International Civil Aviation Organization

**THE SIXTH MEETING OF AERONAUTCAL
TELECOMMUNICATION NETWORK (ATN)
IMPLEMENTATION CO-ORDINATION GROUP
OF APANPIRG (ATNICG/6)**

Seoul, Republic of Korea, 16 - 20 May 2011

MLTM

KAC
KOREA AIRPORTS CORPORATION

Agenda Item 3:   **Review outcome of relevant meetings**

**OUTCOME OF CNS/MET SG/14 AND APANPIRG/21 MEETINGS
RELEVENT TO AFS AND AMS**

(Presented by the Secretariat)

SUMMARY

CNS/MET SG/14 was held from 19 to 22 July in Jakarta, Indonesia
and APANPIRG/21 was held from 6 to 10 September in Bangkok.
This paper presents information on the AFS and AMS related
outcomes of the two meetings.

1.   INTRODUCTION

1.1   Fourteenth Meeting of the Communication. Navigation and Surveillance/Meteorology
Sub Group (CNS/MET SG/14) of Asia/Pacific Air Navigation Planning and Implementation Regional
Group (APANPIRG), hosted by Directorate General of Civil Aviation (DGCA) Indonesia was held at
Le Meridian Hotel, Jakarta, Indonesia from 19 to 22 July 2010. The meeting was attended by 104
experts from 24 States/Administrations, 2 International Organizations (IATA, IFALPA) and a
Telecommunication Service Provider –SITA.   Meeting after reviewing the outcome of ATNICG/5
meeting and additional information provided through Working/Information Papers, developed
recommendations for the consideration of APANPIRG/21 meeting. Full report of the meeting is
available   on   the   ICAO   APAC   Office   website   and   can   be   accessed   at   the   address
http://www.bangkok.icao.int/Meetings/2010/cnsmet_sg14/cnsmet_sg14rpt.pdf.

1.2   Twenty first meeting of Asia Pacific Air Navigation Planning and Implementation
Regional Group (APANPIRG) was held in Bangkok from 6 to 10 September 2010. The meeting was
attended by 114 participants from 23 Member States and 3 International Organizations (IATA, IACA
and CANSO).   The meeting was chaired by Mr. W.L. Wong, Senior Director, Changi Airport
Advisory Group, Civil Aviation Authority of Singapore and Chairman APANPIRG.

1.3   APANPIRG/21 adopted 59 Conclusions, based on the presentations made in the
meeting and the recommendations developed by APANPIRG Sub-Group meetings.   Extract of the
report on Agenda Item 3.4 (CNS/MET) relevant for Aeronautical Fixed Services (AFS) and

Aeronautical Mobile Services (AMS) is placed at **Attachment A** to this paper. Full report of the meeting on Agenda Item 3.4 can be accessed on ICAO APAC Office website at the address: http://www.icao.or.th/apanpirg/apanpirg21/Agenda_Item%203-4rpt.pdf. APANPIRG reports are protected by password.

1.4   Some of these Conclusions requiring attention of ICAO HQ were referred to Air Navigation Commission (ANC). A report on ANC outcome and the follow up action taken on the Conclusions/Decisions relevant for ATNICG are placed at **Attachment B** to this paper.

2.   DISCUSSION

2.1   CNS/MET SG/14 held from 19 to 22 July and the Twenty First meeting of APANPIRG (APANPIRG/21) held from 6 to 10 September 2010, in addition to other items of agenda, reviewed issues related to the implementation and operation of Aeronautical Fixed Services (AFS) and Aeronautical Mobile Services (AMS). Some of the items discussed in the two meetings are being discussed below:

ICAO Asia/Pacific Seamless ATM Workshop

2.2   46th Conference of Directors General of Civil Aviation (DGCAs), Asia and Pacific Regions was held in Osaka, Japan from 12 – 16 October 2009.   215 delegates from 34 States/Administrations and 5 International Organizations attended the Conference. Action Items 46/6 developed by the Conference on Seamless Sky – ATM was further discussed in CNS/MET SG/14 and APANPIRG/21 meetings and it was informed that ATM/AIS/SAR SG/20 had developed a draft Conclusion inviting ICAO to convene a Workshop in early 2011 on planning the future ATM systems. The draft Conclusion was adopted by the APANPIRG/21 meeting. The Workshop along with the first meeting of the Ad-hoc Group on the subject, which were originally scheduled from 11 to 14 April, 2011 in Tokyo had to be postponed.

