International Civil Aviation Organization

FOURTEENTH MEETING OF THE COMMUNICATIONS/NAVIGATION/SURVEILLANCE AND METEOROLOGY SUB-GROUP OF APANPIRG (CNS/MET SG/14)

Jakarta, Indonesia, 19 – 22 July 2010

Agenda Item 3: Aeronautical Fixed Service (AFS):
1) review report of the Fifth Meeting of the ATN Implementation Coordination Group (ATNICG/5)

REVIEW ATN IMPLEMENTATION STRATEGY IN THE ASIA/PACIFIC REGION

(Presented by Singapore on behalf of ATNICG)

SUMMARY

This paper presents the revised Strategy for Implementation of Aeronautical Telecommunication Network (ATN) in the Asia/Pacific Region that was formulated at ATNICG/5 meeting for review and consideration of the meeting. The proposed revision was to accommodate the changes that have taken place in the ATN/AMHS implementation environment.

This paper relates to:

Strategic Objectives:
D. Efficiency – Enhance the efficiency of aviation operations
E. Continuity – Maintain the continuity of aviation operations

Global Plan Initiative:
GPI – 22 Communication infrastructure

1. Introduction/Background

1.1 The 1st edition of the Strategy for implementation of ATN in the Asia/Pacific Region was developed by the Seventh Meeting of the ATN Transition Task Force (ATNTTF/7) to assist the Asia/Pacific States on ground-to-ground ATN implementation. It was adopted by APANPIRG/16 under Conclusion 16/29. It was also recognized that the strategy needs to be reviewed from time to time in light of developments and as required; amendments developed should be processed for review and adoption by APANPIRG.

1.2 The first amendment to the Strategy was proposed at ATNICG/1 meeting, in consideration of the progress in ACP's development work of the SARPs for IPS and the need to ensure harmonization of procedures and protocols. The amended Strategy permits the deployment of a network approach for the provision of dual stack (OSI and IPS) protocols and was adopted by APANPIRG/17 under Conclusion 17/21. Subsequently, it was identified this Strategy should be reviewed for introduction of new developments such as ATN over IPS implementation in the Asia/Pacific Region. The Strategy was thus revised to include this new requirement by the Third Meeting of ATNICG. The recommended revised strategy was presented to APANPIRG/19 through CNSMET SG/12.

2. Discussion

2.1 In order to develop a common Strategy for the implementation of ATN in the region, the group sees the need to review the Strategy once again so as to merge the ATN over IPS implementation strategy with the ATN implementation strategy. A revised Strategy which consists of three parts was thus developed by the ATNICG (see Attachment).

2.2 The First part of the Strategy details the considerations based on which the strategy had been developed, the Second part describes the general strategy for implementation of ATN infrastructure and associated ATN applications in the region and the Third part recommends the actions to be taken by States in order to achieve the objectives of the Strategy.

2.3 The Strategy recommends deployment of a backbone network of ATN/OSI and a private network of ATN/IPS comprising of dedicated point-to-point circuits with no connectivity with the Public Internet. Strategy also recommends migration from the X.25 sub-network to IP sub-network connectivity. Usage of Public Internet however is accommodated for connectivity between MTAs and UAs, subjected to appropriate security provisions and access control.

3. Action by the Meeting

3.1 The meeting is invited to review and endorse the attached revised Strategy for Implementation of ATN in the Asia/Pacific Region and recommend for adoption by APANPIRG.

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STRATEGY FOR IMPLEMENTATION OF THE AERONAUTICAL TELECOMMUNICATION NETWORK (ATN) IN THE ASIA/PACIFIC REGION

Considering that:

1) the requirement for a robust ground-to-ground Aeronautical Telecommunication Network (ATN) to meet the growing need for digital data communication to support the Air Traffic Management Concept;

2) the availability of ICAO SARPs and technical manuals for the ATN based on the OSI protocols (ATN/OSI) and the Internet Protocol Suite (ATN/IPS), and the availability of equipment and readiness of vendors to support both ATN/OSI and ATN/IPS ground-to-ground communications;

3) the availability of AMHS Transition and Implementation guidance materials required to assist States to ensure harmonization of procedures and protocols and thereby assure inter-operability within the region;

4) the need to support States currently using AFTN terminals for communication with other States, and the need to replace these aging terminals with ATS Message User Agents (UA); and

5) the backbone States in the Asia/Pacific region have already implemented, or are in the process of procuring and implementing, AMHS based ATN/OSI.

THE GENERAL STRATEGY FOR THE IMPLEMENTATION OF THE ATN INFRASTRUCTURE AND ASSOCIATED ATN APPLICATIONS IN THE ASIA/PACIFIC REGION IS AS FOLLOWS:

a) strategically deploy a backbone network of ATN/OSI routers and AMHS Message Transfer System (MTS) to provide a reliable infrastructure to initially support ground-to-ground applications and the planned ATN/OSI air-ground applications.

b) strategically deploy an ATN/IPS backbone network as a private network which comprises dedicated point-to-point circuits without connection to the Public Internet to support data communication, and migrate ATN/OSI router interconnections from X.25 sub-network to IP sub-network connectivity;

c) permit non-backbone States, and States in other regions with connections to the Asia/Pacific region, to connect their Message Transfer Agents (MTA) to backbone States using either the OSI-based ATN Internet Communications Services (ICS) or the ATN IPS on a bilateral basis;

d) 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. Such UA to MTA connections may use the Public Internet subject to appropriate security provisions and access control;

e) complete migration from AFTN to AMHS within the time frame specified in the FASID ; and

f) once a robust ATN/IPS backbone network has been established, eventually phase out use of the ATN ICS by AMHS and operate the AMHS MTA network using the ATN/IPS as specified in ICAO Doc 9880 section 3.2.2.2.3.

IN ORDER TO ACHIEVE THE ABOVE STRATEGY THE FOLLOWING IS REQUIRED OF STATES IN THE ASIA/PACIFIC REGION:

g) States shall provide implementation in compliance with Annex 10 SARPS and ICAO Manuals, and with the Plans, Policies and AMHS Transition and Implementation guidance materials adopted by APANPIRG;

h) Backbone States shall implement AMHS MTAs that support both the ATN ICS and ATN/IPS network services as specified in ICAO Doc 9880 section 3.2.2.2. Non-backbone States may implement MTAs that support either or both network services.

i) Backbone States shall implement ATN/OSI routers with X.25 sub-network capability and later migrate to IP sub-network capability for interconnection with other Backbone States and Non-backbone States.

j) States shall work co-operatively to assist each other on a multinational basis to implement the ATN and AMHS in an expeditious and coordinated manner and to ensure system inter-operability; and

k) States shall organize training of personnel to provide necessary capability to maintain and operate the ground-to-ground ATN infrastructure and applications.

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