WG2/WP 413

Aeronautical Telecommunication Network Panel
Working Group 2
Redondo Beach, California, USA
27-30 October 1997

Report of the 12th ICAO ATNP WG2 Meeting
Langen, Germany 23-26 June 1997

Presented by R. Jones

Attachment: final draft report of the 12th meeting of ATNP WG2

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******** FINAL DRAFT (7 October 1997) ********

0. Meeting Organizational Issues

Working Group 2 met in joint session with Working Group 3 for the opening remarks and discussion of the administrative arrangements for the working group meetings. Mr. Lafferton, of DFS, welcomed the ATNP working group members to the DFS facilities. Mr. Herber provided information on the office support and other arrangements for the meeting. He also introduced Mrs. Carla Mueller and Sabine Jung, who provided secretarial support for the meeting. After introductions of the WG2 participants the working papers were collected and assigned working paper numbers.

1. Approval of the Agenda

Mr. Jones, Rapporteur of WG2, presented WP 396 (Attachment 1 to this report), the proposed agenda for the meeting. Mr. Paydar, the panel secretary, brought up the point that WG2 needed to review the VDL Mode 4 design guidelines, as per the request of ATNP/2. There was some concern about the mandate for ATNP to comment on the VDL Mode 4 guidelines, since this was not obvious from the ATNP/2 report. However this did not apply to VDL Mode 3, for which a review had taken place and a working paper (WP 387) had been submitted for review under agenda item 6.2. Mr. Paydar questioned where on the agenda the issues of VDL Mode 4 would be discussed and it was suggested by Mr. Jones this topic could be discussed under agenda item 6.2, "Additional and/or revised SNDCFs for mobile and/or ground subnetworks." The agenda was approved as proposed.

2. Review and Approval of the report of Eleventh Meeting of WG2 (Phuket)

Mr. Jones introduced WP 397, the Report of the Eleventh Meeting of WG2. The only proposed change was to revise the text in para. 7.3. The meeting agreed to replace the fourth sentence with: "The study had simulated exchange of IDRP information and found that fragmenting the region into 3 ATN islands would be optimal with the type of mobility scenario that was simulated." Also, the working group agreed to remove the last sentence of para. 7.3. No other changes were required and the report was subsequently approved as modified.

3. Inputs/Issues from other ICAO Bodies (e.g., Panel Secretary, CCB, WG1, etc.)

Mr. Paydar presented WP 403 providing an update on the actions that have been taken by the Air Navigation Commission (ANC) and by the Secretariat since the Working Group of the Whole in

March 1997. He reported that the ANC on the 27th and the 29th of May 1997 reviewed the reports of ATNP/2 and the WGW meetings. He reported that the ANC approved the ATN SARPs for distribution for State comment. The proposed changes from the WGW meeting were accepted except for those associated with Tables 2.3.7-5 to 2.3.7-28 of the CPDLC draft SARPs. The proposed changes to these tables were rejected by the ANC as they appeared to not be consistent with the changes to the PANS-RAC (Doc 4444) as put forward by the ADSP which had already been distributed for State comment. Mr. Asbury, Rapporteur of WG3, and others pointed out that this created an issue that will need to be addressed by the ATN CCB and perhaps the ADSP, as the changes that had been proposed at the Phuket working group 3 meeting were, in fact, aligned with the operational requirements from the ADSP.

Mr. Paydar reported that the Secretariat had made a small number of editorial changes to the draft ATN SARPs and appendix. He also reported that he has provided, to the CCB chairman, both a hard copy and an electronic copy of the SARPs (and appendix) including all of the ANC and Secretariat changes. This generated considerable discussion on the need to have the ATN CCB directly involved in the processing all changes to the draft SARPs. He agreed to provide an indication to the CCB chairman where the changes have been introduced by the ANC and the Secretariat.

Mr. Paydar reported that the core ATN SARPs would be sent to States on 27 June 1997. States will also be advised that a copy of the detailed ATN provisions (Appendix A to the SARPs) will be sent on request. He noted that ICAO is not requesting State comments on the Appendix.

Mr. Paydar reported that the ANC had expressed support for the formation of a CCB within the ATNP. However, the ANC did not accept the recommendation of ATNP/2 for a broader role for the CCB. It is understood that the CCB will maintain the ATN SARPs and will submit to the ANC, through the Panel Secretary, appropriate amendment proposals as and when required. Concerns were expressed by the working group members on the ability of the CCB to maintain configuration control unless the changes introduced by the Secretariat and/or the ANC were input back into the CCB via the defect reporting process.