ATNICG/5 Meeting

2.3   Meeting was presented a report on the outcome of the Fifth Meeting of ATNICG (ATNICG/5) held in Kuala Lumpur, Malaysia from 31 May to 4 June 2010 along with the recommendations of CNS/MET SG/14. Draft Conclusions/Decisions developed by ATNICG/5 and recommended by CNS/MEG SG/14 were adopted by APANPIRG without any modifications. APANPIRG also adopted the amended Subject/Tasks list for ATNICG as proposed by ATNICG/5 and recommended by CNS/MET SG/14.   Full report of the meeting is available on the ICAO APAC office   website   and   can   be   accessed   on   the   address http://www.icao.or.th/meetings/2010/atnicg5/ATNICG5rpt.pdf. CNS/MET SG and APANPIRG complemented Directorate General of Civil Aviation, Malaysia for hosting ATNICG/5.

Pan-Regional ICD for AIDC

2.4   Meeting noted that NAT SPG had agreed to the development of Pan-regional ICAO guidance material for oceanic AIDC ICD based on the current AIDC ICD (Version 3.0) adopted by APANPIRG and the latest AIDC ICD used in the NAT Region. It was agreed that the task of harmonizing the NAT and APAC AIDC ICDs should be advanced in accordance with the principles, which have been detailed in para 3.4.22 of the relevant Attachment to the APANPIG/21 report. Meeting did not agree to the proposal of naming the document as "Pan-regional ICD for Oceanic AIDC" as recommended by NAT SPG and adopted Conclusion 21/26 recommending to name the document as "Pan-regional ICD for AIDC", since the APAC AIDC ICD applies to all the airspace including ATS units and ATM systems serving oceanic, continental and regional airspace and is not restricted to oceanic airspace only.

2.5   To facilitate the States in implementing AIDC in their administrations, Seminar on 'ATS Inter-facility Data Communication (AIDC) Implementation' was conducted on 12 and 13 October 2010 in Bangkok. The seminar was addressed by the invited experts from the industry and from the States, which have already implemented AIDC and it provided a platform for the States to exchange information and experiences related to implementation and operation of AIDC. Seminar urged the States to implement AIDC in their administration, identified a number of items to be included in the Pan Regional ICD for AIDC, discussed AIDC planner developed by Hong Kong China and also considered the option of using dedicated stand-alone server for AIDC as used by one of the participating States. Participants found the seminar to be very useful.

                            Network Incompatibility Issues

2.6   USA proposed a possible solution to the problem of mismatch of networks. The solution was 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 Messaging Management Centers (AMCs), 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 future. USA also informed about the proposed XML trials over AMHS planned between Hong Kong China, USA and Singapore. Some additional recommendations were also made about the communication systems for future.

3.   RECOMMENDED ACTIONS

a) The meeting is invited to note the outcome of CNS/MET SG/14 and APANPIRG/21 meetings;

b) The meeting is invited to note ANC outcome on APANPIRG Conclusions and follow up actions taken on the remaining items.

c) The meeting is also invited to note the outcome of AIDC Seminar held on 12 and 13 October 2010; and

d) To note information provided by USA promoting solutions based on applications to avoid network incompatibilities and invite USA to provide information on the outcome of the XML trials conducted.

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Aeronautical Fixed Service

AMHS Implementation Plan

3.4.1   Hong Kong China, proposed phased approach to ensure an orderly testing and implementation of AMHS in the region.   To avoid the complexities and time involved in testing every possible combination of a large number of MTAs in the region, it was proposed that the 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 and when IPS is available were explained in detail.   In accordance with the phased testing approach explained above, an AMHS Implementation Planner developed to support the States in planning testing and implementation of AMHS in their Administrations was also presented to the meeting.

Fifth Meeting of ATNICG

3.4.2   The 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.

3.4.3   ATNICG reviewed the Subject/Tasks list assigned for the Group and decided to propose new sub-tasks and remove some of the existing ones on the basis of developments that have taken place. CNS/MET SG Meeting reviewed the updated Subject/Tasks List placed at **Appendix A** to this report and adopted the following Decision:

Decision 21/16 - ATNICG Subject/Tasks List

That, the updated Subject/Tasks List placed at **Appendix A** to the Report on Agenda Item 3.4 be adopted.

