

Report of the 17th Meeting of ATNP WG2
19-22 January 1999
Honolulu, Hawaii, USA
Proposed Final

0. Meeting Organizational Issues

Mr. Jones, Rapporteur opened the meeting. Mr. Jones welcomed the members and advisors to the meeting hosted by the U.S. FAA. He described the administrative arrangements for the meeting including the office facilities provided in support of the working group meetings. After introductions of the WG2 participants, the working papers were collected and assigned working paper numbers. The list of working papers is provided as attachment 2.

1. Approval of the Agenda

The agenda, WP481 and attachment 1 to this meeting report, was reviewed approved without any changes.

2. Review and Approval of the report of 16th Meeting of WG2

The group reviewed WP482, the report of the 16th meeting of WG2 held in Bordeaux, France. The group approved the report with only minor correctors. It was noted that although Mr. Antonucci had been confirmed as the Package-2 ICS editor at the Bordeaux meeting, he will not be able to continue in that role. Mr. Moulton to serve as the Package-2 editor, at least for the interim.

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

WP489 presented an update from the panel secretary. However, Mr. Paydar was not in attendance at the WG2 meeting. Discussions within WG2 focused on the schedule and required work to get ready for ATNP/3. Mr. Jones requested that the working group be prepare to identify the critical Package 2 enhancements and an estimate on when the draft technical provisions and validation data will be ready for submission to ICAO in preparation for ATNP/3. Mr. Jones agreed to prepare Flimsy 1 to convey WG2 position on ATNP/3 preparation and schedule to WG1. Flimsy 1 is provided as Attachment 4 to this meeting report. WP489 was subsequently discussed during the joint WG2/WG3 session. The secretary's input indicated that a 7-18 February 2000 slot is being held for ATNP/3 but the dates will not be firmed up until the 3rd or 4th quarter of 1999. He indicated that the inputs of the panel are needed as to if the technical provisions will be adequately developed and validated in time to support the proposed ATNP/3 dates. There was a discussion on the schedule for meetings leading up to ATNP/3. Working group meetings are already planned for May 1999 and September/October 1999. WG2/WG3 agreed to have the goal of producing the complete, mature draft 'Package-2' SARPs and Doc 9705 enhancements approved out the October 1999 WG meetings. Furthermore WG2/WG3 agreed on a one week WG2 meeting starting on 29 November 1999,

probably at ICAO headquarters in Montreal. This WG2 meeting will review/approve any validation results and any needed changes/corrections to the materials submitted to the secretariat out of the October WG2 meetings.

WP490 raised an issue on the SNDCFs for LANs. Mr. Tamalet offered to prepare flimsy 2, based on an email input from Mr. Graff with additional inputs from other WG2 members. The working group reviewed the flimsy, which included proposed text for two related PDRs, for changes to Sub-Volume I and Sub-Volume V. These PDRs would introduce a reference to ISO/IEC 8802-2. The group agreed that the title on ISO/IEC 8802-3 also needed to be corrected in Doc 9705, Sub-Volume I. The working group supported the proposed PDRs.

ACTION 17/1 – Mr. Tamalet to prepare two PDRs based on the proposal in flimsy 2.

As part of the discussions on WP490 Mr. Moulton raised an issue with how to handle updates by ISO and ITU-T to baseline standards referenced by the Doc 9705. Mr. Moulton offered to prepare flimsy 3 to propose text for two notes to be added to Doc 9705 Sub-Volume I on how to handle revised versions of ISO/ITU-T standards. The working group agreed on the text of the notes with some editorial revisions.

ACTION 17/2 – Mr. Moulton to submit a PDR to propose the addition of notes to SV-1 based on the proposal in flimsy 3.

WP491 was introduced, but discussion was deferred until the WG2 members had an opportunity to review the paper. The topic of the WP was discussed with the AMCP WG-D subgroup during the coordination session and the discussions are covered under agenda item 6.4 below.