Mr. Paydar reported that the revised ATNP work programme was approved by the ANC. He also noted that the guidance material should be prepared in the form of an ICAO manual and be available by ATNP/3. He suggested that an outline for such a manual, incorporating the 'Planning and Implementation Guide' as well as ATN guidance material, be prepared for approved at the Joint Working Group meeting on 27 June 1997. He also noted the panel is expected to finalize a second (final) package of SARPs as well as complete set of guidance material by ATNP/3. There was considerable discussion on the idea that the next version of the ATN SARPs would be 'final' version. The members of the working groups clearly stated that revisions to the ATN SARPs to address new and revised operational requirements coming out of the ADSP could be expected well beyond ATNP/3. It was decided to address this issue at the subsequent Joint Working Group meeting and potentially draft a proposed response that could be approved by the forthcoming Working Group of the Whole meeting, in November 1997, for submission to the ANC.

Mr. Calow presented WP 394 on the results of the May 1997 WG1 subgroup meeting. He presented the proposed work on Security and Systems Management. He noted that there was a proposal that WG1 from three subgroups to progress its work programme as assigned by ATNP/2. He also noted that certain of the WG2 tasking had a direct dependency on the products to be produced by WG1 (e.g., security framework and system management framework). Mr. Calow presented the proposed WG2 tasking, consistent with the proposed WG1 tasking and schedules, from WP394 in terms of what tasks WG2 needs to perform before ATNP/3.

Mr. Jones mentioned that there would be WG1 subgroup meetings, if approved by WG1, for both security and system management tasks before the October 1997 WG meetings. Those subgroup meetings would prepare initial draft text for the core part and sub-volume 1 of the ATN SARPs. Mr. Jones indicated that the purpose of WP 394 was to ensure that WG2 begin its work in a timely manner so that we can complete the assigned work programme by ATNP/3.

Mr. Jones presented the security aspects of the WP. He discussed the problem with ground-ground security key management issues in relationship with managing aircraft keys. Since there is already a WG3 work item for the use of X.500 and the integration of X.500 and CMA, by extending this with X.509 security capabilities could provide the basis for the ATN security framework. Mr. Jones reported that Mr. Bigelow has agreed to chair the WG1 security subgroup (i.e., SG2), however this must be endorsed at the WG1 meeting 30 June-3 July. Mr. Jones reported that questions remain about how this X.509 approach could be used for the IDRP authentication requirements.

Mr. Jones reported that WP 394 requests that WG2 review the paper and make comments back to WG1. He indicated that comments during this meeting would be important as an input to the WG1 meeting the following week.

On the system management topic, Mr. Jones requested that WG2 look at the framework proposed by WP 394 and the proposed WG2 tasking. WG2 was asked to review the framework and to develop SARPs for management of the ICS SARPs. He indicated that WG2 comments would be useful input to the following week's WG1 meeting. Mr. Jones reported that the system management framework proposed by WP 394 was not as detailed or complete as would be ultimately needed and significant work will be required by the WG1 subgroup to further the definition before the October 1997 WG1 meeting. The central emphasis of the proposal was the requirements for SARPs definition of manager-to-manager exchanges as opposed to manager-to-agent exchanges. However it was noted that as WG1 progresses the system management framework definition both manager-to-manager and to manager-to-agent requirements are expected to be more fully defined..

Mr. Whyman discussed the problem with X.509 and asymmetric algorithms. This means that there are institutional issues with choice of algorithms. The WG1 subgroup will need to look at the institutional issues on export controls, key length, and algorithms.

There were no comments on Section 3.2 of the working paper describing proposed WG2 tasking related to ATN security. Mr. Hennig pointed out that a Concept of Operations needs to be

drafted that can be given to IATA. WG2 agreed that the security paper as written is acceptable in that it does not constrain the work on putting IDRP authentication into the ICS SARPs.

Discussions moved to the system management proposed concept. Mr. Hennig raised a question about where management of airborne systems is required by CAA managers. WG2 accepted the proposed tasking assuming that it receives a more mature system management framework from WG1 in October.

After some discussion WG2 agreed to progress the work under the security framework and the systems management framework proposed within the two WG1 working papers. However, no explicit actions were needed to be completed between the June and October 1997 WG2 meetings.

Flimsy 2 was generated for submission back to WG1 indicating a tentative endorsement of the proposed security and systems management frameworks and WG2 points of contract were provided.

Mr. Saccone presented flimsy 3 that had been prepared by WG3. The flimsy raised issues on addressing related to the CM guidance material. A number of minor comments were provided to improve the CM guidance material text.

4. Review Status of Action Items from the Eleventh Meeting of WG2

Mr. Jones requested the group review the status of the open action items as documented in the WP 397 (i.e., report of the Eleventh WG2 Meeting). Included were two ongoing action items from prior to ATNP/2 as well as ten action items from the eleventh meeting of WG2.

