



*International Civil Aviation Organization*

**THE EIGHTH MEETING OF AERONAUTICAL  
TELECOMMUNICATION NETWORK (ATN)  
IMPLEMENTATION CO-ORDINATION GROUP  
OF APANPIRG (ATNICG/8)**

Jakarta, Indonesia, 18 - 21 March 2013



Ministry Of Transportation  
Republic of Indonesia

---

**Agenda Item 2: Review outcome of APANPIRG/23 on ATN/AMHS implementation**

**OUTCOME OF APANPIRG/23 ON ATN/AMHS IMPLEMENTATION**

(Presented by Secretariat)

**SUMMARY**

This paper reviews the outcome of APANPIRG/23 on ATN/AMHS and works accomplished by the Seventh Meeting of ATN Implementation Co-ordination Group of APANPIRG and the Sixteenth CNS/MET Sub-group meeting.

**1. INTRODUCTION**

1.1 APANPIRG/23 meeting held in September 2012 in Bangkok reviewed the outcome of the Seventh Meeting of the Aeronautical Telecommunication Network (ATN) Implementation Coordination Group (ATNICG/7) and an AMHS/SWIM Workshop held from 5 to 9 March 2012 in Chiang Mai, Thailand including the work accomplished by the Tenth meeting of the ATNICG Working Group. The outcome of APANPIRG/23 on matters relating to ATN/AMHS implementation is provided at **Attachment** to this paper for review by this meeting.

1.2 The reports of Seventh Meeting of ATNICG and Tenth Meeting of the ATNICG working group were also reviewed by CNS/MET SG/16 meeting held in Bangkok, Thailand in July 2012.

**2. DISCUSSION**

2.1 APANPIRG/23 meeting noted the updates on the ATN/AMHS implementation status in the Region and some issues observed during implementation. APANPIRG/23 meeting also noted the views of ATNICG/7 on some issues highlighted below:

- i) that Aeronautical Communication Panel (ACP) was attaching more importance to the implementation of VoIP, whereas in Asia/Pacific Region AIDC was taking precedence over voice communication;

- ii) AFTN based AIDC be implemented using AMHS/AFTN gateway and between direct MTA/MTA switching in addition to over dedicated circuits and such comment should be reflected in the consolidated Pan-regional ICD for AIDC;
- iii) need to include telecommunication experts in the ad-hoc Task Force established to finalize Pan Regional ICD for AIDC;
- iv) ACP proposal to relegate ATN/OSI as Recommended Practices should not be supported in view of the fact that ATN/OSI is still being used in ASIA/PAC Region and also since it will be used for air-ground communication; and
- v) the services of a common network manager should be used to cut down the implementation time and to avoid complexities of security implementation.

2.2 APANPIRG/23 took following actions on recommendations from ATNICG/7 and CNS/MET SG/16 meetings:

- Conclusion 23/17 – adopted regional guidance material on Interface Control Document (ICD) for Internet Protocol (IP) Sub-Network Dependent Convergence Function (SND CF);
- Noted a proposal to adopt Basic ATSMHS plus File Transfer Body Parts (FTBP) option - an element contained in the Extended ATSMHS for XML over AMHS traffic;
- Adopted Conclusion 23/18 – More efficient functioning of Eurocontrol AMC for provision of more efficient function to enable States to identify recent changes from the previous AIRAC Cycle and develop means of automation for providing updated AMHS Address Information; the same was conveyed to Eurocontrol through ICAO Paris Office;
- Through Conclusion 23/19– adopted Sample Technical Memorandum of Cooperation (TMC) for ATN/AMHS Interconnection Trials;
- Through Conclusion 23/20 – established Inter-regional APAC/NAT AIDC Task Force and States are urged to share their AIDC implementation plan with the neighbouring States in order to implement AIDC in a timely manner; and
- Conclusion 23/31 – Regarding Information Management Network Service implementation planning, ICAO is requested to develop IMS Operational Concept and conduct cost-benefit analyses for implementation of the IPv6 network and IMS/SWIM at regional level.

2.3 For the aeronautical mobile service (AMS), States that implementing new/replacement SATCOM data-link systems are encouraged to consider to support AMSS and AMSSS data-link interoperability and also to include functions of SATVOICE for ATS services. FANS 1/A over Iridium (FOI) was also identified as one of the viable means for conducting ATS data-link communication in the APAC Region.

2.4 ICAO was also requested to organize a workshop on RCP and RSP in the APAC Region. APANPIRG/23 adopted the 1<sup>st</sup> Edition of the Satellite Voice (SATVOICE) Guidance Material (SVGGM).

