



**INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE**

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

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Considering:

- 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 based on the OSI Protocol Suite (ATN/OSI) and the Internet Protocol Suite (ATN/IPS);
- 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;
- 5) that several States in the ASIA/PAC region have conducted trials and demonstrations for implementation of AMHS and have taken actions for introduction of AMHS; and
- 6) the availability of equipment and readiness of vendors to provide equipment for both ATN/OSI and ATN/IPS ground-to-ground and ATN/OSI air-ground communications.

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

- a) strategically deploy a backbone network of ATN/OSI routers and MTAs to provide a reliable infrastructure to initially support ground-to-ground applications and the planned ATN/OSI air-ground applications;
- b) gradually migrate ATN/OSI backbone routers from X.25 sub-network connectivity to IP sub-network connectivity using the IP SNDCEF feature of ATN/OSI routers;
- c) implement IP sub-network connections among backbone and non-backbone routers as a private network, i.e., without connection to the Public Internet;
- d) permit non-backbone States to connect to backbone States using either ATN/OSI routers and MTAs, or IP routers and MTAs;
- e) permit backbone States with connections to States in other regions to connect using either ATN/OSI routers and MTAs, or IP routers and MTAs on a bilateral basis;
- f) permit States with limited AFTN or AMHS connections to other States to connect to MTAs in other States rather than operate their own MTAs;
- g) permit States with limited AFTN or AMHS connections to other States to connect terminals to MTAs in other States using the Public Internet but with appropriate security provisions for access control;

- h) within a reasonable time frame convert all AFTN systems to AMHS; and,
- i) eventually operate AMHS applications only with IP routers and MTAs.

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

- j) States shall provide implementations in compliance with Annex 10 SARPS and ICAO Manuals, and with the Plans, Policies, and AMHS Transition and Implementation guidance materials adopted by APANPIRG;
- k) States having Backbone Boundary Intermediate Systems (BBIS) shall implement MTAs that support both ATN/OSI and ATN/IPS;
- l) States having BBIS shall implement ATN/OSI routing with X.25 sub-network capability and optionally with IP sub-network capability for interconnection with other BBIS;
- m) States having BBIS that connect to States in other regions shall provide high availability connections (e.g., with redundant physical connections);
- n) States having Boundary Intermediate Systems (BIS) shall implement ATN/OSI MTAs, or ATN/IPS MTAs, or dual-stack MTAs;
- o) States shall work co-operatively to assist each other on a multinational basis to implement the ATN expeditiously and to ensure system inter-operability; and
- p) States shall organize training of personnel to provide necessary capability to maintain and operate the ground-to-ground ATN infrastructure and applications.
