International Civil Aviation Organization

THE FIFTH MEETING OF AERONAUTICAL TELECOMMUNICATION NETWORK (ATN) IMPLEMENTATION CO-ORDINATION GROUP OF APANPIRG (ATNICG/5)

Kuala Lumpur, Malaysia, 31 May – 4 June 2010

Agenda Item 2: **Review outcome of CNS/MET SG/13 Meeting**
Review outcome of APANPIRG/20 Meeting

REVIEW OF APANPIRG/20 AND CNS/MET SG/13 OUTCOMES ON AFS RELATED ISSUES

(Presented by the Secretariat)

SUMMARY

This paper presents outcome of APANPIRG/20 meetings on AFS and AMS related issues. This paper also presents a brief report on the deliberations that took place in APANPIRG CNS/MET SG/13 meeting.

1. Introduction

1.1 Fourth meeting of Aeronautical Telecommunication Network Implementation Co-ordination Group, held from 4 to 8 May 2009 in Singapore formulated three Draft Decisions and seven Draft Conclusions for the consideration of APANPIRG CNS/MET SG and APANPIRG meetings. All these Conclusions and Decision were presented to both the meetings for their consideration.

1.2 Thirteenth Meeting of APANPIRG CNS/MET SG was held from 20 to 24 July 2009 in Bangkok. The meeting was attended by 99 experts from 22 States and 3 International Organizations (WMO, IATA and IFALPA). ATN implementation related recommendations developed by ATNICG/4 meeting were reviewed by the meeting and were recommended for adoption by APANPIRG/20 with or without modification. Full meeting report is placed at the ICAO APAC website and can be accessed on the link: http://www.icao.or.th/meetings/2009/cnsmet_sg13/cnsmet_sg13rpt.pdf.

1.3 Asia Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) met for its Twentieth meeting in Bangkok from 7 to 11 September, 2009. The meeting attended by 111 participants from 25 Member States and 6 International Organizations reviewed the outcome of CNS/MET SG/13 meeting and considered one draft Decision and four draft Conclusions recommended by CNS/MET Sub Group for adoption. Abstract of the report relevant for the implementation of AFS and AMS is placed at **Attachment** to this paper. Full APANPIRG/20 report is placed at ICAO APAC website and can be accessed at the address http://www.icao.or.th/apanpirg/apanpirg20/agenda3_4.pdf using the prescribed procedure.

2. Discussion

2.1 The CNS/MET SG/13 and APANPIRG/20 reviewed the outcome of ATNICG/4 meeting and considered the draft Conclusions and draft Decisions formulated by the Coordination Group meeting. The CNS/MET SG/13 endorsed all the action items that were recommended by ATNICG/4 except for one.

2.2 Based on the recommendation of the CNS/MET Sub Group, APANPIRG/20 noted with appreciation the work carried out by ATNICG/4 and adopted the draft Conclusions on ATN issues as shown in the Attachment to this paper. Chairman, APANPIRG specifically appreciated the timely updating of implementation documents.

2.3 The APANPIRG/20, reviewed the updated/original guidance documents on IDRP Policy, AMHS/ATN Network Management Operational Procedures, AMHS Manual and Aeronautical Telecommunication Network Security Checklist recommended by CNS/MET SG/13 and decided to adopt these amended/original documents developed to provide implementation guidance to the States in the region.

2.4 The meeting took note of the procedure prescribed by ICAO through State Letter dated 14 April, 2009 for the purpose of AMHS address coordination through EU AMC on short term basis. Meeting also noted that for address management, ATNICG/4 was of the view that for Asia/Pacific region all the data going into the AMC database should be submitted through Thailand. CNS/MET SG, while reviewing ATNICG/4 recommendation on the issue of address management, was of the view that Aeronautical Radio of Thailand (AEROTHAI) had been identified as the agency for coordination with EUROCONTRL regarding issues related to implementation of ATN and hence decided to replace the word Thailand with Aerothai in the draft Conclusion recommended for approval by APANPIRG. Based on the proposal developed by ATNICG/4 and amended and recommended by CNS/MET SG/13, APANPIRG adopted the Conclusion urging the States to register their AMHS addresses through Aerothai, with a copy of the information endorsed to ICAO Asia/Pacific Office.