Clarifications on ICAO Doc 9896

3.4.4   The meeting noted the outcome of Aeronautical Communication Panel (ACP) Working Group of the Whole meeting held from 18 to 22 January 2010 in Montreal. It was informed that Edition 2 of Doc 9896, guidance document on ATN using IPS had been delivered.   Differences between Edition 1 and 2 of Doc 9896 were explained and inclusion of Voice over IP (VoIP) in the later edition was informed.   The meeting also noted issues related to the on-line and off-line Directory Services and adopted following Conclusion:

Conclusion 21/17 - ICAO Doc 9896 clarifications

That ICAO be invited to provide clarifications on the following issues related to ATN/AMHS implementation

   i)   VoIP should be limited to ATS ground service since the ICAO approach is to encourage data communication such as CPDLC for air-ground communication. 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.

ATNICG Working Group Activities

3.4.5   Sixth meeting of ATNICG Working Group (ATNICG WG/6) was held in Hua Hin, Thailand from 22 to 25 September 2009 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). The meeting was informed about the commissioning of AMHS link between Hong Kong and Macao in December 2009.

Review ATN/AMHS Implementation Status

3.4.6   Implementation status was 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 updated through the Implementation Planner and following Decision was adopted:

> **Decision 21/18 - Regional ATN/AMHS Implementation Planner**
>
> That, the Asia/Pacific Regional Implementation Planner Placed at **Appendix B** to the Report on Agenda Item 3.4 be adopted to report ATN/AMHS implementation progress in the region.

Review of implementation plan and status from other ICAO regions

3.4.7   It was informed that MID region had adopted ATN over IPS, which will maintain compatibility with AFTN, CIDIN and ISO/OSI based implementations 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 inter-regional AMHS connectivity following the prescribed procedure. The meeting adopted the following Conclusion based on recommendation of CNS/MET SG:

> **Conclusion 21/19 - AMHS connectivity with ICAO MID region**
>
> That Singapore, Pakistan and India take initiative in transiting to AMHS connectivity with Bahrain, Kuwait, Iran and Oman respectively at the earliest.

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

3.4.8   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

3.4.9   Singapore presented the ATN/AMHS Implementation Strategy as updated by ATNICG/5 for review. Changes proposed in the format of the Strategy were noted. The 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 limited for connectivity between MTAs and their UAs. The meeting, after deliberations decided to adopt following Conclusion:

**Conclusion 21/20 -   Strategy for Implementation of Aeronautical
                                    Telecommunication Network (ATN) in the Asia/Pacific Region**

That, the document provided at **Appendix C** to the Report on Agenda Item 3.4 be adopted as Strategy for Implementation of Aeronautical Telecommunication Network (ATN) in the Asia/Pacific Region.

ATS Messaging Management Centers (AMC) Data

3.4.10   The meeting was informed about the observation made in ATNICG/5 that AMC data provided by the States was sometimes not correct though 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 Conclusion:

Conclusion 21/21 - AMC Information Form

That, States be invited to provide data for AMC in respect of their Administration in the format provided at **Appendix D** to the report on agenda item 3.4.

Use of Directory Service

3.4.11   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 formulated 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

3.4.12   ATNICG reviewed two Addressing Plans, one based on the IPv6 and the other based on IPv4 which has been adopted in the CAR/SAM region. Based on the IPv4 and IPv6 addressing plans proposed, the meeting considered the following:

> 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 (IPS) 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.

3.4.13 Based on the considerations mentioned above, meeting adopted following Conclusion developed by ATNICG and recommended by the CNS/MET SG:

Conclusion 21/22 – Asia/Pacific ATN Interim Addressing Plan

That,

i) The proposed IPv6 and IPv4 addressing schemes be submitted to ICAO and ICAO be requested to consider a global IPv6 addressing scheme for ground-ground communication;

ii) The proposed IPv4 address plan placed at **Appendix E** to this report on agenda item 3.4 be adopted to enable the Asia/Pacific ATN ground IPS network implementation to proceed using IPv4 in the interim with minimum delay; and

iii) The Asia/Pacific region transition to IPv6 once the above issues have been resolved.

Amendment of Regional Documents

3.4.14 The 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. The recommended change in the document was adopted by APANPIRG.

3.4.15 ATNICG WG/6 was informed that the current test cases provided in Annex C to Asia/Pacific AMHS Manual are somewhat limited in the scope of verifying routing capabilities of ATN routers operating in multiple domains and hence amendment proposed by ATNICG to include additional test cases and endorsed by CNS/MET SG was adopted by the meeting.

3.4.16 Updated version of guidance document on Management, Operation and Technical Controls on Security recommended by CNS/MET SG was adopted.