4. Review Status of Action Items from the Previous Meetings of WG2

ACTION 14/4: Mr. Moulton, the WG2 Point of Contact for ICS security, will coordinate with WG1/SG2 and WG3/SG3 to ensure the development of ICS security requirements consistent with the system level requirements and the definition of X.500/X.509 services being defined by these groups.

Status: Closed: No papers have been exchanged. However the participation of some WG2 members in the WG1 & WG3 activities serves as the means of coordination.

ACTION 15/4: Mr. Bigelow will provide information to the Bordeaux WG2 meeting on the status of Gatelink AEEC standards and industry implementation plans. This action was continued to the Honolulu WG2 meeting.

Status: Closed: AEEC has a draft spec. that includes a 'Ground Link', using an r.f. spread spectrum solution. However, only the file server application is being considered which will not be based on the use of ATN. 'Ground Link' will work

beyond when the aircraft is parked at the gate. Mr. Hennig indicated that some airlines are still working on a gatelink for general purpose communications, but not specifically focused on use as an ATN subnetwork. He noted that any consideration of the use of these industry links within the ATN should be a post ATNP/3 consideration.

ACTION 16/1: Mr. Jones to inform WG1 of the position of WG2 relative to the WG1 rapporteur input documented in WP-464.

Status: Closed

ACTION 16/2: Mr. Graf to provide an input to the CCB conveying the WG2 position on PDR 98090003 as described flimsy 1.

Status: Closed: WG2 input submitted to CCB and the PDR is now resolved

ACTION 16/3: Mr. Graf was to prepare a submission to the CCB to convey the WG2 inputs on PDR 98090010.

Status: Closed: WG2 input submitted to CCB and the PDR is now resolved.

ACTION 16/4: Mr. Graf and Mr. Whyman are to prepare a PDR for submission to the CCB to provide clarification that it is only the final Deflate Data block that can be deleted.

Status: Closed: PDR submitted to CCB. It was discussed and resolved at 18 January 1999 CCB meeting. The resolution has the potential of creating an interoperability problem if implementations are built according to the existing baseline ICAO Doc 9705. However, it was determined by the CCB to not change the version number.

ACTION 16/5: Mr. Graf to prepare a PDR to modify a note in the Doc 9705, Subvolume 5, to indicate there is a need for the Deflate decompressor to have the 32 KByte buffer but not the compressor.

Status: Closed: PDR submitted to CCB and the PDR has been resolved.

ACTION 16/6: Mr Whyman to prepare proposed ICS changes to provide Package-2 enhancements derived from the proposal in WP-471 to address the issue of the possible negative effects that could results from rapidly changing mobile subnetwork connectivity.

Status: Open

ACTION 16/7: Mr. Whyman to prepared a PDR proposing modifications to the VDL SNDCF. The PDR should also indicate any needed changes to the VDL Mode 2 SARPs.

Status: Closed: A PDR has been submitted to CCB but not resolved and WG2 WP 494 and WP 495 propose a solution to the defect for the consideration of the working group.

ACTION 16/8: Mr. Graf will draft a proposal, against PDR 98060006, for the detailed changes to the ICS SARPs to address items a, c and d in the recommendations of WP-471. Mr. Graf will coordinate the proposed changes with Mr. Whyman before submission to the CCB.

Status: Open: Additional inputs from the SME were provided to the meeting as WP404

ACTION 16/9: Mr. Jones to submit flimsy 1 to WG1 and the CCB.

Status: Closed

ACTION 16/10: All WG2 members to review the needed enhancements to the ICS SARPs (i.e., Doc 9705, Subvolume 5) to support the planned 'Package 2' enhancements (e.g., new air-ground SNDCFs, secure exchange of routing information, etc.) and to submit proposals for revisions to Doc 9705 for review at the next WG2 meeting.