ACTION: 7/22 Propose format for NSAP address repository on CENA archive

Status: Closed - see discussion on WP 393

ACTION: 8/7 Continue Simulation work to determine optimum value for congestion management beta value.

Status: open

ACTION: 11/1 Modify "WG2 CCB "Procedures Document to clarify its interface with the ATNP CCB procedure

Status: Closed – see discussion on WP 390

ACTION: 11/2 Clarify interaction between ATNP CCB and "WG2 SDM" regarding the handling of -1 maintenance and -2 new text.

Status: Closed – see discussion on WP 390

ACTION: 11/3 Input paper to next meeting on possible ATN sub-sets as described in ATNP/2 Report.

Status: Closed - see discussion on WP 401

ACTION: 11/4 Submit an IP on existing Fast Byte Standards/Protocols

Status: Closed – see discussion on WP 395

ACTION: 11/5 Submit information or offer deletion of future work item on investigation into provision of broadband transport

Status: No work – WG2 accepted to delete the action item unless/until the working group receives a contribution on this topic

ACTION: 11/6 Investigate the impact of the routing data traffic (IDRP ISHs) over the AMSS subnetwork in order to estimate the volume of ATN data with priority 14 on the AMSS subnetwork.

Status: Closed – see discussion on WP 408

ACTION: 11/7 Response to ATNP/2 report item 5.1.3, "review/evaluation of AMCP VDL Mode 3 design" (ATNP/2-28)

Status: Closed – see discussion on WP 387

ACTION: 11/8 Report on progress of development of HF datalink SARPs by AMCP

Status: open

ACTION: 11/9 Propose use of Type 2 BISPDU Authentication of IDRP data for CNS/ATM-2 SARPs

Status: open

ACTION: 11/10 Submit a WP on impact of use of multicast

Status: Closed – see discussion on WP 404

Mr. Crenais presented WP 393 proposing a form for registering NSAPs on the CENA server. Discussions centered on the form content and a discussion of the use of the CENA server. A question was raised whether this looked like a useful service. It was agreed that the service appeared very useful. Minor changes were proposed to the form content and Mr. Crenais subsequently provided a revised form that was endorsed by the working group.

Mr. Tamalet presented WP 390, a draft WG2 SARPs development mechanism procedure document. The paper proposed a process for defect reporting and change control for the package 2 ICS SARPs as well as for Package 1 from the view of supporting the ATN subject matter expert. The paper proposed a very formal process, similar to the former WG2 CCB. It was explained that the Package 1 engineering version of the SARPs is to be maintained by the ATN CCB while the Package 2 engineering version is to be maintained by the WG2. The group agreed that the word processing format for the Package 2 engineering version will be the same format as selected by the ATN CCB for maintaining the Package 1 engineering version ICS SARPs *(Rapporteur's note: This was consequently confirmed to be WordPerfect 7).*

ACTION ITEM 12/1: Mr. Tamalet will send an announcement to the internet technical list on the existence of the WG2 SDM list and will invite participation in the SDM activities.

5. Package-1 ICS Documentation

5.1 ICS SARPs

Mr. Herber presented WP 398. This information paper presented a listing of editorial defects found in an initial review of the latest version (8.0) of the ICS SARPs. This paper may reflect a defect submission to the ATN CCB after reviewing the current ICAO version of the SARPs as provided by the panel Secretary.

Mr. Graf reported that one editorial change listed in the working paper is not editorial but is rather technical. The APRL lists the ability to change the transport timers is mandatory and is listed in the table properly; but the text describing the transport timers in the baseline ICS SARPs (SV-5) did not get correctly updated as agreed at the October 1996 WG2 meeting. The proposed correction in WP 398 is not correct and must be revised to correct the text related to transport timers in the ICS SARPs.

ACTION ITEM 12/2: Mr. Graf will provide a defect report to the ATN CCB to correct the text describing transport timers.

Mr. Van Trees presented WP 410 providing defect reports/change proposal pending against the ICS SARPs (SV-5). He reported on potential defects in the following areas:

a) IDRP timer column in 5.8.3.4.14 currently has incorrect references to ISO 10747.

b) Recommended values for IDRP timers need to be added

c) Paragraph 5.8.3.4.3 has no ATN requirement that IDRP managed objects be implemented in Package-1, however we need separate values for IDRP timers on a BIS-BIS connections basis as would normally be provide had we required the support for the IDRP managed objects.

d) Defect Report/Change Proposal will be submitted to capture ICAO Secretariat editorial change in paragraph 5.4.3.8.2.2 (i.e., change "…will register…" to "…are intended to register…")

Mr. Jones pointed out that the IDRP timer table should include a ground-to-ground value. There also needs to be a note about which domain the IDRP timer value is to be used. Mr. Whyman pointed out that the IDRP timer settings should be on adjacency basis rather than subnetwork basis as proposed. Mr. Jones stated that maybe the timer on the aircraft should be always 180 seconds. Mr. Whyman stated that there also needs to be guidance material about timers. This is particularly true about what happens if there is no leave event implemented.