3.4.17 The meeting also agreed to the ATNICG recommendation 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.

3.4.18   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 and was recommended for adoption by APANPIRG.

3.4.19   In view of the foregoing , the meeting adopted the following Conclusion:

Conclusion 21/23 – Amendment/update of Regional ATN/AMHS Guidance Documents

That, the following amended Regional Guidance Documents for ATN/AMHS implementation be adopted and distributed to the States:

a) the amended Asia/Pacific ATN Network Service Access Point (NSAP) Addressing Plan for Asia/Pacific Region as provided in the **Appendix F** to the Report on Agenda Item 3.4;

b) the Test Procedure for ATN Router Connection Test, Annex C to Asia/Pacific AMHS Manual as provided in the **Appendix G** to the Report on Agenda Item 3.4;

c) "Asia/Pacific ATN Security Guidance Document" to replace the existing Asia/Pacific ATN Security Guidance Document, Draft First Edition as provided in **Appendix H** to the Report on Agenda Item 3.4; and

d) the phased testing procedure to transit from AFTN routing to MTA-to-any-MTA routing to be incorporated in the AMHS Manual as provided in **Appendix I** to the Report on Agenda Item 3.4.

3.4.27   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 felt that there may be a requirement to amend the FASID tables to accommodate the unique requirement of IPS and proposed that an additional sub task be introduced in the Subject/Tasks list for ATNICG.

3.4.28   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 also informed that PDR has since been renamed as Amendment Proposals. The meeting therefore adopted following Conclusion for providing an opportunity of raising PDR to such States, which were not attending ACP meetings:

Conclusion 21/24 - Points for Proposed Defect Report (PDR) (Amendment Proposal) raised in the region

That, States be invited to present their ATN/AMHS implementation related Points for Proposed Defect Report (PDR) (Amendment Proposal) to the ICAO APAC Office. These points will be presented to the ATNICG/ATNICG Working Group (whichever is scheduled earlier) by the Secretariat for endorsement, so that these points, along with the ATNICG/ATNICG   WG   recommendations   can   be   forwarded   to ACP WG – M Secretariat through ICAO APAC Office.

3.4.29   Japan presented its proposal to the ATNICG Meeting for AFTN Routing Change between Japan and Russia in view of the developments that have taken place lately. It was agreed that ICAO Regional office should coordinate with Europe Region for updating the AFTN routing directory. Accordingly the meeting adopted the following Conclusion formulated by ATNICG:

Conclusion 21/25 – Japan/Russia AFTN Routing Change

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

3.4.30   It was informed that the next Working Group (ATNICG WG/8) meeting has been planned to be held from 28 September to 1 October 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.

3.4.31   The 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.

Pan-regional ICD for AIDC

3.4.32   The meeting noted 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 their effort by drafting a consolidated ICD with a thorough bi-directional tracking of content;

b) Since the ICD would apply to oceanic regions only 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 become 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 have 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.

3.4.33   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.

3.4.34   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 adopted following Conclusion:

Conclusion 21/26 – Pan-Regional ICD for AIDC

That, ICAO Regional Office inform the NATSPG that the proposed title "Pan-regional ICD for Oceanic AIDC" is unacceptable as the ICD for AIDC is applicable for use by all ATS and ATM facilities in both oceanic, and continental areas within the Asia Pacific Region; and that the document should be titled as "Pan-Regional ICD for AIDC.

ATS Inter-facility Data Communication (AIDC) Implementation Seminar

3.4.35   Secretariat re-emphasized the need to have error free coordination across FIR boundaries to ensure safety of operations and informed the meeting about the planned ATS Inter-facility Data Communication (AIDC) Implementation Seminar to be held on 12 and 13 October 2010 in Bangkok. This Seminar is being organized under the provision of ICAO Special Implementation Project. Invitation for the Seminar was issued through a State Letter dated 15 July 2010. The meeting encouraged the States to participate in the Seminar to facilitate early implementation of AIDC in the region.

Network Incompatibility Issues

3.4.36   Regarding issues related to network incompatibilities, USA proposed 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 Messaging Management Centers (AMC),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.

3.4.37   Asia/Pac Region is phasing out X.25 sub-network and transiting towards IP sub-network 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 similar requirements. Trial of XML over AMHS has been planned between Hong Kong China, USA and Singapore. 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. The meeting was of the view that since the proposal included issues related to transmission of OPMET messages, ATNICG should coordination with MET working group to harmonize implementation with the requirements.