2.5 APANPIRG/23 meeting appreciated the efforts and progress made by ATNICG and thanked Aeronautical Radio of Thailand for hosting ATNICG/7 meeting and the SWIM workshop.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to review the outcome of the APANPIRG/23 and take any necessary follow-up actions.

-----

**Agenda Item 3: Performance Framework for Regional air navigation planning and implementation****3.4 CNS/MET Matters**

3.4.1 The meeting reviewed the outcome of the Sixteenth Meeting of the Communications, Navigation and Surveillance /Meteorology Sub-group (CNS/MET SG/16) held at the ICAO Asia and Pacific Regional Office, Bangkok, Thailand from 23 to 27 July 2012 as presented in WP/22. The meeting noted with appreciation work done by the Sub-group. The meeting also discussed the CNS/MET related issues and took following actions on the report of the CNS/MET SG/16.

**Relevant Action Items of the 48<sup>th</sup> DGCA Conference**

3.4.2 The meeting noted that the Sub-group had reviewed the outcome of 48<sup>th</sup> DGCA Conference and identified 6 of the 8 Action Items of the Conference relating to the Work of the CNS/MET Sub-group. The meeting also noted that Items 48/1, 48/4, 48/5 and 48/6 had already been covered in the work programme of the CNS/MET Sub-group. The meeting encouraged States to follow up the recommendations of the 48<sup>th</sup> DGCA Conference and to provide CNS and MET related input to the 49<sup>th</sup> DGCA Conference.

**Review outcome of the ATM/AIS/SAR/SG/22, RASMAG/16 and APSAPG Meetings**

3.4.3 The meeting noted the key outcomes of the ATM/AIS/SAR/SG/22, APSAPG/1 and RASMAG/16 meetings related to the work programme of CNS/MET SG.

**SIP Workshop on Aviation System Blocks Upgrades**

3.4.4 The meeting noted that the SIP Workshop on 12<sup>th</sup> Air Navigation Conference and ASBUs was held in Bangkok from 14 to 18 May 2012. 12 Administrations of the ICAO Asia and Pacific Regions and two international organizations (CANSO & IATA) participated in the workshop. A similar workshop sponsored by Fiji was held in Nadi, Fiji from 21 to 25 May 2012. Five Pacific States and one international organization (IFALPA) participated in the workshop.

3.4.5 The objective of the workshops was to enhance the knowledge of civil aviation professionals in planning and implementation of air navigation systems on the basis of Aviation System Block Upgrades (ASBU) methodology and also to support States in their preparations for participation in the upcoming AN-Conf/12 in November 2012. The participating Administrations, through practice exercises gained a better understanding of ASBU methodology for planning and implementation of air navigation systems and the use of IFSET for estimating fuel efficiency and environmental benefits of the operational improvements. The meeting noted that some recommendations and/or suggestions on ASBU from participants of the workshops had been forwarded to ICAO Headquarters for consideration.

3.4.6 The CNS/MET SG/16 meeting reviewed the structure of Aviation Systems Block Upgrade (ASBU), including the concepts of Module, Thread, Block and Performance Improvement Area, the four elements of ASBU. The eighteen modules in Block 0 classified in four Performance Improvement Areas (PIAs) were described in terms of Module No., Module Title and the Module Brief Description. Considering that the similar task had already been taken up in Asia/Pacific Seamless ATM Planning Group (APSAPG), the meeting considered it unnecessary for duplicating the efforts. The meeting however agreed that first priority should be accorded to the mitigation of deficiencies that have already been identified. The meeting was reminded that all the Modules included in Block 0 may not be beneficial for the region in terms of cost and operational benefits so priority is to identify those modules, which are applicable for the region.

### **Aeronautical Fixed Service (AFS)**

#### AMHS/SWIM Workshop and the Seventh Meeting of ATNICG

3.4.7 The Seventh meeting of Aeronautical Telecommunication Network Implementation Coordination Group (ATNICG/7) and the ATS Message Handling System (AMHS)/System Wide Information Management (SWIM) Workshop, hosted by Aerothai was held in Chiang Mai, Thailand from 5 to 9 March, 2012.

3.4.8 The meeting noted that though System Wide Information Management (SWIM) had been included in Block 1 of ASBU, but it had a close relation with the module B0-30 in the timeframe from 2013 to 2017 and hence its implementation may start sooner than 2018 .

