally received. AFS requirements as specified in the regional air navigation plan are not met. Administrations were urged to work out a remedial solution and improve the AFS service.

Agenda Item 18: Future Programme.**TOR and Subject/Tasks List of CNS/MET Sub-group**

18.1 The meeting reviewed the Terms of Reference of the Sub Group. The meeting did not identify the need to amend the Terms of Reference. The meeting also reviewed the Subject/Tasks List and included several new items including further development of regional HF radio communication guidance material and conducting analysis of isomorphic data collected for development of model for GNSS, promote implementation of AIDC, and improve AMS(R)S communication in the remote and oceanic area in the Tasks List and XX in MET field. The status of on-going tasks was also updated where necessary. Accordingly the meeting adopted the following Decision.

Draft Decision 14/xx - Updated Terms of Reference and Subject/Tasks List of the CNS/MET Sub-group

That, the revised Terms of Reference and Subject/Tasks List of the CNS/MET Sub-group provided in **Appendices XX** and **XX** to the Report be adopted.

Next Meeting

18.2 It was agreed that the Fifteenth Meeting of the CNS/MET Sub Group should be scheduled tentatively for 18 to 22 July 2011 at the Regional Office, Bangkok. The dates are to be confirmed by the APANPIRG/20 meeting.

Agenda Item 19 : Any other Business

19.1 Under this agenda item, meeting was provided with an updates on the development of NextGen by the USA. Current demands on the United States of America's national air transportation system are exceeding its ability to provide sufficient system capacity domestically and abroad. Operating and maintenance costs of the air traffic system are outpacing revenues, and the air carrier industry is experiencing a period of dramatic change. Security requirements established in the aftermath of the 11 September 2001 jetliner attacks have significantly impacted costs and the ability to efficiently move people and cargo. In addition, growth in air transportation is provoking community concerns over aircraft noise, pollution, and congestion.

19.2 Merely adapting air transportation's current paradigm will not be sufficient to meet its challenges. Instead, transformation of today's system is required to ensure a healthy, environmentally friendly, globally interoperable air transportation system for 2025. In 2003, the U.S. Congress established the Joint Planning and Development Office (JPDO) to define a national strategy for developing the Next Generation Air Transportation System (NextGen). The NextGen vision for 2025 enables the safe, efficient and reliable movement of large numbers of people and goods throughout the air transportation system in a way that is consistent with national security objectives. NextGen's vision is founded upon an underlying set of principles and enabled by a series of key capabilities that will free the U.S of many current system constraints, support a wider range of operations, and deliver an overall system capacity up to three times greater than that of current operating levels.

19.3 The meeting noted the initiative taken by India (IP39) in implementing automation to improve the overall capability in Aeronautical Information Service through establishing an Integrated AIS/AIM System to manage aeronautical data chain processes involved indesigning to publication stages of Aeronautical Information Publication products including Aeronautical Maps/Charts and Circulars.

19.4 The meeting expressed appreciation and gratitude to DGCA, Indonesia for hosting the meeting, excellent arrangements made and hospitality extended to the participants.