Status: Closed

5. Package-1 ICS Documentation

5.1 ICS SARPs (consideration of requests from the CCB and/or ICS SME).

Mr. Schade presented WP500, the Sub-Volume V SME report. Mr. Schade was standing in for Mr. Graff at the 18 January 1999 CCB meeting as well as providing the SME inputs to the WG2 meeting. He reported 22 of the PDRs related to ICS SARPs (Doc 9705 SV-5) have been resolved. Two have the status of 'Accepted' and one has been recently been 'Submitted.'

There was considerable discussion on Attachment A to WP500, a PDR raising an issue on the over specification of SNSDU requirement. While the focus of the PDR was a specific requirement of Doc 9705, Sub-Volume V (ICS) that requires routers to support a minimum SNSDU size of 1100 octets. This was based on a TPDU size of 1024 octets plus an uncompress CLNP header. The PDU contended that this requirement would unnecessarily limit the available technical solutions for VDL Mode 3. Mr. Jones indicated that this is actually a more general issue not just limited to the VDL Mode 3 context. It was noted that the current ICS requirement dates back several years and perhaps was based on an assumption that all ATN mobile subnetworks would use ISO 8208 subnet access protocol. Mr. Jones noted that this was an explicit requirement of the old ATN Manual, but is not required by the ATN SARPs. Mr. Moulton noted that the Doc 9705 requirement could be overly restrictive also for future ground-ground subnetworks.

However, there are a number technical issues surrounding this subject having to do with support for CLNP segmenting vs. non-segmenting subsets. Mr. Moulton offered to prepare Flimsy 4, with inputs from other WG2 members, to capture the issues raised by this subject. This flimsy would then be reviewed by WG2 and revised as necessary in order to support the discussions with the AMCP WG-D during the joint session, held later during the same week. Flimsy 4 recommended that WG2 undertake an analysis to assess the impact of removing the recommendation that: a) the non-segmenting subset of CLNP be used for NSDUs of 1024 octets or less; and b) changing from a requirement to a recommendation that SNDCFs support a segment size of 1100 octets or greater. The working group supported the recommendations of Flimsy 4 and Mr. Moulton offered to serve as the focal point for developing the proposed response to the PDR. WG2 members are ask to coordinate with Mr. Moulton.

ACTION 17/3 – Mr. Moulton to coordinate with the WG2 members and develop a response to PDR 99010001. The response to be provided to the Sub-Volume V SME by 2 April 1999.

Mr. Schade introduced Attachment B to WP500 raising two possible changes to the ICS. The first issue was related to changing the requirement for the CLNP Echo Request function from optional to mandatory. Mr. Tamalet presented WP502, which discussed the CLNP Echo Request issue in more detail. The working paper proposed specific changes to the ICS SARPs to require the Echo Response function and to also properly set the security parameters to insure the proper operation of the function.

ACTION 17/4 – Mr. Tamalet to prepare a PDR based on WP502 for submission to the Sub-Volume V SME.

The second issue raised by WP500 Attachment B related to the route initiation emergency mode. This would allow route initiation via an unrecognized aircraft. This creates a potential security problem. The group agreed that a PDR should be submitted to proposed deletion of the emergency mode.

ACTION 17/5 – Mr. Whyman to prepare a PDR based on Attachment B to WP500 for the emergency mode issue.

Mr. Schade presented Attachment C to WP500 raising an issue where the IDRP connection is terminated when the subnet connection is still in place. Mr. Hennig indicated that he believed, but is not certain, that AEEC has looked at this issue. There was a discussion on how to best to restart IDRP. The group felt that a PDR needs to be generated. The working group felt that the first approach proposed in Attachment C for resolving the problem is not a good solution and other alternative solutions should be pursued.

ACTION 17/6 – Mr. Briand will prepare a PDR on the issued raised by WP500 Attachment C and submit it to Mr. Graf the Sub-Volume V SME.