2.5 Meeting also adopted a Conclusion urging the States to update information in respect of their administration in the regional AMHS Naming Register by 2010 and also urged the BBIS States to process both the XF and CAAS addressing schemes. Amended FASID Tables CNS – 1B for ATN Router Plan, CNS-1C for AMHS Routing Plan and CNS-1E for AIDC Routing Plan were also adopted by APANPIRG.

2.6 Report on the coordination meeting to address communication issues between China PR, Democratic Republic of Korea and Republic of Korea was presented to the meeting.

2.7 While reviewing the evolutions that are taking place in the AFS telecommunication infrastructure, APAPIRG noted that emerging technologies were being adopted and implemented by various regions. Issues related to harmonized and coordinated implementation were causing concern amongst the States. It was suggested that **ATNICG should develop a Working Paper** on regional coordinated approach. It also recognized that implementation of security measures and operational compatibility in the structures adopted by different regions were some of the difficulties anticipated.

2.8 Meeting placed on record its appreciation for Civil Aviation Authority of Singapore for hosting the Fourth Meeting of ATNICG and also appreciated the progress made by the Group in the implementation of ATN/AMHS.

2.9 The meeting also reviewed the progress made in the completion of Tasks assigned to ATNICG and after considering the proposal for the amendment of ATNICG Subject/Tasks list as recommended by CNS/MET SG/13, decided to adopt it.

2.10 The APANPIRG/20 meeting reviewed the progress made by the States and the Secretariat on the Outstanding Conclusions and Decisions up to its Eighteenth meeting. The meeting noted with satisfaction that action pending on Conclusion 15/15 had since been completed.

3. Action by the Meeting

3.1 The meeting is expected to:

a) review the outcome of APANPIRG/20 meeting on the AFS related issue;

b) develop a Working Paper as required in paragraph 2.7 for presentation to CNS/MET SG/14 and APANPIRG/21; and

c) discuss follow-up actions to the relevant Conclusion/Decision adopted by APANPPIRG/20.

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Aeronautical Fixed Service

Review Report of the Fourth Meeting of the ATN Implementation Coordination Group (ATNICG/4)

3.4.1 The meeting noted with appreciation the tasks accomplished by the ATNICG/4 Meeting which was hosted by Civil Aviation Authority of Singapore from 4 to 8 May 2009.

3.4.2 The meeting noted that no amendment to the Terms of Reference of ATNICG was identified. The meeting decided to endorse the updated Subject/Tasks List for ATNICG and adopted the following decision:

Decision 20/26 - Revision of Subject/Tasks List of ATNICG

That, the revised Subject/Tasks List of ATNICG provided in **Appendix A** to the Report on Agenda Item 3.4 be adopted.

IDRP Routing Policy

3.4.3 The meeting agreed that Version 2.0, the current version of the Asia/Pacific IDRP Routing Policy does not provide for an optimal routing of CLNP PDUs for some sites like Salt Lake City, USA and Moscow, Russian Federation, etc. which have multiple connections into Asia/Pacific Region. In addition, it was identified that in case of a backbone link failure, a non-backbone alternative path might be selected by the IDRP. To overcome these problems, the meeting recommended adoption of the revised version, Version 3.1 of the Asia/Pacific IDRP Routing Policy developed by ATNICG/4.

AMHS/ATN Network Management Operational Procedure Guidelines

3.4.4 To satisfy the requirements of APANPIRG Conclusion 15/15, AMHS/ATN Network Management Operational Procedure Guidelines was developed and presented to the meeting. It was noted that the document covered areas deemed necessary for efficient and effective operation of regional and global AMHS. It was clarified that the document does not include any information about performance requirements or specifications; it covers only the operational procedure issues.

