International Civil Aviation Organization

Fifth Meeting of Aeronautical Telecommunication Network (ATN) Transition Task Force of APANPIRG

Phuket, Thailand, 9 – 13 June 2003.

Agenda Item 2:   **Report on the ATN Transition Task Force Ad Hoc Working Group activities.**

Report on the ATNTTF Ad Hoc Working Group Activities

(Presented by the Rapporteur of the ATNTTF Ad Hoc Working Group)

SUMMARY

This Information Paper provides an update on the work activity that was performed by the ATNTTF Ad Hoc Working Group during 2002.

1. *Introduction*

    The information contained in this paper is to highlight the work activity that the ATNTTF Ad Hoc Working Group has performed since the last ATNTTF meeting, which was held in Mumbai in April 2002.

    Members of the Working Group have worked consistently throughout the year to try to meet target dates that have been set by the Task Force as well as trying to meet their own organisation's work commitments.

2. *Background*

    The ATNTTF Ad Hoc Working Group (formally known as the ATNTTF Ad Hoc Working Group B) was established by the ATNTTF at its 2nd meeting in March 2000 at Chiang Mai.

    The working group is mainly responsible for the development of a number of ATN technical documents that were identified in Task 3 of the Subject/Task List. Such documents included Security (which is now referred to as System Integrity), Performance and System Management.

    In addition, the working group was also tasked to develop further documents that were identified in Task 6 of the Subject/Task List. These included the ATN Router ICD, AMHS ICD, Directory Services, Routing policy for IDRP and an AIDC ICD.

    At the 4th meeting of the ATNTTF further tasks were assigned to the Working Group including Task 7 and Task 8

The ATNTTF Ad Hoc Working Group is made up of volunteers from seven States who have elected to be part of the working group. Their responsibilities are to carry out research and development of the required technical ATN documents that will benefit the Asia Pacific Region.

The States that are current members of the ATNTTF Ad Hoc Working Group include Australia, Fiji, Hong Kong China, Japan, Singapore, Thailand and the United States of America. Other organisations such as SITA also participate in the working group.

The working group can be joined by other States and organisations within the Asia Pacific region willing to participate in its activities as assigned by the ATNTTF.

3. *Report on Activities Performed During 2002/3*

The ATNTTF Ad Hoc Working Group was able to meet twice during 2002.

The first meeting was held during the middle of November 2002 and was hosted by Airservices Australia in Canberra.

The second meeting was held during early March 2003 and was hosted by Airports Fiji Limited in Nadi.

An abbreviated version of the minutes from the Canberra meeting is included as Appendix A to this paper.

An abbreviated version of the minutes from the Nadi meeting is included as Appendix B to this paper.

Due to certain constraints outside the control of the working group, the group could only get together in November 2002 to hold its first meeting since the 4th ATNTTF meeting. The meeting was held during the week of the 18th of November.

The 7th meeting of the ATNTTF Ad Hoc Working Group was held during the week of the 3rd of March to finalise a number of documents and working papers for the 5th ATNTTF (ATNTTF/5) meeting.

4. *Achievements*

The tasks so far achieved by the ATNTTF Ad Hoc Working Groups (WG A & WG B) includes:

- Release of Guidance Material for Ground Elements in ATN Transition (WG A);

- Release of Asia/Pacific ATN Transition Plan (WG A);

- Release of Asia/Pacific ATN Routing Architecture (WG A);

- Release of Asia/Pacific ATN NSAP Addressing Plan (WG A);

- Release of Asia/Pacific AMHS Naming Plan (WG A);

- Release of Asia/Pacific NSAP Registration Form (WG A);

- Release of ICD for ATS Message Handling System (AMHS) in Asia/Pacific Region (WG B);

- Release of Documentation Map for the Asia Pacific ATN Transition (WG B); and

- Plan release of the Asia/Pacific Regional Interface Control Document for ATN Ground to Ground Router for ISO/IEC 8208 sub network (WG B).

Assigned work to be completed by the ATNTTF Ad Hoc Working Group (B) includes the following:

- Asia/Pacific ATN IDRP routing Policy;

- Asia/Pacific AMHS MTA Routing Policy;

- Asia/Pacific Technical Document on Use of Directory Services;

- Asia/Pacific Regional System Management Transition Guideline Document;

- Asia/Pacific Policy for ATN System Integrity;

- Asia/Pacific Regional Interface Control Document for ATN ATS Interfacility Data Communications (AIDC); and

- Guidance Material for Use of the Public Internet for AFTN.