It was suggested that since IDRP timers on an adjacency basis is a mandatory part of IDRP, then it should be in the SARPs. The problem relates to the fact that it is part of the GDMO specification, which is not currently required by the ICS SARPs to be implemented. It was agreed that the timer functions should required by a "shall" statement in the SARPs. It was agreed to remove the "Domain" column from the IDRP timer table. A column would be added for "airborne/air-ground system capability" with an appropriate note to explain.

Mr. Van Trees updated the working paper and minor comments were provided on the revised version.

ACTION ITEM 12/3: Mr. Van Trees will generate a defect report/change proposal based on WP 410 and the comments of WG2 for submission the ATN CCB.

Mr. Paydar introduced WP 406. This working paper was prepared by SICASP and was presented by Mr. Paydar requesting that ATNP investigate a potential addressing problem raised by SICASP/6. Mr. Herber mentioned that some ATNP WG2 members had been aware of the issue and discussions had taken place immediately after SICASP/6 involving some technical experts from ATNP and SICASP. He explained that the results of the analysis (i.e., indicating that neither the Mode S subnetwork nor ATN SARPs need to be changed) was forwarded to the SICASP secretary. However, in order to provide a formal response from ATNP WG2 directly, Mr. Herber agreed to draft a flimsy. In the subsequent working group discussions, Mr. Bigelow pointed out that an X.25 gateway would provide the address mapping that would resolve the problem identified by the SICASP. Mr. Whyman commended that text should be added to point out that the air-ground router will not need to receive the address for the aircraft in the joint event. Rather the X.25 gateway will map between the aircraft's address and a ground X.25 address. The latter address would be contained in the joint event. Flimsy 1 was drafted to reflect these points and approved by WG2 as a response to the SICASP.

Mr. Kircher presented WP 408 in response to action item 11/6 from the Phuket WG2 meeting. This working paper describes the BIS-BIS exchanges across the air-ground path. Included were ISH PDUs, OPEN PDUs, UPDATE PDUs, and KEEPALIVE PDUs. The size of the routing information and the SNPDU were presented. The paper provided a scenario where AMSS is used for a trans-oceanic flight, including a one satellite-to-satellite (GES to GES) handover. Two cases for keepalive timer values were considered (i.e., 10 minutes and 3 hours). In the second scenario other subnetworks were consider at the beginning and at the end of the flight with AMSS

used for the middle of the flight. The results of both scenarios were presented in terms of average bits per second for all of the IDRP overhead traffic for the ground-to-air and for the air-to-ground directions. In the ground-to-air direction the average data rates for the IDRP traffic ranged from 0.167 bps to 0.748 bps. For the air-to-ground direction the average data rates for the IDRP traffic ranged from 0.123 bps to 0.698 bps. Mr. Hennig raised the issue that public X.25 ground subnetworks do not support fast select thus generally not allowing this feature to be used with AMSS where such a ground subnetwork is used between the a-g BIS and the AMSS GES. The working paper had assumed the use of fast select. It was believed this would result in some very modest increase in IDRP overhead from that presented in the working paper. The results of the working paper were included in flimsy 7 prepare for transmission to the AMCP.

Mr. Jones proposed a flimsy be prepared for submission to AMCP reflecting the conclusions of the paper (based on the 3 hour timer values) and to encourage the AMCP to further consider the definition of the AMSS requirements to insure the timely generation of the leave event Flimsy 7 was subsequently produced and approved by the meeting for submission to AMCP.

Mr. Tamalet presented WP 411 describing a potential ATN ICS defect due to the priority restrictions on the Mode S subnetwork. After some discussion it was determined that the there is no problem since the ATSC traffic class maps directly the allowed Mode S subnetwork priorities.

5.2 ICS Guidance Material

The comments from the previous WG2 meeting (March 1997) had been incorporated into the draft ICS guidance material. The previous editor of the ICS guidance material has changed jobs and will no longer be supporting ATNP.

It was pointed out by Mr. Jones that there was additional information about scalability presented at the WG2 meeting in Phuket (March 1997) that should be part of the overall ATN Manual.

Questions were raised about how the ICS guidance material would be fitted into the consolidate ATN manual. This will be solved through the work within WG 1.

5.3 Additional Validation Results

Mr. Whyman presented the WP 407 which presents validation results that indicate problems with the data link V.42bis compression algorithm. He presented the results of a comparison of different compression algorithms based on the ADS Europe trials recorded data.