Mr. Tamalet presented WP504 on SME inputs on PDR 98060006 that included a copy of a series of e-mail exchanges between a number of the WG2 technical experts. This paper was a follow-on to materials and recommendations in WP471 discussed at the Bordeaux WG2 meeting.

ACTION 17/7 – Mr. Graf will coordinate with the WG2 experts with the goal of reaching a consensus by 2 April 1999 on the needed changes to the ICS SARPs to respond to PDR 98060006. The proposal is then to be submitted to the CCB.

Mr. Adnams introduced WP494 and WP495. These papers presented proposed changes to the ICS SARPs and Guidance Material, respectively, related to support for VDL Mode 2 handoffs. WP495, the proposed changes to the guidance material, was presented first. Mr. Adnams described the problem, which was a follow-on to an issue raised by WP469 at the WG2 meeting in Bordeaux and in response to Action 16/7 from that meeting. The paper proposes the addition of a handoff event between the VDL Mode 2 subnetwork and the SNDCF. This would be in addition to the join and leave events already defined in the Sub-Volume V. WP494 addressed two changes to SV-5. These were related to handling of the Local Reference status during handoffs and the requirements for the handoff event. These same papers were input the previous week to the AEEC 631 and also AEEC 637 will be looking at the material two weeks after the WG2 meeting. The AEEC groups will need to decide which of the local implementation alternatives to use. The working group also reviewed WP505 providing comments from Mr. Graff, the Sub-Volume V SME, against WP494. Also coordination with the AMCP is needed to ensure consistent changes to the VDL Mode 2 SARPs. Mr. Adnams prepared a Flimsy 5 to introduce WP494 and WP495 to AMCP WG-D during the joint session later in the week. Also WP505 was included, which included proposed amendments to WP494.

In the joint session the AMCP secretary explained that the current AMCP work programme does not include any continued work on VDL Mode 2. It was not clear from flimsy 5 and the related working papers if changes to the VDL Mode 2 SARPs are needed or not. This will need to be further investigated. Also the AMCP and ATNP secretaries will meet to consider the possibility of developing a proposal to the next AMC Panel meeting to recommend appropriate work programme item(s) to allow the AMCP working groups to address implementation/integration issues.

The working group reviewed WP506 submitted by Mr. Cardwell concerning an Application/Transport frozen reference timing problem. Mr. Cardwell was not present at the WG2 meeting. This paper described a problem experienced during the ADS Trials in Europe where a TP4 collection has been dropped from one end and the other end still believes the connection is valid (i.e., has not yet been closed based on its inactivity timer settings). Mr. Moulton commented that it appears that the TP4 implementation being described in the paper is not consistent with ISO 8073. In particular he indicated that the frozen reference timer appears to have been incorrectly set (i.e., it must be longer than the value set for the inactivity timer). He also had a concern with using the lowest available

reference number rather than a preferred approach of using a randomly selected reference number.

ACTION 17/8 – Mr. Moulton to coordinate with Mr. Cardwell on the issues raised by WP506.

5.2 Additional Validation Results

No working papers were presented under this agenda item.

5.3 Implementation Plans

Mr. Itano presented WP503, an information paper describing the Japanese ATN development and implementation plans. The paper described the plans to carry out a full scale ATN implementation commencing in 2005. In response to a question from Mr. Cenais, Mr. Itano indicated that Japan is cooperating with the U.S. on ATSMHS and AIDC with plans for operational trials.

Mr. Adnams gave a verbal report on various implementation activities in Europe. He explained how a number of on-going near term activities will feed into the Link2000+ Programme. Mr. Adnams then presented WP496, an information paper on the Link2000+ Programme. The following is a summary of Mr. Adnams inputs:

Flight Trials of ATN and Mode S

The Flight trials of ATN and Multiple Subnetworks (FITAMS) has reached the point where many successful flights have been conducted with the trials aircraft (BAC1-11) with ATN running over AMMS simultaneously with Mode S using French and German Mode S facilities (UK will be added next). The ICAO 9705 compliant 7 layer ATN stack supported ADS and CPDLC operations seamlessly routing over the 2 subnetworks when flying in and out of Mode S coverage using AMSS as a backup (this provides validation evidence for active use of the ATN security label feature). Full trials report will be available by end February.

