



International Civil Aviation Organization

# What is next related to the AMHS Implementation issues

Julio Siu, ICAO NACC RO/CNS

ICAO/FAA Workshop/Meeting on the Follow-up to the Implementation of the ATS  
Message Handling System (AMHS) in the NAM/CAR Regions  
(Miami, Florida, USA, 10 to 12 April 2012)

# Objective

1. Briefing on ICAO updates to SARPs and guidance material
2. Describe pending aspects and issues on AMHS implementation





# OUTLINE

- **Updates and discussion by ICAO ACP**
  - ACP WG-M meeting results
  - ACP WG-I latest results
- **Aviation System Block upgrade**
  - Module B0-25
- **Pending aspects and issues on AMHS implementation**



# Updates and discussion by ICAO ACP

## Maintenance of Guidance Material

### ICAO ACP WG Maintenance (ACP WG-M)

- ACP WG-M is responsible for maintenance including the ATN.
- Former ATNP maintenance procedures are no longer applicable since the ACP re-organisation
- Any Proposed Defect Reports (PDRs) are to be forwarded to WG-M chairman and ACP Secretary

### ICAO Working Group Internet (WG-I)

- Developed Doc 9896 “Manual for the ATN using IPS standards and protocols”
- The ATN IPS is principally driven by de-facto IP industry standards

# ACP WG-M meeting results



**WG M – Maintenance of A/G and G/G Communication Systems  
18th Meeting  
Montreal, Canada, July 20th- 22nd, 2011**

## **ATN/OSI Document 9880 Update Status:**

- Revision and discussion of the ATN Security material developed from 9705 edition 3.
- Further discussion to be requested to ACP WGW about the current status of the work and the planned activities to define security provisions for Datalink services.

## **Other:**

- to allow the ICAO GIS Portal to be used as a means to the timely capture information on bilateral AMHS connections and other CNS developments.

# ACP WG-I latest results



## WG I – Internet Protocol Suite – 14th Meeting Montreal, Canada, 18th - 20th July 2011

### DOC 9896 DRAFT EDITION 2 - FINALISATION

Amendment to Doc 9896 Rev19: Many of these changes were the result of actions items from maturity and learned practices except for those concerning Directory Services. Directory Services will be developed once a concept of operations is developed and clear guidance on its implementation over IPS was available, both (i) the technical provisions for the support of Directory Services over IPS and (ii) guidance material on its use and implementation could be included in Doc 9896

### VOICE OVER IP considerations

recommendation to EUROCAE WG67 ED137A, Interoperability Standards for ATM VoIP Components Part 1: Radio, dated September, 2010 and EUROCAE WG67 ED137A, Interoperability Standards for ATM VoIP Components Part 2, dated September 2011. FAA operational requirements: will be specified in Part III of ICAO Doc. 9896.

# ACP WG-I latest results



## WG I – Internet Protocol Suite – 14th Meeting Montreal, Canada, 18th - 20th July 2011

IPv6 addressing: /16 addressing was needed to support the ICAO 24-bit addressing scheme. The /16 address block could accommodate /32 address blocks for each of the ICAO regions. (Except EUR/NAT, who had already secured a separate block).

the use of a common address block for aviation will had security benefits as the Boundary Gateway Protocol could be used to prevent aviation data being carried on the public internet and conversely to prevent access to the ATN/IPS from the public internet.

ICAO to develop a justification for a /16 address block and make an application to ARIN or IANA based on expediency.

# ACP WG-I latest results



**WG I – Internet Protocol Suite – 14th Meeting  
Montreal, Canada, 18th - 20th July 2011**

**IPV4-IPV6 Transition:** Development of draft guidance material for Doc 9896 on IPV4-IPV6 transition for Ground-Level.

**SARP Amendment:** Evaluation to modify the use of the OSI protocols to a Recommended Practice (while leaving IPS as a Standard): a paper for the ACP WGW recommending this SARPS amendment

**SWIM support:** the development of a suitable architecture to support SWIM.





# Aviation System Block upgrade

## Module N° B0-25: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration

- Supports the coordination between Air Traffic Service Units (ATSU) based using AIDC defined by ICAO Doc 9694 .
- permits also the transfer of communication in data-link environment in particular for Oceanic ATSU. It is a first step in the ground-ground integration

**Ground Systems:** Technology is available. It is implemented in Flight Data Processing and could use the ground network standard AFTN-**AMHS** or ATN. Europe is presently implementing IP Wide Area Networks

### Global Readiness

Standards Readiness	✓
Avionics Availability	No requirement
Ground systems Availability	✓
Procedures Available	✓
Operations Approvals	✓

# Pending aspects and issues on AMHS implementation



- to meet requirements of AIS (AIM), ATS (ATM), OPMET, SAR & aircraft operators' all comm. (ex. AIDC as priority, Extended Markup Language (XML) over AMHS);
- Started use of Public Internet with special security arrangement - cost effective medium. MET WAFS Traffic (WIFS & File Transfer);
- Planning and Implementation of integrated ATS ground-ground network to include voice communication requirements and AIDC application.



# Pending aspects and issues on AMHS implementation

- States shall organize training of personnel to provide necessary capability to maintain and operate the ground-to-ground ATN infrastructure and applications.
- permit States with limited AFS connections or traffic with other States to operate only UA terminals and to use the MTA of another State, subject to bilateral agreement.
- AFTN and AMHS expected to co-exist for considerable period of time
- Need for website for common information on AMHS Implementation in CAR Region

# Pending aspects and issues on AMHS implementation



## *Directory Service considerations*

- can be used to distribute, update and synchronize address translation data between ATN & AMHS
- allows lookup and browsing of ATC object entries by operational and administrative staff
- can support Public Key Infrastructure (PKI) for digital signatures for AMHS and other applications
- will provide more efficient & timely management of the data required to operate the AMHS & AFTN gateways
- currently few ANSPs are using AMHS
- those that are using want to gain more experience before committing to deploy the Directory Service – recognizing the associated difficulties



# Pending aspects and issues on AMHS implementation

- Follow-up AMHS Implementation according to Action Plans and CAR/SAM ATN Strategy Implementation.
- Participating states to register to the AMC
- Revision and definition of MF Addressing scheme (XF/CAAS)
- Follow-up to IPv4 addressing scheme implementation in the CAR Region
- Assist and support AMHS Test and cutover planning



# ICAO

Uniting Aviation on

Safety | Security | Environment