AMHS Conformance Testing Document (AMHS Manual)

3.4.5 The meeting was informed that with the release of EUR AMHS Manual Version 3.0 in April 2008, it had become necessary to revise Asia/Pacific guidance document on AMHS Conformance Testing (AMHS Manual) accordingly. The revised Manual was reviewed by the CNS/MET SG/13 meeting and was recommended for adoption by APANPIRG.

Security Requirements

3.4.6 Aeronautical Telecommunication Network Security Checklist, intended to support Asia/Pacific ATN Security Policy was presented to the meeting for its consideration. The meeting was informed that the Checklist may be used by the administrations and organizations to

verify if their implemented system includes appropriate security measures. The ATNICG/4 recommended that the system may be put into operation after the Designated Approval Authority has ensured that the recommended Checklist is completed.

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

Conclusion 20/27 - ATN/AMHS Guidance Material

That, the following guidance materials for ATN/AMHS Implementation be adopted and published.

- Version 3.1 of the Asia/Pacific IDRP Routing Policy provided in **Appendix B** to the Report on Agenda Item 3.4**;**
- AMHS/ATN Network Management Operational Procedure Guidelines provided in **Appendix C**;
- Amended AMHS Conformance Testing (AMHS Manual provided in **Appendix D;** and
- Aeronautical Telecommunication Network Security Checklist provided in **Appendix E.**

Short term procedure for Global AMHS address coordination

3.4.8 The meeting was reminded about the procedure prescribed by ICAO through State Letter dated 14 April 2009 for the purpose of AMHS address coordination through EU AMC. The State Letter mentioned that the AMC implemented by EUROCONTROL under the aegis of the ICAO EUR Office (Paris) for all operational purposes and the ICAO AMHS MD Register loaded with AMC data to ensure consistency will only be used as the systems for the short-term address management.

3.4.9 It was also advised in the State Letter that the States should register their nominated users and these users need to be trained before they are actually allowed to enter data into AMC. On the issue of address management, ATNICG/4 was of the view that for the Asia/Pacific Region all the data going into the AMC database should be submitted through Aeronautical Radio of Thailand (the agency designated in Asia/Pacific Region for coordinating with EUROCONTROL AMC on matters related to AMHS). It was agreed that the procedure for submission of AMC data through Aerothai will be notified to States by ICAO Asia/Pacific Office through a State Letter.

3.4.10 The ATNICG/4 had proposed that a copy of the information submitted by the States to the AMC database should also be provided to ICAO Asia/Pacific Office. The meeting reviewed the recommendation made by ATNICG and adopted following Conclusion:

Conclusion 20/28 - Short-term procedure for Global AMHS address Coordination

That, ICAO request States to register their AMHS addresses with EUROCONTROL AMC through Aeronautical Radio of Thailand (Aerothai) and provide a copy of this information to ICAO Asia/Pacific Office.

AMHS Addressing Scheme

3.4.11 The meeting noted details of the AMHS address management domain in terms of Country (C), Administrative Domain (ADMD or A) and the Private Domain (PRMD or P) attributes. The two types of address schemes XF and CAAS were also explained in terms of these attributes. It was informed that a Regional AMHS Naming Register had been created to record the addressing schemes adopted by different States. The meeting urged the States to update information in respect of their administration in the Naming Register. The meeting also agreed that BBIS hubs should be equipped to process messages both with the XF and CAAS addressing schemes to ensure interoperability and adopted the following Conclusion:

Conclusion 20/29 - AMHS Addressing Scheme

That,

a) States be urged to update information in respect of their administrations in the regional AMHS Naming Register; and

b) States hosting BBIS hubs be requested to process both the XF and CAAS addressing schemes.

