

International Civil Aviation Organization



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



Seoul, Republic of Korea, 16 - 20 May 2011

Agenda Item 3: Review outcome of relevant meetings

**REVIEW OUTCOME OF
AERONAUTICAL COMMUNICATION PANEL (ACP) MEETINGS**

(Presented by the Secretariat)

SUMMARY

Thirteenth meeting of ACP WG I and Seventeenth meeting of WG M were held in Bangkok from 27 January to 1 February. This paper presents outcome of these meetings. Paper presented on behalf of ATNICG highlighted two key issues. Paper present the meeting outcome on those two key issues also.

1. INTRODUCTION

1.1 Thirteenth meeting of Aeronautical Communication Panel (ACP) Working Group I – Internet Protocol Suite was held in Bangkok, Thailand on 27 and 28 January, 2011. Meeting, attended by 28 experts reviewed 11 Working and 4 Information Papers.

1.2 Seventeenth Meeting of Aeronautical Communication Panel (ACP) on Maintenance of Air -Ground and Ground - Ground Communication (WG M) Systems Working Group was held in Bangkok, Thailand on 31 January and 1 February, 2011. 21 participants from the member States and industry participated in the meeting.

2. DISCUSSION

2.1 Aeronautical Communication Panel (ACP) Working Group M – Maintenance Meeting

2.1.1 AMHS Implementation data-base

ACP Working Group M, in its Sixteenth meeting had decided to take action to allow ICAO GIS Portal to be used as a means to timely capture information on bilateral AMHS connections and other CNS developments. This included the possibility of integrating some of the existing

EUROCONTROL/ICAO EUR on-line database with the ICAO GIS Portal. Seventeenth meeting, reviewing this action item decided that the EUROCONTROL AMC could be used as an alternative to the GIS Portal for the purpose of indicating implementation status.

2.1.2 FAA Data Comm Programme

Meeting was presented information on the FAA Data Comm Programme, which covers automation systems in towers and the ATSU, avionics, network infrastructure and which will support a number of automated ATS Services. Two programme segments identified are:

- a) Segment 1: that will provide Tower Service beginning in 2014 with Departure Clearance, followed by en-route service in 2016 and will include automating routine clearances, transfer of communications to the next sector, and the ability to provide better routes around weather.
- b) Segment 2: that will introduce data messaging for non time-critical communications in the Approach Control environment as well as implementing trajectory based flight in designated airspace. This is expected to begin in 2018.
- c) Programme has been harmonized with SESAR, with Segment 1 corresponding to LINK 2000+ and Segment 2 corresponding to SESAR implementation Package 2.

2.1.3 EUROCONTROL LINK 2000+ and SESAR

Financial incentives have been provided to encourage equipage and around 500 aircraft are expected to be equipped as a result. Lab tests and initial flight trials have been conducted on multi-frequency VDL Mode – 2. Following time-frame is proposed

- Implementation Package 1 (IP1) using initial CPDLC (now – 2015)
- Implementation Package 2 (IP2) using initial 4D message set (2015 – 2020)
- Implementation Package 3 (IP3) using full 4D message set (2020 -- ++)

Meeting also shared information on “AeroMACS”, the airport surface datalink including interface between surface and air-ground datalinks.

2.1.4 Japan -- CARATS

Japan presented “Long-Term Vision of Future Air Traffic Systems in Japan” as included in “Collaborative Actions for Renovation of Air Traffic Systems” or CARATS and mentioned following collaborations:

- a) Collaboration with industry, academia and government;
- b) Collaboration between operators and Air Navigation Service Providers (ANSPs);
- c) International collaboration to realize seamless air traffic operations;

- d) Collaboration among co-users of airspace (Civil, Japan Self-defense Forces, US forces); and
- e) Collaboration with local communities.