The conclusions of the paper were that a different compression algorithm should be used instead of V.42bis.

Mr. Whyman indicated that there are several defects inherent in V.42bis is when applied to the ATN including:

a) V.42bis does not inherently flush the decompressor on the end of the packet resulting in delayed data output.

b) A bit error on the input bit string will generate errors in all subsequent strings delivered via that connection.

Mr. Hennig proposed that the DR/CP be created and that the proposed change include substitution of the "Deflate" compression algorithm which was also analyzed by Mr. Whyman and reported in the WP 407. Mr. Jones was concerned that this would require significant new text for the ICS SARPs as this algorithm is not defined by a document that can simply be reference (as was done for V.42bis). The working group concluded these V.42bis defects need to be addressed by the CCB by proposing the deletion of the option for V.42bis. The consensus of the working group was that a change proposal to add the 'Deflate' compression algorithm as a replacement for V.42bis should be prepared. However it was recognized that CCB would then need to determine if it is appropriate to include the replacement compression algorithm in the current ICS SARPs or to refer the matter back to WG2 for inclusion in the Package 2 ICS SARPs.

ACTION ITEM 12/4: A defect report for submission to the ATN CCB will be written by Mr. Whyman to address the issues uncovered with V.42bis. A change proposal will also be prepared recommending an alternative compression algorithm. *Note: These will be coordinated with Mr. Graf.*

5.4 Implementation Plans

Mr. Tamalet presented WP 391 describing the IDRP route server alternative to a full mesh routing. This paper describes an implementation option for the use of 'route server' as a means of achieving network scalability. The route server would receive from a number of other BISs the routing information. This would minimize the requirements on the other BISs by having the route server determine the optimum routes. The working paper recommended that guidance material should include information on the router server architecture. The group agreed that this material should be included along with ATN scalability information provided by Eurocontrol and U.S. at the March 1997 WG2 meeting.

Rapporteur's Note: Mr. B. Cardwell subsequently agreed to draft proposed guidance material for review at the next WG2 meeting on the subject of ATN scalability based on previous WG2 working papers.

Mr. Crenais reported that Eurocontrol has created an implementation task force and will develop a implementation plan for the complete European ATN network. Target date for the final report is the end of 1998.

Mr. Jones indicated that the decision by the FAA to fund ATNSI to allow them to proceed with the reference router and conformance test suite implementations was made subsequent the previous WG2 meeting in March 1997.

Mr. Whyman reported that the policy information base has now been implemented in the Eurocontrol Trials ATN Router. Flight trials are planned for the end of 1997 using Mode S and AMSS subnetworks and support the full SARPs communications stack and applications.

6. Package-2 ICS Documentation

6.1 Security Mechanisms

The only submission on this subject was the previously discussed WP 394.

6.2 Additional and/or revised SNDCFs for mobile and/or ground subnetworks

Mr. Paydar introduced WP 405 providing draft guidelines for aeronautical data link (Appendix to the report of Agenda Item 5 of AMCP/4). The AMCP requested that ATNP review this material. A copy of the draft guidelines for the proposed VDL Mode 4 (Appendix C to the report of Agenda Item 5 of AMCP/4) was also included to provide additional detail. The group concluded that appendix B (the data link guidelines) had little relationship to the ATN as it defined mainly air-ground data link specific broadcast services. Appendix C provided guidelines for the Mode 4 VDL, which is claimed to support the link-specific broadcast, services, link-specific addressed services as well at serving as an ATN subnetwork. However, the working group had a numerous issues with this material (with was not directly requested to be reviewed by the ATNP) and the claimed ability of VDL Mode 4 to support ATN services using dedicated gateways, etc. as an alternative to the intended ATN architecture. It was agreed to provide a response to the AMCP via the ICAO secretariat.

ACTION ITEM 12/5: A subgroup, lead by Mr. Cenais, was task to draft a response to AMCP and to electronically coordinate the response with the WG2 members. Mr. Jones, Mr. Hennig and Mr. Bigelow offered to provide inputs to Mr. Crenais by 15 July and the goal was to provide a fully coordinated flimsy to the WG2 rapporteur by July 31 delivery to the panel secretary.

Mr. Herbert presented WP 387 with comments on the VDL Mode 3 design guidelines. Mr. Herber stated that the technical comments in section 2.1 were limited to those relating to ATN and confirmed that no modifications are needed to the Draft ATN SARPs. The WP was approved with modifications. There was discussion on the need to encourage that the VDL Mode 3 subnetwork to support QoS reporting. Mr. Whyman pointed out that the router may use this to assign the appropriated supported ATSC traffic class to a given path. The working group decided the AMCP should be encouraged to include QoS reporting. An updated version of WP 387, with a flimsy cover, was provided later in the meeting and approved as flimsy 6. This flimsy will be submitted to the AMCP via the ATNP secretary.