FASID Tables CNS-1B, CNS-1C and CNS-1E

3.4.12 The meeting reviewed FASID Tables CNS-1B for ATN Router Plan, CNS-1C for AMHS Routing Plan and CNS-1E for the AIDC Routing Plan updated by ATNICG/4 and Communication Co-ordination Meeting held in Shenyang, China from 3 to 5 June 2009. After reviewing the Tables, the meeting formulated following Conclusion:

Conclusion 20/30 - Revision of FASID Tables CNS-1B, CNS-1C and CNS-1E

That, FASID Tables CNS-1B, 1C and 1E for ATN Router Plan, AMHS Routing Plan and AIDC Routing Plan be replaced with the revised CNS Tables provided in **Appendices F, G** and **H** respectively to the Report on Agenda Item 3.4.

Performance Based Approach

3.4.13 The meeting appreciated the progress made in the implementation of ATN in the region and appreciated the contribution made by the ATNICG. The meeting also placed on record its appreciation for Civil Aviation Authority of Singapore for hosting the ATNICG meeting in Singapore Aviation Academy.

COM Coordination Meeting

3.4.14 The meeting was informed that a Communication Co-ordination Meeting, hosted by ATMB, China was held in Shenyang from 3 to 5 June 2009. The meeting discussed issues related to the AFS network and adopted five action items to improve the performance of the AFTN/ATS Direct Speech Circuits and AIDC between China, Democratic People's Republic of Korea and the Republic of Korea. Status of implementation of specific AFS circuits and difficulties faced in the implementation were also reviewed.

Telecommunications Evolution

3.4.15 The United States informed the meeting about the evolutions that are taking place in the AFS telecommunication infrastructure. It was informed that AFTN is gradually being replaced with AMHS, a system designed to distribute the flight plans globally, distribute meteorological data and support systems like Ocean Tracking System (OTS), ATS Inter-facility Data Communications (AIDC), Search and International Rescue, etc. It was highlighted that the emerging technologies are being adopted and implemented by various regions. Issues related to need for harmonized and coordinated implementation were raised and it was suggested that ATNICG should develop a Working Paper on regional coordinated approach. It was recognized that implementation of security measures and operational compatibility in the structure adopted by different regions was found to be complex.

Aeronautical Mobile Service (AMS)

Use of SATCOM Voice for ATS Communication (SCV)

3.4.16 The meeting noted discussions regarding use of SCV for ATS Communication by the CNS/MET SG/13. A paper from Australia highlighted the reason why SCV was not recommended by APANPIRG for routine ATS communication which includes lack of message delivery standards (in both directions), lack of ATC infrastructure to support the operation and cost, reliability and security concerns, etc. It was proposed to develop standards to allow use of SCV for ATS purpose at global level. While discussing the proposal, the meeting reviewed the background information presented by the Secretariat on the position of APANPIRG regarding the use of SCV for emergency and non-routine ATS communication in addition to its AOC and public communication. The meeting also recalled relevant discussions at the twenty third meeting of the Informal south Pacific Air Traffic Service Coordinating Group (ISPACG/23) held from 26 to 27 March 2009 and also outcome of discussions on the use of SCV at the forty-fifth meeting of North Atlantic Systems Planning Group (NAT SPG) held from 23 to 26 June 2009. The meeting noted NAT SPG Conclusion 45/28 on amendment to the NAT Regional Supplementary Procedures (SUPPs) regarding the use of SATCOM voice for Air Traffic Service (ATS) Communication. The amendment proposal made provision to allow aircraft with installed avionics capable of SCV approved by the State of Operator or the State of Registry to use such equipment for ATS communications as an additional means to HF voice communications.

3.4.17 While some participants supported the proposal made by Australia, views were expressed that currently HF in some States does not have problem of congestion and hence there is no need to have secondary voice for HF. It was also indicated that use of SCV for ATS purposes would increase the workload of the controllers.

3.4.18 The meeting was also informed that technical SARPs for the use of AMSS including SCV have already been included in the relevant provisions. No further technical standard in terms of signal in air would be required to be developed for use of SCV for ATS purposes. It was noted that the development of guidance material and/or implementation guidelines to further progress the use of satellite voice communications is in the work programme of OPLINK Panel.