3.4.9 The meeting noted the views of ATNICG/7 on the following issues:

- i) that Aeronautical Communication Panel (ACP) was attaching more importance to the implementation of VoIP, whereas in Asia/Pacific Region AIDC was taking precedence over voice communication;
- ii) AFTN based AIDC be implemented using AMHS/AFTN gateway and between direct MTA/MTA switching in addition to over dedicated circuits and such comment should be reflected in the consolidated Pan-regional ICD for AIDC;
- iii) need to include telecommunication experts in the ad-hoc Task Force established to finalize Pan Regional ICD for AIDC;
- iv) ACP proposal to relegate ATN/OSI as Recommended Practices should not be supported in view of the fact that ATN/OSI is still being used in ASIA/PAC Region and also since it will be used for air-ground communication; and
- v) the services of a common network manager should be used to cut down the implementation time and to avoid complexities of security implementation.

#### Use of Wild Card character

3.4.10 ATNICG recommended States to consider AMC proposal to use wild card character and incorporate appropriate changes as deemed fit. It was recommended that ICAO should notify States through a State Letter regarding such change. States were requested to update information in respect of their administrations using the prescribed forms.

#### Common network for the region

3.4.11 The meeting agreed with ATNICG proposal to develop a strategy to address the issue whether the regional priority should be to have a common regional network or should the priority be assigned to developing solutions around discrete networks that already exist in the region.

Asia/Pacific IP Sub-Network Dependent Convergence Function (SNDCF) ICD

3.4.12 The meeting noted that IP Sub-Network Dependent Convergence Function (SNDCF) specified in ICAO Doc 9880 is meant for a completely meshed network and as of now the implementation in the region is on point-to-point basis. For the point-to-point connectivity, some of the parameters like Quality of Service etc. specified in Doc 9880 may not be required. In view of the foregoing, the meeting adopted the following Conclusion formulated by the ATNICG on Asia/Pacific IP SNDCF ICD:

**Conclusion 23/17 – Asia/Pacific IP SNDCF ICD**

That, the Asia/Pacific Internet Protocol (IP) Sub-Network Dependent Convergence Function (SNDCF) Interface Control Document (ICD) provided in **Appendix A** to the Report on agenda item 3.4 be adopted as regional guidance material.

XML over AMHS

3.4.13 The meeting was informed about the option of conveying XML-based data over AMHS making use of the File Transfer Body Parts (FTBP) an element contained in the Extended ATSMHS as presented to the ATNICG/7. There was a proposal to adopt Basic ATSMHS plus FTBP option of Extended AMHS for the region. The meeting agreed with the requirement of reaching an inter-regional agreement on this issue.

Efficient functioning of AMC

3.4.14 The meeting noted a requirement identified by ATNICG for the AMC to make a provision through which States can easily identify recent changes and effectively access updated information. It was explained that in the absence of a provision of identifying recent changes only, the Comm. Centers have to review the whole information which becomes a significant task. Accordingly, the meeting agreed to the following Conclusion:

**Conclusion 23/18 – More Efficient Functioning of AMC**

That, ICAO be requested to invite EUROCONTROL AMC to consider the provision of more efficient function to enable States to identify recent changes from the previous AIRAC Cycle and to develop means of automation for providing updated AMHS Address Information.

Sample Memorandum of Cooperation (TMC)

3.4.15 A sample Technical Memorandum of Cooperation (TMC) for ATN/AMHS trials was developed by ATNICG for facilitating States in reaching an agreement about conducting trials required to evaluate the basic connectivity, interoperability, functionality and integrity of the ATN G/G Router. The meeting adopted the following Conclusion formulated by the ATNICG:

**Conclusion 23/19– Sample TMC for ATN/AMHS Interconnection Trials**

That, the sample Technical Memorandum of Cooperation (TMC) for ATN/AMHS interconnection trial between States, provided in **Appendix B** to the Report on agenda item 3.4 be adopted as regional guidance material for reference by States.

### Establishment of an inter-regional APAC/NAT AIDC ICD Task Force

3.4.16 The CNS/MET SG/16 meeting discussed a proposal from NAT SPG/48 meeting (12-15 June 2012) for the establishment of an inter-regional APAC/NAT AIDC ICD Task Force and agreed with it. The meeting was informed that the APAC/NAT ICD for AIDC is being developed through harmonizing ICD documents and updates based on the latest versions 1.2.9 and 1.3.0 of the North Atlantic Common Coordination Interface Control Document (NAT CC ICD, NAT Doc 002) and APAC ICD for AIDC Version 3.