6.3 QoS management functions

Mr. Moulton presented WP 400 and WP 409 both related to QoS management. WP 409 presented a general overview of QoS routing and the possible use of QoS routing within the ATN. WP 400 presented the IETF QoS routing mechanisms and OSPF extensions. It was noted by the group that QoS based routing adds significant complexity to the routers (and potentially subnetworks) while the benefits are not well understood, in terms of cost and performance. The working group was encouraged by the rapporteur to review the materials presented by the two working paper and consider the submission of papers to the next WG2 meeting on the need for QoS routing provisions as part of the Package 2 SARPs versus this topic being a longer term consideration as an enhancement to the ATN.

6.4 Systems Management

Mr. Akimoto presented WP 388, an information paper describing a network management plan in the future Japanese aviation network. The paper reported on requirements and associated issues for:

a) interoperability (CMIP and SNMP) – internally SNMP while international CMIP, use of SNMP/CMIP gateway
b) human machine interface for the network management applications
c) management functions

The first phase of the project (year 2000) covers the integration of ground-ground subnetworks. The second phase of the project (year 2004) will add integration of ATN and parts of the airline's networks. Based on a question from Mr. Hennig, Mr. Akimoto indicated the airline aspect is simply the exchange of management information with the airline's network manager.

Mr. Hennig presented WP 289 on ATN managed objects. This WP presented the plans of ATN Systems, Inc. to implement managed objects as part of the reference router implementation project. The paper lists the managed objects to be supported. Mr. Hennig reported that there is expected to be a future update to the ATNSI paper based on additional inputs from the airlines.

6.5 Financial Accounting Mechanisms including identification of Network Cost Parameters

No working papers were submitted directly against this agenda item. It is anticipated that the managed objects defined for Package 2 will included object(s) to support financial accounting. The working group will need to make certain the ICS overhead is accounted for when the managed objects are defined.

6.6 Multicast/Broadcast Functions

Mr. Moulton presented WP 404 describing the application of multicast. He explained the mechanisms being developed by ITU-T for CLNP multicast. After some discussion the working

group decided we needed to coordinate with WG1 on the requirements for such services to support Package 2 operational requirements. Flimsy 5 was prepared informing WG1 that WG2 does not plan to pursue the WG2 work programme items for multicast/broadcast services, broadband transport services, data/voice integration, or air-air communications until/unless operational requirements are forthcoming for Package 2 that would benefit from the support of the above technical capabilities within the ICS SARPs.

6.7 Transport Layer Fast Byte Protocol

Mr. Moulton presented WP 395 that covered the status of work within ITU-T on Transport and network fast type. The paper concluded that the fast byte provisions for network and transport layers are not applicable to the ATN. The working group agreed to not pursue this work programme item any further and this position was reflected in flimsy 5 submitted to WG1.

6.8 Broadband Transport

No working papers were submitted on this agenda item. WG2 agreed to not pursue this work programme item further unless operational requirements are forthcoming that would benefit from a broadband transport capability. This position was reflected in a flimsy 5 submitted to WG1.

6.9 Data/Voice Service Integration

No working papers were submitted on this agenda item. WG2 agreed to not pursue this work programme item further unless operational requirements are forthcoming that would benefit from data/voice service integration. This position was reflected in flimsy 5 submitted to WG1.

6.10 Air-Air Communications

No working papers were submitted on this agenda item. WG2 agreed to not pursue this work programme item further unless/until operational requirements are forthcoming that would benefit from an air-air communications capability. This position was reflected in flimsy 5 submitted to WG1.

6.11 ATN ICS Subsets

Mr. Jones presented WP 401 proposing GM be developed for the simplest ATN airborne router subset (non IDRP, one subnet, one end system and operating where there is a fully connected ground network).

Mr. Jones reported that the paper presents a way to progress the work and not a definitive solution. Mr. Hennig asked if the single proposed subset would be the only subset that could be

considered by the working group. Mr. Jones replied that the proposal was not intended to limit the working group and future proposals for other subsets should not be precluded. The meeting concluded that further investigation of the proposed subsetting concept will be considered.

6.12 Enhancements to the ICS based on New or Revised User Requirements

Mr. Camus presented WP 402 on the subject DLIC (i.e., CM) contact initiation. The paper proposed the use of logical addressing for the CM application in order to eliminate the need for a database of global CM addresses to be stored on the aircraft. The working group did not support the use of logical addressing for the CM application. However, it did recognize a potential need for guidance on the subject of CM implementations in order to keep the size of the airborne CM address database to a reasonable size. Two action items were identified.