Aeronautical Mobile Service (AMS)

Satellite Operational Continuity

3.4.38   The meeting noted that the end to end serviceability performance of SATCOM data-link has improved to some extent since late 2009. The meeting noted that service provider/stakeholders 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 have started using MTSAT through SITA AIRCOM service.

3.4.39　　　　It was noted that although improvement for end to end communication performance is still required, the data-link requirement for RNP 4 based separation in the South Pacific could be marginally achieved. The meeting further noted that the chain of SATCOM data-link service involves several segments from different service providers and stakeholders including end users. Therefore improvements of the SATCOM data-link service require coordinated and collaborated efforts among all the stockholders and strategic planners. The meeting considered it as a global issue which needs to be addressed at global level.

3.4.40　　　　The meeting noted the recommendation by ICAO that the Air Navigation Service Providers and the Airline Operators should consider to use two or more redundant autonomous 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 the current INMARSAT and MTSAT satellites expire in 2016. Therefore strategic system planning for future system and requirements for the correspondent and/or updated avionics are required.

3.4.41　　　　In this connection, the meeting further discussed possible dates for SOCM/2 Meeting. It was noted that SOCM/2 meeting may be postponed due to the reason that FANS SATCOM Improvement Team Meeting (FSIT) had not been reconvened as planned. However, if the FSIT meeting is not conducted in a reasonable period of time, the meeting agreed that the SOCM/2 meeting should be conducted in 2011. The meeting discussed objectives of the meeting and identified following items that may be included in the agenda for the next (SOCM/2) meeting.

- Review the status of Satellite data-link communication;

- Implementation of improvement plan by stakeholders to develop a common outage/maintenance reporting template and process by CSPs which is useful for States/ANSPs/CRAs;

- Develop common format for service level agreement between CSPs and State/ANSPs/ Operators based on requirements in the GOLD;

- Satellite Communication Voice for routine ATS; and

- 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.

3.4.42　　　　In this connection, attention of the meeting was also drawn to the *'Guidance Material for the Asia/Pacific Region for ADS/CPDLC/AIDC Ground Systems Procurement and Implementation'* provided on the ICAO Asia/Pacific Regional website through the link APAC e-documents for guidance in the matters of procurement and implementation of data-link systems.

Review outcome of NAT SPG/46 Meeting

3.4.43　　　　The meeting was informed about the revised version of amendment proposal for the NAT SUPPs (Doc7030) on SATCOM Voice (Conclusion 46/4) adopted by the NAT SPG/46 held from 23 to 25 June 2010. After considering the NAT SPG Conclusions and relevant information presented by Australia, the meeting supported the continued development of ICAO global AMS(R)S Voice avionics standards and procedures. The meeting endorsed the Terms of Reference for the future work of the inter-regional Satellite Voice Communication (SATCOM) Task Force as approved by NAT SPG/46 and adopted the following Conclusion:

Conclusion 21/27 – Inter-regional ad hoc SATCOM Task Force

That,

a) the Terms of Reference of the inter-regional ad hoc Satellite Voice Communication (SATCOM) Task Force adopted by NAT System Planning Group as provided at **Appendix J** to the Report on Agenda Item 3.4 be endorsed; and

b) the outcome of the task force should be coordinated with the CNS/MET Sub-group of APANPIRG.

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

3.4.44   The meeting noted with cconcern following limitations raised by the States and industry with using SCV for ATS:

− 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 for long range communication;

− Many ANSPs do not have the supporting infrastructure nor ATC procedures to use SCV as an alternative to HF;

− Pilot and ATC procedures are not fully developed;

− SCV, unlike HF, would not be globally available;

− The lack of guidance on the separation standards for which SCV is intended to be used; and

− Using SCV would increase workload of air traffic controller.

3.4.45   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

3.4.46   USA informed the meeting about 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 the development of standards for CPDCL and ADS-C applications, it was stated that the FAA will promote the use of RTCA, EUROCAE, and ICAO documents to internationally standardize the operational and technical definition for next generation data communication services that meet the operational needs in the 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..

ADS/CPDLC operational trial in the Ujung Pandang FIR

3.4.47   Indonesia informed the CNS/MET SG meeting that taking into account the progress of CNS/ATM implementation in the Region, Indonesia has conducted the ADS/CPDLC operational trial on the oceanic ATS routes A461, B583, B584, B472, B473, B462, R340/R590 in the Ujung Pandang FIR for all aircraft equipped with FANS-1/A. Trials were conducted for 3 months starting from 3 July 2008. This ADS-C/CPDLC trial will finish in September 2010. The result of the trial conducted till then was considered optimistic which met the operational requirement. Indonesia has proposed transition from the trial to operational implementation.