PETAL II Extension

The PETAL II extension (PIIe) project had its 4th Integration Team meeting in Los Angeles Jan 13/14. PIIe will implement en-route CPDLC on aboard 4 American Airlines 767 aircraft which will fly in Maastricht airspace where the ground part of the PIIe service will be operated. The French centre Riems will now also join the project. The PIIe service specification is now finished and includes the FAA Build 1/1A service as subsets. Prior to operational flights with the American Airlines aircraft, the applications on board the BAC1-11 previously used in FITAMS will be upgraded to implement the PIIe service. On the ground the PIIe service will be simulated at Eurocontrol Bretigny and BAC1-11 will fly against this in 2Q 99. This will be followed by flights in Maastricht against the operational PIIe implementation there.

PROATN/EOLIA

PROATN will deliver ICAO 9705 compliant pre-operational (rather than “trials”) systems by mid 99 and these will be used in the PIIe project at Maastricht. In June 99 there will be a major demonstration of the EOLIA services using the PROATN infrastructure at the Paris airshow.

Conformance Test Suite Testing

The ATN trials facility at Bretigny will be used to prove the ATNSI Conformance Test Suite (CTS) product in mid. 99. The CTS will then be used in the PIIe project for certification of the Collins avionics.

CAERAF

The Common American European Reference ATN Facility (which can be viewed as a further development of the CTS) development contract has been signed.

LINK 2000+ Program (L2K)

This program is focused on the implementation of ATN based data link services in Europe. This new program is intended to consolidate a number of European initiatives under a single implementation program. This is still in the proposal phase with planned program approval in late 1999. It covers the time frame through 2007 and will be linked to U.S. data link activities. Also worthy of note was that the L2K drafting group will be chaired by KLM and that the Build 2 Development Team (FAA+Europeans+Airines+Service providers) starts in April “on the back of the Petal Implementation Team (PIT). This is our suggestion in response to the FAA letter sent to Eurocontrol, Navcanada, UK and France to set up an Implementation Team for the development and implementation of operational services using ATN.

Mr. Jones gave a verbal report on the U.S. CPDLC implementation plans. He described plans for a CPDLC Build 1 with a very limited CPDLC message set planned for operational use at the Miami enroute ATC center starting in mid-2002 with a national program, including an expanded CPDLC message set (Build 1A), being implemented starting about 18 months later. Builds 1 and 1A will rely on a service provider for the air-ground subnetwork, using VDL Mode 2, and the air-ground BIS. The FAA will implement the enroute CPDLC end system, context management servers and ground-ground ATN BISs. CPDLC Build 2 is planned for implementation starting in approximately 2005 (or beyond). Build 2 will support a substantially expanded CPDLC message set and the FAA’s ground infrastructure will include support for additional air-ground subnetworks (e.g., FAA operated VDL Mode 3), air-ground BISs, and ATN Package-2 enhancements for security and systems management.

Mr. Crenais gave a verbal report indicating that NATS, DFS and STNA are continuing work on the ACCESS project, that was previously reported to WG2. The results of ACCESS will be input into the Link2000 program. The results will be made available at

the next WG2 meeting. He also reported the French program is focused on pre-operational trials up until 2003 and there is currently a proposal for an operational CPDLC service in France starting in 2003, but that proposal is awaiting approval. He also briefly reported on the SPACE (Study and Planning of AMHS Communications in Europe) project by a consortium (yet to be formally established) between Eurocontrol, France (STNA), Germany (DFS), Spain (AENA) and United Kingdom (NATS), under a project leadership by STNA. He indicated this project's focus is ATSMHS and that Mr. Piram, who participated in WG3, can provide further information on this project.