ACTION ITEM 12/6: Paul Hennig will introduce the topic of CM addressing and CM address data base requirements at the JWG.

ACTION ITEM 12/7: Paul Hennig will prepare a policy statement from IATA on CM addressing to WG2/WG3.

6.13 Enhancements to the ICS based on Operational Experience

No working papers were discussed under this agenda item.

7. Future Work Plan

The working group reviewed the work programme and encouraged members to submit working papers against the work programme to the next meeting of WG2. It was noted that inputs from WG1 could be expected by the next WG2 meeting related to the security and systems management items and perhaps also a response to Flimsy 5 from this meeting of WG2.

7.1 Plans for 13th meeting of WG2

Mr. Jones presented WP 399, an information paper detailing the hotel and meeting arrangements that have been made for the next round of ATNP working group meetings. The U.S. will host the working group meetings at the Crown Plaza Redondo Beach and Marina Hotel in Redondo Beach, California. The cost of the guest rooms will be $99 (U.S.) per night plus tax. Working Group 2 will meet 27-30 October 1997. Working Group members were requested to make reservations directly with the hotel, not through a travel agent, indicating they will be attending the ATNP Working Group Meetings. Reservations must be made by 15 September 1997. The phone and fax numbers for the hotel are: +1 310-318-8888 (phone) and + 1 310-376-1930 (fax). There will also be a subsequent Working Group of the Whole meeting at this same location on 4-6 November 1997 were the output of the WG2 activities will be presented.

Mr. Paydar indicated that the ANC did not want to specifically indicate support for the November 1997 WGW meeting being held for the purpose of assisting the panel Secretary in addressing comments received from States and organizations in response to the State letter. He indicated that since only the core ATN SARPs are being distributed to States for comment, he was not certain how they should handle comments that might be submitted by States on the Appendix material.

The group also discussed the need to have complete guidance material out of the November 1997 WGW meeting with a proposal for ICAO publication. This was deemed a decision that would need to be taken up at the June 1997 JWG meeting.

8. Any Other Business

Mr. Paydar raised the issue on the likelihood the working groups will have completed their work programme in time for ATNP/3 in Nov. 1998. Opinions were expressed that the schedule is very tight but it may be possible to be ready in time. It was suggested by Mr. Jones that the Joint Working Group meeting (27 June, 1997) further consider this issue.

WP 392 was submitted by Mr. Tamalet, as an information paper. Since this same WP was being submitted to the Joint Working Group it was not presented or discussed within the WG2 meeting.

9. Conclusions and Action List

The 12th meeting of WG2 produced the following seven action items:

> **ACTION ITEM 12/1:** Mr. Tamalet will send an announcement to the internet technical list on the existence of the WG2 SDM list and will invite participation in the SDM activities.
>
> **ACTION ITEM 12/2:** Mr. Graf will provide a defect report to the ATN CCB to correct the text describing transport timers.
>
> **ACTION ITEM 12/3:** Mr. Van Trees will generate a defect report/change proposal based on WP 410 and the comments of WG2 for submission the ATN CCB.
>
> **ACTION ITEM 12/4:** A defect report for submission to the ATN CCB will be written by Mr. Whyman to address the issues uncovered with V.42bis. A change proposal will also be prepared recommending an alternative compression algorithm. *Note: These will be coordinated with Mr. Graf.*
>
> **ACTION ITEM 12/5:** A subgroup, lead by Mr. Cenais, were task to draft a response to AMCP and to electronically coordinate the response with the WG2 members. Mr. Jones, Mr. Hennig and Mr. Bigelow offered to provide inputs to Mr. Crenais by 15 July and the

goal was to provide a fully coordinated flimsy to the WG2 rapporteur by July 31 delivery to the panel secretary.

ACTION ITEM 12/6: Paul Hennig will introduce the topic of CM addressing and CM address data base requirements at the JWG.

ACTION ITEM 12/7: Paul Hennig will prepare a policy statement from IATA on CM addressing to WG2/WG3.

The meeting adjourned at 1530 hours on 26 June 1997.

