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 3: **Review the ICAO Doc 9880 and Doc 9896 and on-going development activities including the report of the ACP WG-M**

REPORT ON AERONAUTICAL COMMUNICATION PANEL (ACP) AND ITS WORKING GROUP ACTIVITIES

(Presented by the Secretariat)

SUMMARY

Third Meeting of ACP Working Group of the whole reviewed the progress made by various working groups of Aeronautical Communication Panel. This paper discusses the information provided to ACP WG-W meeting on issues related to implementation of ATN.

1. Introduction

1.1 Third Meeting of Aeronautical Communication Panel (ACP) Working Group of the Whole (WG-W) was held in Montreal from 18 to 22 January 2010. Mr. Mervyn Fernando, President of ICAO Air Navigation Commission while opening the meeting mentioned about delivery of standards for ATN using the Internet Protocol Suite as one the recent achievements of the ACP. It was also informed that Panel meetings and WG/WHL meetings shall usually be held in Montreal. WG/WHL meetings may be held outside Montreal subject to approval by the Commission and in consultation with the Director of Air Navigation Bureau.

1.2 Presenting the report on Progress of work within WG-I (IPS), for air-ground and ground-ground applications, it was informed that the WG –I is proposing to combine the activities of sub-working group N1 (Internet Services) and N4 (Security Services). It was informed that WG-I had held five meetings in the past two years as per the following details.

ACP-WG-I # 7	Montreal, Canada	June, 2-6 2008
ACP-WG-I # 8	Montreal, Canada	August 25-29, 2008
ACP-WG-I # 9	Montreal, Canada	October 20-23, 2008
ACP-WG-I # 10	Montreal, Canada	April 27 – May 1, 2009
ACP-WG-I # 11	Montreal, Canada	November 18-20, 2009

It was also informed that WG-I was on schedule to deliver the complete Doc 9896 Edition 2 by May 2010.

1.3 The meeting was informed about the status of activities in WG-I:

a) Annex 10, Volume III, Part I (June 2008)
ACP approved the IPS SARPs developed by ACP WG-I in December 2007 and the Council approved them as Amendment to the SARPs in Annex 10, Volume III in March 2008. The application/implementation date was November 2008.

b) Manual for ATN using IPS standards and protocols Doc 9896 Edition 1 was published in November 2008. Doc 9896 is divided into three parts: 1) Technical Manual, 2) IPS Applications and 3) Guidance Material.

c) Autonomous System Numbering Plan and IPv6 Addressing Plan were completed in November 2008. The Autonomous System Numbering Plan and the IPv6 Address Plan for ground-ground communication are provided in the appendix to Doc 9896. As a follow up activity, WG-I is currently in discussion with IANA on Autonomous System Numbers and IPv6 address allocation for Air Ground support

d) VoIP requirements referenced n Doc 9896 Edition 2 (Draft released in August 2009). ANC directed WG-I to reference external mature standards for VoIP requirements, rather than developing standards at ICAO. WG-I has been coordinating with EUROCAE-67 to determine if VoIP standards being developed can be referenced by ICAO. EUROCAE – 67 has completed documenting requirements for VoIP for aeronautical communications. WG-I has referenced the documents from EUROCAE-67 in Doc 9896 Edition 2. The plan is to release Doc 9896 Edition 2 in May 2010.

In conclusion it was informed that WG-I is in the process of finalizing Doc 9896 Edition 2. One meeting is planned in May 2010 to complete the work. By May 2010, WG-I will deliver the final Manual for ATN using IPS standards and protocols (Doc 9896) Edition 2.

2. Working Group M (Maintenance) Summary of Activities

2.1 ACP Working Group M has been tasked with the Maintenance of SARPs and Guidance Material for the communication systems. Terms of Reference (TOR) for WG-M include maintenance of provisions of all ground-ground and air-ground communication systems in Annex 10 (Volumes II and III), finalize frequency assignment planning criteria for VDL modes 3 and 4,

complete part III of the manual on AMS(R), address RF compatibility issues between INMARSAT, MTSAT and Iridium satellite systems, assist in completing the publication of Doc 9880 and revision of the Comprehensive Aeronautical Telecommunication Network (ATN) Manual (Doc 9739) and consider progress of work on Orthogonal Frequency Division Multiplexing (OFDM) system for interactive digital voice transmission in HF band.

Four meetings of the group were held since last two years as per the following details:

ACP WGM 12	Montreal, Canada	16 – 20 June 2008
ACP WGM 13	Montreal, Canada	18 – 21 Nov 2008
ACP WGM 14	Brussels, Belgium	2 – 5 June 2009
ACP WGM 15	Montreal, Canada	16 – 18 November 2009

Issues discussed related to implementation of ATN/AMHS by ACP WG-M are explained below:

2.1.1 Completion of Doc 9880

Meeting was informed that transfer of material from *Manual of Technical Provisions for the Aeronautical Telecommunication Network (ATN)* (Doc 9705) was on-going. A number of changes to Part IV, ATN Directory was underway, one of which is an extension to the ATN Facility Name. Part III – ATN/OSI Communication Services; obsolete material is required to be replaced with the new material which has been approved; IDRP Air-Ground Security is to be worked upon. It was agreed that selected material on Ground to Ground AMHS security in Doc 9705 should be transferred to Doc 9880 Part IVB. The situation regarding Air-Ground security was considered to be more complex and a proposal was made to replace the current approach with the one that has been used for ATN/IPS. Also it was proposed that a "secure mode" of communication with authentication tags on messages can be used replacing the current approach based on upper layers. It was agreed that the subject needed further review. The general view was that the near term focus should be on ground-ground communication as that is where the implementation activity is underway at present.

2.2.2 Data Communication Program

FAA Data Communications Programme involves the implementation of VDL Mode 2 over ATN in the US. Eurocontrol recently approved Implementing Rule for Air Ground Datalink Equipage under their Link 2000+ programme. The plan targets 1500 aircraft to be upgraded to PM CPDLC before end of 2011 with possible justified extensions into 2012. On the ground side 10 core area ANSPs (Europe) need to implement data link service by 2013 and another 16 ANSPs are required to complete the deployment by 2015. Technical guidance material has been developed for both ground and airborne implementers.

Meeting was also informed about some developments that have taken place in the development of Aeronautical Mobile Airport Communication System (AeroMACS), a system in the C-Band based on IEEE 802.16e standard.

Eleventh Working Group – I (IPS) Meeting of Aeronautical Communication Panel held in Montreal from 18 to 20 November, was informed about the *CPDLC Sweden Network* and results from the tests carried out on Mobile IPv6. An ATN/IPS based network is implemented to support advanced CPDLC services. Presently, this network is used for development work, tests and pre-operational activities. Solution termed Ground NEMO (Network Mobility) allows considerable bandwidth saving

with the reduction of a full IPv6 header. The solution is based on virtual NEMO routers being setup in the link ground stations and moving around the network, providing mobility. Full network implementation of ATN/IPS capability is planned during first half of 2010.

3. Action Recommended

3.1 Meeting is invited to note the developments that have taken place in the development of various guidance documents related to the implementation of ATN/AMHS and developments that are taking place in other related fields.

– – – – – – – – – – –