5. *Proposed Meetings of the ATNTTF Ad Hoc Working Group*

It has been proposed that the ATNTTF Ad Hoc Working Group will convene two meetings during 2003 to continue on with the research and development of the remaining technical documents.

Venues and hosts for the meetings will be announced to the ATNTTF Ad Hoc Working Group members in due course.

6. *Action by the Meeting*

Delegates of the Task Force are invited to review the work performed by the ATNTTF Ad Hoc Working Group and to comment on the various documents that are to be presented during the ATNTTF/5 Meeting.

States and Organisations from the Asia Pacific region who would like to volunteer to participate in the work of the Ad Hoc Working Group are invited to nominate at this time.

Existing members of the Ad Hoc Working Group are also requested to confirm their continuation to participate at this time:

      Australia;

      Fiji;

      Hong Kong China;

      Japan;

      Singapore;

      Thailand;

      United States of America; and

      SITA.

Appendix A – An Abbreviated Version of the Minutes of the ATNTTF Ad Hoc Working Group Canberra (6th) Meeting

1. The ICAO Asia Pacific ATNTTF Ad Hoc Working Group (WG) convened its sixth meeting in Canberra, Australia from the 18th to the 22nd of November 2002. The objective of the meeting is to discuss and finalise a number of ATN documents required to be presented at the Fifth ATNTTF meeting to be held in Shanghai China.

2. The meeting was attended by 18 participants from Australia, Fiji, Japan, Singapore, Thailand, United States and SITA. Airservices Australia hosted the meeting.

3. Agenda Item 2 – Report on the ATNP Joint Working Group
NS present IP1 that highlighted the main issues arising from the ATNP Joint Working Group meeting held in Toulouse, France in October 2002. The main issues arising from the meeting were:

   - The disbandment of the ATNP and AVSSG and any outstanding work transferred to the AMCP. The AMCP will be renamed to the Aeronautical Communications Panel (ACP).
   - TCP/IP issues on AMHS
   - ATN Panel secretary indicated that the ANC would be setting up a panel to look at developing guidelines for the use of the Public Internet for Aviation purposes.
   - Doc 9705 Edition 3 is available on CD. Edition 4 is due for release around mid 2004.
   - Doc 9739 Edition 2 of the CAMAL is ready for publication.

4. Agenda Item 9 – Directory Services.
JM presented WP5, which outline the issues associated with Directory Services.
Main discussions raised from the working paper were that the ATN contains non-standard X500 objects and attributes that will need to be defined. The meeting agreed that it would need to review the object classes, determine object requirements, contents and proposed sharing arrangements.
The meeting also identified that a policy statement should be developed and that this information will need to be exchanged between the Regions and within the Asia Pacific Region.

5. Agenda Item 10 – Use of the Public Internet for AFTN.
KM presented WP3, which outlined the Safety Case that Australia used in determining the risks and mitigation strategies that were applied to an internal AFTN product that was developed to use the Public Internet for low traffic areas in the Asia Pacific region. Issues discussed were the use of redundant firewalls, IDS monitoring of the host and network, Password Restrictions and Policy for users access.
The meeting agreed that some generic certification and accreditation process should be developed outlining a recommended protection profile.

6. Agenda Item 8 – AMHS Routing Policy
JM presented WP6 outlining the issues associated with the MTA routing policy. The paper outlined two options, a backbone MTA architecture or whether all MTAs are interconnected in the region. After some discussions the following assumptions were made to allow the AMHS Routing Policy document to be developed.

   - That a number of MTAs within the Region can interconnect to each other.
   - That inter Regional connections should go via nominated backbone MTAs to reduce the number of addresses to be maintained.
   - Alternate backbone MTAs to be nominated for each regional connection.
   - Regional office to maintain the Routing of MTAs to ensure that no MTA within the Region is isolated from traffic delivery.

7. Agenda Item 4 – ATN Routing Policy
   WP8 was presented by TP. The paper provided an outline of the ATN Routing Policy document. The document describes various routing requirements such as aggregation, Preference (acceptance) and Distributive.
   The document needs to insert a routing drawing into Section 3 to assist with the description of the various routing policies being described.
   Also words need to be included for the internetworking of air ground subnet between subnet service providers.