ATTACHMENT 1

Agenda for the 12th Meeting of ATNP WG2 23-26 June 1997

0. Meeting Organizational Issues
1. Approval of the Agenda
2. Review and Approval of the report of Eleventh Meeting of WG2 (Phuket)
3. Inputs/Issues from other ICAO Bodies (e.g., Panel Secretary, CCB, WG1, etc.)
4. Review Status of Action Items from the Eleventh Meeting of WG2
5. Package-1 ICS Documentation
   - 5.1 ICS SARPs (note: the CCB is responsible for tracking and resolution of all defects related to the Package-1 ATN SARPs, therefore WG2 need only respond to requests from the CCB under this agenda item).
   - 5.2 ICS Guidance Material
   - 5.3 Additional Validation Results
   - 5.4 Implementation Plans
6. Package-2 ICS Documentation
   - 6.1 Security Mechanisms
   - 6.2 Additional and/or revised SNDCFs for mobile and/or ground subnetworks
   - 6.3 QoS management functions
   - 6.4 Systems Management
   - 6.5 Financial Accounting Mechanisms including identification of Network Cost Parameters
   - 6.6 Multicast/Broadcast Functions
   - 6.7 Transport Layer Fast Byte Protocol
   - 6.8 Broadband Transport
   - 6.9 Data/Voice Service Integration
   - 6.10 Air-Air Communications
   - 6.11 ATN ICS Subsets
   - 6.12 Enhancements to the ICS based on New or Revised User Requirements
   - 6.13 Enhancements to the ICS based on Operational Experience
7. Future Work Plan
   - 7.1 Plans for 13th meeting of WG2
8. Any Other Business
9. Conclusions and Action List

ATTACHMENT 2

LIST OF WORKING PAPERS

ATNP WG2 – 12th Meeting – Langen, Germany – 23-26 June 1997

No	Agenda Item	Presenter	Title
387	6.2	A. Herber	Review of Draft VDL Digital Link (VDL) Mode 3 Design Guidelines
388	6.4	M. Akimoto	Network Management Plan in Future Japanese Aviation Network
389	6.4	P. Hennig	ATNSI Proposed Managed Objects
390	4	J. Crenais	ATNP WG2 SARPs Development Mechanism (SDM) Procedures Document
391	5.4	J. Crenais	The IDRP Route Server Alternative to a Full Mesh Routing
392 (IP)	8	S. Tamalet	ATNP Archive and Electronic Mailing Lists
393	4	S. Tamalet	ATNP NSAP Address Repository
394	3	T. Calow	WG1 Flimsy on work program
395	6.7	J. Moulton	Analysis of Transport and Network Fast Byte
396	1	R. Jones	Proposed Agenda
397	2	B. Cardwell	Report of the Eleventh Meeting of WG2 (Phuket)
398 (IP)	5.1	A. Herber	Editorial Defects Identified in Version 8.0 of the ATN ICS SARPs
399	7	R. Jones	Meeting Arrangements Oct. 22 – Nov. 7, 1997
400	6.3	J. Moulton	Meeting Arrangements for Oct. 22 – Nov. 7, 1997
401	6.11	S. Van Trees	ATN Subsetting
402	6.12	P. Camus	DLIC Contact Initiation
403	3	M. Paydar	An Update from the Panel Secretary
404	6.6	J. Moulton	Application of Multicast & Broadcast to the ATN Internet
405	6.2	M. Paydar	Design Guidelines for VDL Mode 4
406	5.1	M. Paydar	A Potential ATN Addressing Problem (SICASP input)
407	5.3	T. Whyman	Data Link Compression Evaluation Report
408	5.1	T. Kircher	Routing Traffic over AMSS
409	6.3	S. Van Trees	QoS Provisioning in the ATN
410	5.1	S. Van Trees	ICS Defect Report/Change Proposal
411	5.1	S. Tamalet	Potential ATN ICS SARPs defect due to the priority restrictions on the Mode S Subnetwork

Flimsy 1 – to SICASP: responding to the input from the secretary on the issue raised by SICASP on ATN addressing

Flimsy 2 – To WG1: expressing the position of WG2 on the flimsy received from the WG1 Rapporteur on systems management and security

Flimsy 3 – From WG3: raising an issue related to CM issue

Flimsy 4 – To AMCP: responding to the input from the secretary requesting ATNP input on the design guidelines for navigation/surveillance data link (and VDL Mode 4). This flimsy was to be prepared by the end of July 1997 for submission to the ATNP secretary.

Flimsy 5 – To WG1: informing WG1 that WG2 does not plan to pursue the WG2 work programme items for multicast/broadcast services, broadband transport services, data/voice integration, or air-air communications until/unless operational requirements are forthcoming for Package 2 that would benefit from the support of the above technical capabilities within the ICS SARPs. WG1 is requested to provide a definition of any new operational requirements associated with Package 2 as soon as practical.

Flimsy 6 – To AMCP: provide inputs to AMCP on the WG2 review of the VDL Mode 3 design guidelines.

Flimsy 7 – To AMCP: providing the results of the analysis of routing overhead as would be applicable to delivery via AMSS. Also discusses the need for mobile subnetworks to issue join and leave events.

ATTACHMENT 3

WG2 12th Meeting Attendance

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