2.1.5 ATN/OSI Document 9880 update status, Security updates (9705 baseline)

Advance Technology Organization of Honeywell International proposed that the detailed ATN Certificate and Certificate Revocation List (CRL) provision of Doc 9880 Part IV-B be replaced with references to industry standards, consistent with the Public Key Infrastructure (PKI) provisions in Section 2/5 of Doc 9896 (ATN/IPS). Analysis shows that the ATN certificate/CRL provisions align well with industry standards and requirements in Doc 9705 Edition 3 Sub-Volume VIII, with respect to the industry specifications IETF RFC 5480 and ATA Spec 42 and hence can be replaced. Meeting was also informed about similar efforts of using industry standards on other issues particularly related to Security. It was agreed that ICAO will place a version of Doc 9880 Part IVB on the Repository as an “advanced unedited Manual on detailed technical specifications for the ATN/OSI – Part IV B ATN Security Provisions”.

2.1.6 Doc 9896 VoIP Standards Development Status

Meeting considered following significant issues

- a) The need for FAA to have a stable standard in order to commence implementation;
- b) The quick review cycle (approx 12 months) for manuals and guidance material; and
- c) The low likelihood that the proposals would be rejected.

2.1.7 Maintenance of ICAO documents

Meeting discussed issues related to maintenance of ICAO documents which make reference to industry standards and identified two different processes depending on whether changes were being supported by the States or by the industry. Following significant issues were however noted related to the processing of changes:

- 1) The industry bodies today do not have an established Configuration Control Board or similar process. This is necessary as their committees are disbanded once their deliverables have been completed.
- 2) There is no forum for Industry Standards bodies and ICAO to coordinate their work. This is being worked on by the “Standards Roundtable” group however and is still “work in progress”.
- 3) Most industry bodies are driven by industry however RTCA is driven by the FAA. This will make ICAO-RTCA coordination more complex, however a solution should be possible.

2.1.8 Maintenance of VDL Documents:

Paper “VDL Mode 4 Capability as an ATN/IPS Sub network” stated that the VDL Mode 4 infrastructure has been upgraded to fully support ATN/IPS and hence called for clarification to Annex 10, Volume III to show this development and also sought clarification as to which ATN Transport protocols are supported by the respective sub-networks. It was informed that 12 VDL-4 ground stations had been installed in Sweden to support Electronic Flight Bags. Rockwell-Collins development on VHF Multi-Mode Radio (VMMR) supporting analogue radio on VDL Modes 1 and 2 was also mentioned. Meeting agreed to the changes proposed to replace VHF spectrum VDL-4 from 108 – 137 MHz to 112 – 137 MHz as provided in Annex 10, Vol. V to reflect changes to the ITU Radio Regulations.

Amendment to Manual on VDL Mode 2 (Doc 9776) was suggested by FAA to validate multi-frequency operation. These changes have already been included in the industry specs, ARINC 631-6 and the RTCA DO-224C MASPs. Explaining the concept behind “Broadcast SNDCF”, it was mentioned that point-to-point communications are inefficient for certain applications like:

- D-ATIS in the vicinity of the airport
- SIGMET
- NOTAM
- Aircraft Microphone Check (AMC)

Paper explained that ACARS over VDL Mode 2 had been modified to support broadcast mode and described the means by which ATN implementation can be modified to have the capability.

2.2 **Aeronautical Communication Panel (ACP) Working Group I – IPS Meeting**

2.2.1 Action Items:

The significant Action Items, which are of relevance to this meeting are

Action Item 11-3: *Mr. Terry Davis to approach the internet Corporation for Assigned Names and Numbers (ICANN) to investigate the possibility of acquiring a top level domain name for ICAO.* The Action Item is yet to be completed and hence it remains open.

Action Item 12-1: *Secretary to update 9896 (Doc) and produce Rev 19.* The Secretary reported that Doc 9896 is still being amended, hence this item remains open.

Action Item 12-2: *LFV to develop an amendment proposal to update NEMO capability in Doc 9896.* Mr. Niklas Friberg (LFV) submitted WP – 2 to the meeting on Update of Doc 9896 for NEMO Compatibility, which satisfies this action item. This item is now closed.