3.4.19 The meeting noted the information on the use of SCV systems in lieu of a second HF as provided by New Zealand. The weight of HF systems, the requirement for structural modifications of the aircraft etc. made the usage of SCV beneficial. It was clarified that the SCV

system in use is the same as the commercially available one and is used in lieu of the second HF. It was further informed that:

Call setup can be variable but is usually a three stage process:

1) dial access number (Inmarsat or Iridium);
2) input PIN; and
3) input aircraft call number (usually done by software for security reasons) from ground to air calls, it can be anywhere between 20-50 seconds before the aircraft answers.

Satellite Data-link Operational Continuity Meeting (SOCM/1)

3.4.20 The meeting reviewed with appreciation the outcome of the first Satellite Data-link Operational Continuity Meeting (SOCM) held in Bangkok from 26 to 28 August 2009 in response to the requirements of APANPIRG Conclusion 19/24. The meeting attended by 56 participants representing stakeholders from different fields, reviewed the status of Satellite Data-link performance and provision. The meeting noted the issues identified and action items developed by the SOCM/1 meeting. The meeting also noted Satellite Communication Voice (SCV) related information and development. After reviewing the information on the Global Operational Data-link Document (GLOD), the meeting adopted following Conclusion urging the States and Aircraft Operators to provide information required for inclusion in the Appendices E and F of the Document.

Conclusion 20/31 - State and Operator aircraft information for GOLD

That,

a) States be urged to provide Region & State Information for inclusion in the GOLD Appendix E, by sending the completed forms(s) provided in **Annex 1** to this Report for their flight information regions (FIRs) or control areas (CTAs) by 30 October 2009; and

b) IATA be urged to coordinate with member airlines for providing operator & aircraft information for the GOLD Appendix F by sending completed form(s) as provided in **Annex 2** to this report for each variance, clarification, or addition to applicable aircraft type by 30 October 2009.

3.4.21 To facilitate the input of data by States and users into Appendices E and F, the Airways Corporation of New Zealand has prepared an online capability for data lodgment. The GOLD page access menu should be accessed via the ISPACG CRA website at http://www.ispacg-cra.com, then follow the software prompts as appropriate.

3.4.22 The meeting noted various developments and information contained in the report of the SOCM/1 that had been carried out by stakeholders of the satellite communication service. The meeting was informed about the additional options that are available now. Reviewing the developments that have taken place in the recent past, the meeting was of the view that FSIT should
re-convene a meeting as soon as possible, ideally in October/November 2009 and should consider additional alternative solutions to deal with the problems faced, taking into account technical and

business realities. The meeting also agreed that the Second meeting of SOCM should be organized in 2010 after FANS SIT reviews the status and provides updates on consolidated improvement plans. In view of foregoing, the meeting adopted the following Conclusion:

Conclusion 20/32 – Second Satellite Data-link Operational Continuity Meeting

That, ICAO be invited to organize 2nd Satellite Data-link Operational Continuity Meeting in 2010 for stakeholders to review the developments on the performance and provision of satellite data link communication in the Asia/Pacific Region and develop a solution.

3.4.23 Appreciating the necessity of Satellite Data-link Service meeting the specified requirements for the provision of PBN, the meeting concluded that the States shall ensure availability of required level of service for the provision of ADS-C and CPDLC before they plan horizontal separation based on RNAV 10 and RNP 4. Accordingly, meeting adopted following Conclusion:

Conclusion 20/33 – Coordinate Implementation of Reduced Horizontal Separations with CSPs

That, recognizing the technical limitations in satellite data link communications capability for the provision of ADS-C and CPDLC, States intending to implement reduced horizontal separations based on RNAV 10 and RNP 4 PBN specifications in oceanic and remote area commence early coordination with Communication Service Providers (CSPs) in order to ascertain adequate data link communication/surveillance capability to support the proposed implementation. Outcomes should be recorded in a formal Service Level Agreement (SLA) between implementing States and CSPs, jointly or severally, to ensure that capabilities are available to properly support RCP 240/D specifications contained in Appendices B and C to the GOLD on an ongoing basis.