8. Agenda Item 3 – ATN Router ICD
   RC presented WP9, which contained the draft ATN Router ICD. WP8 and WP10 were also present by MB and the RC, which contained comments on the draft ICD. The meeting reviewed the ICD in detail in preparation for the document to be ready for review by the next ATNTTF meeting.
   One of the main issues to arise from the review was the reference of Doc 9705 Edition 3 ground to ground router PICS. Discussions were base around that only Edition 2 products are currently available and this would cause some concern for the region to reference the latest edition of Doc 9705, which could restrict some States from procuring their ATN routers. The meeting agreed that the ICD should reflect Ed 3 PICS be referenced but to make a statement in the ICD that Edition 2 items are only addressed. This will allow the ICD to reference the latest PICS but that Edition 2 elements are to be used for the initial release of the ICD.

   Other comments were:

   - Parameter settings for the use of satellite circuits should be included in the ICD;
   - Review of T20 – T23 default values;
   - Appendix E to be removed but relocated to another document (to be decided by the WG or the ATNTTF);
   - Include in preamble of all docs the ATN Documentation Tree but to highlight the document to show its hierarchal position in the tree;
   - Remove all reference to Public PSN, and remove PSN figure in Fig 1-3.
   - Title of document to be referred to as the Asia/Pacific Regional Router Interface Control Document – for Aeronautical Telecommunication Network Ground to Ground Router;
   - HDLC Idle Probe Timer (T4) to be checked as it is not stated in the X.25 1984 standards.

   Another issue to be raised is the need for a X.121 Addressing Plan and how this will be maintained.

9. Agenda Item 5 - Use of IP as a Sub Network for the ATN
   The meeting discussed the issues that other Regions are pushing to use IP and that the IP technology is pushing forward at a greater pace that will result in the Asia Pacific Region having to make allowance for it. However with the disbandment of the ATNP and that a great deal of work has already been developed by the ATNP working groups with only a few outstanding issues to be resolved is whether the new to be formed ACP is going to complete the work started by the ATNP.
   Due to the uncertainty it is felt by the meeting that guidance material cannot be developed until the Region has a better understanding of the directions of the new ICAO Panel.

10. Agenda Item 7 – System Management
    RH presented an outline of the System Management (CONOPS) document (WP11). Discussions where based on system monitoring, system management, configuration management and how the various system objects are to be managed. RH was requested to start formatting the document and to include the standard preamble of inserting the relevant ATN Documentation Tree that relates to System Management.

11. Agenda Item 6 – ATN Performance
TM presented WP7 outlining that most of the work has been structured around the operational performance on RCP (air-ground performance). As there is very little information relating to ground-ground applications performance requirements and that there is no Panel group responsible for the Required Communications Performance (RCP) in this area that to develop guidance material for ground-ground networks is causing a problem to prepare anything to report to the meeting.
One recommendation by the meeting is to conduct a bottom up approach. To assist the WG at its next meeting TP agreed to prepare a metric table (spreadsheet) showing basic parameters such as link speed, packets throughput per second, messages per sec etc.

12. Agenda Item 11 – Other Business
Review of the ATN Documentation Tree.
The meeting review the ATN Documentation Tree with a number of amendments that should be made to the document. CH to prepare a working paper outlining the proposed changes to the Task Force.
Future Work for Task Force.
The meeting discussed a number of items that should be considered by the Task Force as future work packages. These items include:

- Preparation of the X.121 Addressing Scheme Plan;

- The work prepared in Appendix E of the draft Router ICD – where can this information be documented for use by States;

- The development of an ATN Certification/Qualification program for the Region;

- Air Ground Work Package.

ATN Implementation Activities

Hong Kong China Main ATN Activities:

- ATN/AMHS technical trials with Japan completed in July 01;

- ATN/AMHS technical trials with the MET office in HK are in progress;

- ATN/AMHS trials with Australia concluded in May 02;

- ATN/AMHS technical trials with Thailand completed in February 02. Operational trials commenced in July 02;

- Tests of ATN circuit between HK and Thailand using International private leased circuit (IPLC), have indicated transit times of less than 3 seconds one-way while that with Japan using X.25 public carrier required 13 seconds to exchange 2000 characters at a link speed of 9.6kbps;

- Completed ATN technical trials with China (Beijing) in August 02. A tripartite ATN technical trial between China and Thailand was successfully completed in October 02;

- ATN/AMHS technical trails with China scheduled for December 02.

- Plans next year to begin trials with Singapore, local airlines and pre-operational trials with Japan.

USA ATN Activities:

- Completing security checkout of AMHS MTA;

- Planning for March 2004 to go operational between the USA and Japan.