2.2.2 Voice over IP (VoIP)

To account for updates to EUROCAE Documents on VoIP in ATM, Working Group agreed to update the reference to ED 137A in Edition 2 of ICAO Doc 9896, for future publications. Meeting was also presented the review of EUROCAE WG 67 “ED 137A, Interoperability Standards for ATM VoIP Components, Part I: Radio”, which identified some editorial corrections and few clarifications to support two FAA operational requirements -- ability to support VHF and UHF Channel Pairing by enhancing Radio Remote Control Header Extension and Signal Quality

Information (SQI). Presentation proposed three additional parameters to support a new operational requirement for an Override Call (OVR) capability. FAA advised the meeting that they will be conducting an Operational Capability Test for Voice over IP (VoIP) vender from 16 to 25 May 2011 in Washington DC.

Meeting was informed that VoIP activities in EUROCONTROL was coordinated by “VoIP in ATM Implementation and Transition Expert Group (VOTE)” with a mission to address VoIP in ATM implementation and transition related issues on case by case basis and to identify solutions and deliver recommendations to interested parties (i.e ANSPs, Industry, Standardization Bodies etc.). Meeting was also informed about the activities in which VOTE was engaged.

Japan presented its VoIP validation plan for the year 2011. Japan Civil Aviation Bureau has deployed air-ground and ground-ground ATM voice system. ATM voice network in Japan supports extremely low latency and high reliability.

2.2.3 Other Items and Future Work

Meeting discussed as to how to address maintenance of ICAO and industry documents, when they are referred in the ICAO documents. This goes beyond RTCA/EUROCAE documents and Request for Change (RFCs) approved by the Internet Engineering Task Force (IETF). Main issue being that version control will be needed to ensure that references are up to date and more importantly, accurate. The issue was deferred to Working Group M, wherein it was decided that Configuration Control Board (CCB) should be re-established to address and process changes to ICAO ACP documents to address update of referenced industry standards. Para 2.1.7 provides further information on this issue.

Some modifications to Doc 9896 were proposed to provide clarifications on status of implementation of MIPv6 enhancements. In a presentation, the benefits of a systematic approach to addressing, DNS naming and security were brought out. Benefits predicted included greater security, network robustness and efficiency and simplified IPv4 to v6 transition.

2.2.4 Security

FAA informed that they are in the process of awarding a contract to study the proposed international standards for ATN air/ground security. Currently ICAO does not reference air/ground security in Doc 9880. FAA proposed that ATN air/ground standards from Doc 9705 Edition 3 be moved to ICAO repository to be used as a starting point for referencing ATN air/ground security. Doc 9705 Edition 3 would be a place holder for the final ATN air/ground security standard to be included in Doc 9880 Part 2B.

2.2.5 New Business

On behalf of ATNICG of APANPIRG, a paper was presented which included following two key issues:

- a) To clarify the status of acquisition of a global IPv6 address block; and
- b) To provide guidance on the issues related to backwards compatibility of AMHS, specifically interconnecting systems that support IPM84 and IPM88.

To supplement the information provided in respect of issue a), a reference was also made to WP/12 submitted to ATNICG WG/6 meeting. This paper provides cost information for the registration of internet address. An item of concern is the fact that if address space is not adequately used, the holder may lose the right to that address space. ICAO Secretariat agreed that ICAO Montreal will work to acquire the regional IPv6 address blocks for the regions.

Regarding compatibility of IPM 84 and IPM 88, the meeting was of the view that the issue is relevant for only one State in the Asia/Pacific region and it is believed that the issue should be addressed at the regional implementation level and not at the ICAO HQ level. The meeting therefore came to conclusion that no action was required by WG-I or ICAO Montreal.

3. ACTION REQUIRED BY THE MEETING

3.1 The meeting is invited to note the outcome of the two meetings, specifically in para 2.2.5 in respect of the two key issues raised in ATNICG paper