Mr. Hennig reported he expects that United Airlines will shortly made a decision to have 52 new Airbus aircraft equipped with ATN and he also anticipates decision to equip 20 new Boeing aircraft with ATN. Also United is planning a ground infrastructure for AOC services via ATN.

6. Package-2 ICS Documentation

<Rapporteur's Note - Subsequent to the conclusion of the WG2 meeting, the CCB chairman confirmed that the changes for the 1999 update to Doc 9705 will be finalized out of the Naples CCB meeting. Therefore, the existing Doc 9705 with the proposed changes from the CCB will be the baseline from which WG2 should develop the proposed Package 2 enhancements.>

6.1 Security Mechanisms

Mr. Bigelow reported to the joint WG2/WG3 session on the progress of the security subgroup of WG1. He reported that NASA Ames Research Center is leading the effort to review and recommend a suitable cryptographic algorithm. He reported that papers into the subgroup reviewing the available algorithms are expected by the March 1999 time frame and a recommended algorithm by the May 1999 working group meetings. He reported that a draft 9705 Sub-Volume VIII (security) and proposed enhancements to Sub-Volume I and core SARPs are being input to the WG1 meeting (held the following week in Honolulu). Mr. Jones reported that the U.S. (FAA and NASA) are sponsoring work for both the development and validation of the ATN security provisions. Mr. Mittaux-Biron reported that CENA will be undertaking validation of the ATN security provisions.

Mr. McParland presented WP492 on mutual authentication service for IDRPs air-ground connections. The paper discussed single entity vs. mutual authentication. The current requirement within ATNP is for single entity authentication where ISO 10747 assumes mutual authentication. After some discussion the working group felt that WG1/SG2 needed to review the alternatives discussed in the paper before WG2 acts upon the proposals in the working paper.

Mr. McParland presented WP488 on an alternative for use the symmetric cryptographic keys for IDRPs updates PDUs. Again the working group felt that this working paper needed to be reviewed by WG1/SG2 before further consideration by WG2.

WP493 was not presented as Mr. McParland indicated that it would be more appropriate for WG1/SG2 to review this paper before being considered by WG2.

6.2 Systems Management

Mr. Moulton reported, at the joint session of WG2 and WG3, that the systems management subgroup has not met since Bordeaux. The subgroup will be meeting during the second week in Honolulu where they will be reviewing the revised Concept of Operations and draft SARPs for the protocols and managed objects. A small group of experts were to meet the following Monday through noon Wednesday and the full systems management subgroup on the following Wednesday afternoon through Friday. Mr. Moulton indicated he expected a determination of what will be SARPs vs. Guidance by the end of May 1999.

Mr. Adnams presented WP497. This was an information paper describing a fault management requirements analysis. This paper provided a proposed fault management concept. It concerned the identification of typical faults that might occur in an internet, how the source is diagnosed and thereby deriving the requirements for managed objects and tools to support fault management. The paper described 16 common mode failures, associated with the internet communications service and 16 specific triggers. The paper identified 28 requirements for the management information base, 4 requirements on implementations, and 7 requirements for network manager tools and procedures. Also tables were included to provide mapping between failures, triggers and requirements. This paper was also being submitted to the systems management subgroup and will likely be used as the basis of guidance material and from the basis from which SARPs requirements may be derived.

Mr. Adnams presented WP498, an information paper on network management tools. The paper described the generic tools that will be needed for system management. The paper reported on work in progress.

Mr. Tamalet presented WP501 describing ATN accounting management requirements. Included was a discussion of requirements for filtering of the subset of traffic for which accounting must be performed, segregation of the accountable traffic into flows that can be accounted separately, and logging for each individual traffic flow. Mr. Jones noted that WG1 needs to be considering the high level alternatives and issues associated with ATN accounting management. However, no formal WG2 input to WG1 was planned for the following week's WG1 meeting.