3.4.24 Recognizing that RCP 240/D specification is an enabler for the implementation of PBN based 50 NM longitude and 30/30 NM separation, the meeting recommended that the limitation in providing satellite data-link communications capability be further addressed by ICAO at a global level and hence adopted following Conclusion formulated by the SOCM/1 meeting.

Conclusion 20/34 - Technical Limitations in Satellite Data Link Communications Capability

That, recognizing current technical limitations in satellite data communications capability that impacts PBN based separation applications particularly for RNAV10 and RNP 4 in the remote and oceanic areas, ICAO be invited to address this issue at global level.

Updated on MTSAT

3.4.25 Japan provided information on the Status of MTSAT and its high performance. The challenging issues identified by SOCM meeting held at end of August 2009 were highlighted and States and International Organizations were encouraged to consider using it as a redundant data-link as a near term solution.

ATS Datalink Network Plan in India

3.4.26 India provided information on their plans to implement ATS Datalink Network through ACARS to facilitate delivery of Departure Clearance, ATIS and VOLMET messages. It was informed that system for delivering D-ATIS and D-VOLMET messages through a central server installed in Mumbai and Departure Clearance systems installed in Delhi, Mumbai, Kolkata, Chennai, Bangalore and Hyderabad will be implemented by June 2010. Conceptual structure of the system was also explained.

Development of ICAO web-based aeronautical frequency management

3.4.27 The meeting noted progress in the development of a computer based programme for aeronautical VHF (air/ground) frequency assignment planning and management by the Secretariat. This programme, which would be made available to States through the ICAO web, is based on a global frequency list that comprises of the current separately managed and developed Regional frequency lists (Frequency List No.3). As a result, it was felt necessary to harmonize Regional differences between these frequency lists. Several observations were made by the Sub-group which are reflected in the report of meeting of the CNS/MET SG/13 for further consideration by the Secretariat.

Frequency assignment planning criteria

3.4.28 The meeting noted a proposal for introducing a matrix defining separation distances between different services. The meeting agreed that it would be preferred if this proposal could be reviewed on a global basis by an appropriate ICAO body, such as the Aeronautical Communications Panel. After review and approval of the planning criteria on a global level, these frequency assignment planning criteria would be considered for adoption by APANPIRG for use in the Asia/Pacific Region. It was noted that similar steps are expected to be taken in other ICAO Regions.

Frequency assignment planning criteria for VDL

3.4.29 The meeting reviewed frequency planning criteria for VDL (VDL Modes 2 and 4) that were approved by the Aeronautical Communications Panel. The meeting agreed to these planning criteria and requested the Secretariat to incorporate them into the planning criteria currently applicable to frequency list 3. These planning criteria are provided in **Appendix I** to the Report on Agenda item 3.4.

Demonstration of the VHF air ground communication frequency planning tool

3.4.30 The meeting received a detailed presentation and demonstration on the functions of the programme for VHF air-ground communications frequency planning in the frequency band 117.975 – 137 MHz.

3.4.31 The meeting was informed that a similar programme for NAV (ILS, VOR, DME, GBAS and NDB) systems is being developed. Considerations are given to include the possibility to assess potential interference from FM broadcasting stations, operating in the band below 108 MHz.

3.4.32 The meeting was of the opinion that the information on the programme and the database should not be made available on an open web-site (i.e. it should be password protected). Specific attention should be given by the secretariat to secure the integrity of the data base and to protect it from interference in particular from malicious users.

3.4.33 The meeting recorded its appreciation for the work performed on this project (as well as the project on SSR Mode S II code assignment planning) by the Secretariat and the close and productive cooperation between CNS/AIRS section ICAO headquarters and ICAO Asia/Pacific Office which assisted in improving efficiency in the coordination of frequency assignments while maintaining the central coordinating role.

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