3.4.17 India informed that AIDC implementation within its administration between different makes of ATS Automation Systems has been successfully achieved and India is fully ready for implementation of AIDC with the neighboring States. The meeting emphasized the need of sharing of State AIDC implementation plans with the neighboring States.

3.4.18 In light of the foregoing, the meeting endorsed the TOR adopted by NAT SPG and adopted the following Conclusion:

#### **Conclusion 23/20 – Inter-regional APAC/NAT AIDC Task Force**

That,

- a) the Terms of Reference of the inter-regional APAC/NAT AIDC Task Force provided by NAT System Planning Group at **Appendix C** to the Report on agenda item 3.4 be endorsed;
- b) States in Asia/Pacific Regions with experience of AIDC implementation be encouraged to participate in the Task Force to contribute for finalization of inter-regional ICD for AIDC;
- c) the outcome of the task force should be coordinated with APANPIRG through the CNS Sub-group; and
- d) States be urged to share their AIDC implementation plan with the neighbouring States in order to implement AIDC in a timely manner.

### Information Management Service (IMS) Network Planning

3.4.19 It was informed that the Technology Roadmap 2, to be presented at the upcoming Air Navigation Conference indicates merger of Air Traffic Service Inter-Facility Data Communication (AIDC) and Air Traffic Service Message Handling System (AMHS) into Information Management Service (IMS) beginning in approximately 2020. A preliminary analysis of the planned Information Management Service (IMS) environment using IPv6 network was briefly introduced. It was suggested to develop an IMS Operational Concept as a guideline for States to plan accordingly.

3.4.20 It is critical that an Operational Concept be developed which clearly defines the function of the network and its SWIM component. The concept of IMS is not yet well defined and understood by the user community. It is strongly recommended that ICAO Headquarters develop a clear IMS/SWIM Operational Concept at global level that identifies the impact to message generating systems before 2015 for the States to begin IMS/SWIM environment implementation in 2020. Furthermore, a cost/benefit analysis is a critical document for States to plan and justify their budget allocation. While recommending ATNICG to review requirement of IPv6 network implementation, the meeting adopted following Conclusion:

**Conclusion 23/21 – IMS Operational Concept**

That, ICAO be invited to

- a) develop IMS Operational Concept and expedite finalization of IPv6 network configuration; and
- b) conduct cost-benefit analyses for the implementation of an IPv6 network and IMS/SWIM at regional level.

**ATN/AMHS Implementation status in India and SWIM over AMHS (WP/21)**

3.4.21 India presented a paper on ATN/AMHS implementation status in India and harmonious implementation of SWIM over AMHS, in view of ASBU concept being introduced by ICAO. The implementation status of ATN/AMHS circuits in respect of Mumbai-Beijing, Mumbai-Bangkok, Mumbai –Karachi, Mumbai-Muscat and with other BIS states were highlighted. Most of the States have experienced implementation problems due to incompatibility between systems provided by different vendors. Most of these issues however have been resolved through bilateral coordination. India also briefed about its plans to expand the AMHS service at other major airports i.e. Delhi, Kolkata and Chennai. It was stressed that a pragmatic approach in planning by States under the guidance ICAO may be undertaken so as to provide robust infrastructure for provision of SWIM over ATN/AMHS. India proposed an APANPIRG conclusion urging states hosting BBIS and BIS nodes to prioritize resolution of bilateral technical and operational issues and establish AMHS network on urgent basis.

3.4.22 The meeting appreciated progress made by India, however, it was decided to refer such implementation issues to ATNICG for addressing the concerns of India so as to establish regional ATN/AMHS network on urgent basis.

**AFS improvement in Bangladesh and Pakistan**

3.4.23 Bangladesh informed the meeting that up-gradation of AFTN/AMSS had been completed to receive and transmit New Format of Flight Plan. Necessary testing had been going on with Kolkata, India since 05 September 2012. Bangladesh also had a plan to test with Bangkok on 14 September 2012 and onwards. Their systems will be compliant with New Flight Plan requirement by 15 November 2012. The ATN/AMHS system will be ready for operation in early March 2013.

3.4.24 Pakistan informed the meeting that ATS MHS between Karachi and Mumbai had been operational. Successful Trial for sending and receiving New Format of Flight Plan was conducted over the AMHS link with Mumbai. Connection to the AMHS system in Karachi with terminals in domestic airports had also been established. New Format of Flight Plan testing using ATN/AMHS with Muscat was also carried out. Pakistan will be ready for implementation of the Flight Plan Amendment by 15 November 2012.

-----