13. The meeting closed at 11.00 a.m. 22nd of November 2002.

Appendix B – An Abbreviated Version of the Minutes of the ATNTTF Ad Hoc Working Group Nadi (7th) Meeting

1. The ICAO Asia Pacific ATNTTF Ad Hoc Working Group (WG) convened its seventh meeting in Nadi, Fiji from the 3rd to the 6th of March 2003. The objective of the meeting was to discuss and finalise the ATN Router ICD and ATN IDRP Routing Policy documents and a number of Working Papers that will be presented at the Fifth ATNTTF meeting (ATNTTF/5) to be held in Shanghai, China.

2. 17 participants attended the meeting from Australia, Fiji, Japan, Thailand, the United States, Papua New Guinea and SITA. The meeting was hosted by Fiji. A number of Airports Fiji Limited personnel also attended the meeting as observers.

3. The meeting was formally opened by an address from the Chief Executive Officer of Airports Fiji Limited who welcomed the delegates to Fiji and advised the meeting of the importance of the ATN and the commitment that Airports Fiji Limited has to the implementation of the ATN in their part of the region.

4. Agenda Item 1 – Final review of the ATN Router Interface Control Document.
Robert Chang gave a PowerPoint presentation on the Router ICD that will be used to present the ICD to the ATNTTF/5 meeting. A review of the ICD document also checked for mark ups from the 6th meeting of the WG. A number of small editorial changes were made and some preamble information was deleted from the document.

5. Agenda Item 2 – Discussion on directory objects and attributes.
Jim Moulton provided a briefing on the objects and attributes associated with Directory Services. The meeting agreed that this information should be presented to the ATNTTF/5 meeting to provide feedback on progress made. JM will develop an Information Paper on the status of the document, to which the document will be attached as a draft copy.

6. Agenda Item 3 – Review status on MTA Routing Policy document.
Jim Moulton gave a briefing on the issues associated with the MTA routing policy document. The meeting discussed the trade-offs between "minimum hops" routing versus a concept of "smart MTAs" to provide MTA default routes. Jim Moulton will prepare a Working Paper on the status of the document outlining the issues that are being addressed.

7. Agenda Item 4 – Review status on the system management document.
Bob Hallman presented the development of the system management document. The meeting agreed that the content of the document is progressing in the right direction. Further discussion on the content was expressed in the meeting to assist in completing the document. It was agreed that RH prepare an Information Paper outlining the work in progress on the document and to present the paper along with a draft copy of the document to the ATNTTF/5 meeting.

8. Agenda Item 5 – Review Working Papers that are to be presented at the next ATNTTF meeting.
Tom McParland provided a briefing on the status of the IDRP Routing Policy document. The meeting agreed that TP would develop a Working Paper outlining the issues associated with the development of the document, and a draft copy of the document would be attached to the paper. The document is to contain an appendix showing a route propagation flow diagram to explain how the routing policy works.

The Ad Hoc working group agreed that the next task regarding IDRP Routing Policy would be to formulate a draft policy on Air-Ground routing issues. Adrian Goodfellow will prepare a Working Paper on the topic to be presented to the ATNTTF/5 meeting.

Tetsuo Mizoguchi briefed the meeting on the status of the Performance document. It was agreed that the performance document should be based on network metrics and AMHS

metrics given the current lack of quantitative operational requirements. TM will prepare an information paper on the status of the work in progress and will present the paper along with a draft copy of the performance document to the ATNTTF/5 meeting.

Tom McParland briefed the meeting on the status of the Security document. The meeting agreed to rename the subject matter to System Integrity Policy as it is a more appropriate term. It was also agreed that TP prepare a Working Paper on the topic that can be presented to the ATNTTF/5 meeting.

Adrian Goodfellow briefed the meeting on a qualification process that could be suitable for AMHS. It was agreed that the paper would be presented to the ATNTTF/5 meeting under Agenda Item 10.

Craig Head presented an updated version of the ATN Documentation Tree document. Thailand presented a revised version of the document. The meeting agreed to present the revised version to the ATNTTF/5 meeting.

Craig Head presented an Information Paper on the use of Internet Protocol (IP) networks as a subnet for the ATN. The meeting generally agreed to the contents of the paper, with a number of minor editorial changes.

9. Agenda Item 6 – Any other business.
    Chonlawit Banphawatthanarak offered to start on the preparation of the ATN AIDC ICD document. The document will be review at the next Ad Hoc Working Group meeting.

10. The meeting closed at 12 noon on the 6th of March 2003.