DATA-LINK Performance Monitoring Results by New Zealand

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

3.4.49   The statistical data collected recently 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.

Regional HF Management Guidance Material

3.4.50   The HF management guidance material developed by the South Pacific HF Working Group covering SP6 area was reviewed by the CNS/MET SG/14 meeting. The guidance material integrated regulatory materials relating to South Pacific States, FASID, radio regulations and current NOTAM's etc. The purpose of the document is to provide a guidance methodology for the utilization of the Families of Frequencies employed by the Aeronautical Communication Stations in the South Pacific, to support a better management plan of the available families of frequencies and human resources, in order to increase the efficiency and capacity of the Communications Network. The document focuses on the propagation and technical characteristics of the HF network while detailing specific information on ground facilities within the south pacific SP6 region. In view of the foregoing, the meeting adopted the following Conclusion:

Conclusion 21/28 – Regional HF Management Guidance Material

That, the HF Management Guidance Material for the South Pacific as provided in **Appendix K** to the Report on Agenda Item 3.4 be adopted as Part One of Asia/Pacific Regional Guidance Material for HF Management.

3.4.51   The meeting also encouraged States in North Pacific Sub-region, Bay of Bengal and Indian Ocean sub-regions to coordinate with each other in developing 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.

APANPIRG/21 Conclusions/Decisions – Action Plan

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
D 21/18	**Regional ATN/AMHS Implementation Planner**	That, the Asia/Pacific Regional Implementation Planner Placed at Appendix B to the Report on Agenda Item 3.4 be adopted to report ATN/AMHS implementation progress in the region.	**Notify ATNICG WG and ATNICG**	**ICAO APAC Office**	**ATNICG WG and ATNICG informed**	**September 2010** **May 2011**	**Completed** **To be done**	
C 21/19	**AMHS connectivity with ICAO MID region**	That Singapore, Pakistan and India take initiative in transiting to AMHS connectivity with Bahrain, Kuwait, Iran and Oman respectively at the earliest.	**Remind States concerned to take initiative**	**ICAO APAC Office** **States concerned**	**States reminded and initiative by States taken**	**April 2011**	**Completed** AP-CNS0205 AP-CNS0206 24 Dec. 10	
C 21/20	**Strategy for Implementation of Aeronautical Telecommunication Network (ATN) in the Asia/Pacific Region**	That, the document provided at Appendix C to the Report on Agenda Item 3.4 be adopted as Strategy for Implementation of Aeronautical Telecommunication Network (ATN) in the Asia/Pacific Region.	**Notify States**	**ICAO APAC Office**	**State Letter** **Available on the website**	**November 2010**	**Completed** AP184/10 13 Dec. 10	Noted
C 21/21	**AMC Information Form**	That, States be invited to provide data for AMC in respect of their Administration in the format provided at Appendix D to the report on agenda item 3.4.	**Notify States**	**ICAO APAC Office**	**State Letter**	**November 2010**	**Completed** AP187/10 13Dec.10	

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/22	**Asia/Pacific ATN Interim Addressing Plan**	That, i) the proposed IPv6 and IPv4 addressing schemes be submitted to ICAO and ICAO be requested to consider a global IPv6 addressing scheme for ground-ground communication; ii) the proposed IPv4 address plan placed at Appendix E to this report on agenda item 3.4 be adopted to enable the Asia/Pacific ATN ground IPS network implementation to proceed using IPv4 in the interim with minimum delay; and iii) The Asia/Pacific region transition to IPv6 once the above issues have been resolved.		ICAO HQ/ ANB/CNS	A global IPv6 addressing scheme for ground-ground communication	**2012**		Noted and requested the Secretariat to develop SARPs for a global IPv6 addressing scheme for ground-ground communication. Noted Noted

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

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

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

* Note: ICAO has established the following Strategic Objectives for the period 2005-2010:

A: Safety - *Enhance global civil aviation safety*; **B: Security** - *Enhance global civil aviation security*; **C: Environmental Protection** - *Minimize the adverse effect of global civil aviation on the environment*; **D: Efficiency** - *Enhance the efficiency of aviation operations*; **E: Continuity** - *Maintain the continuity of aviation operations;* **F: Rule of Law** - *Strengthen law governing international civil aviation.*