6.3 Multicast/Broadcast Functions

There were no new working papers submitted under this agenda item. Mr. Hennig reminded the group of the need for a working paper to ATNP/3 discussing the multicast architecture.

ACTION 17/9 – Mr. Moulton to prepare and coordinate a first draft WP for ATNP/3 on multicast architecture for review by WG2 in May 1999 with an final WP out of the Oct. WG2 meeting.

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

Mr. Jones presented WP483, WP484, WP485 and Mr. Moulton presented WP486. All of these working papers were related to behavior of mobile subnetworks in the timely reporting of the loss or establishment (or re-establishment) of subnetwork connectivity. The discussions on WP486 are covered under agenda item 6.6 below. WP483 served to introduce the three other working papers. The ADSP has established very stringent requirements for the continuity of service and the loss of service in support of the safety related ATS applications. The requirements must be addressed at the internet level and by each subnetwork if the overall end-to-end operational requirements are to be satisfied. There are several key areas where specific requirements will need to be levied on the subnets in order for the overall end-to-end communications service to be consistent with the operational requirements.

WP484 dealt with enhancing Doc 9705 to place requirements on mobile subnetworks as to the issuance of Join and Leave Events. The concern being addressed is one where the delayed issuance of leave events can result in a degraded continuity of service. As a result the mobile subnetwork SARPs, being produced by the AMCP, may need to be enhanced to support additional requirements in this area. Included would be a requirement for the maximum latency allowed for the issuance of Leave Events tied to the ATSC traffic class supported by the mobile subnetwork. The working group generally agreed with the proposal and endorsed progressing the work in this area for inclusion in the Package-2 enhancements Doc 9705, Sub-Volume V. The working group also agreed that coordination with the AMCP will be needed (see below).

WP485 dealt with the characteristics of the mobile subnetworks under radio frequency channel fading conditions. The paper proposed that subnetworks should suppress the issuance of join events when the air-ground connectivity is unstable. The group agreed that further investigation is needed on what would be the most appropriate requirements that would be placed on mobile subnetworks in order to be able to ensure the end-to-end communications service will be consistent with the operational requirements as expressed by the ADSP.

Mr. Jones produced flimsy 6 for coordination with the AMCP on the subject of the mobile subnet generation of join and leave events and subnetwork behavior at edge of subnetwork service area. This flimsy served to introduce WP484 and WP485 as work in progress within ATNP WG2 that the AMCP should be aware of. Mr. Witzgen, the AMCP

secretary, asked if he should provide WGA of this material. Mr. Jones indicated that a response to a WGA communiqué had already included some of an earlier version of the materials.

WP491 provided inputs from the AMCP WG-D on access to VDL Mode Broadcast Services. The VDL Mode 3 subnet will support both addressed and broadcast services and the SNDCF will need to be able to invoke the desired subnet service. The working group briefly reviewed the paper, including the draft SNDCF requirements. A subsequent joint session was held with experts for the AMCP WG-D where this working paper was further discussed. It was concluded that additional technical review was necessary and therefore will need to be further considered at the next WG2 meeting.

ACTION 17/10 – ALL – Submit results of further consideration of WP491 to next WG2 meeting, Naples, May 1999.

There was a discussion on the need to define an ATM SNDCF. There had been inputs on an ATM SNDCF at previous WG2 meetings. Mr. Adnams and Mr. Crenais indicated a need to progress the work. However, the group concluded that proposed and validated SARPs enhancements for the ATM SNDCF would probably not be forthcoming until after ATNP/3.

Mr. Jones indicated that discussions are needed with the AMCP to identify the schedule for the development and approval of new mobile subnetwork SARPs as this will directly relate to the need for updates to the ATN SARPs and Doc 9705 in the areas of SNDCF definition (Sub-Volume V) and priority mapping (Core SARPs and Sub-Volume I). This was raised at the joint session with the VDL subgroup of the AMCP WG-D. Mr. Witzen, the AMCP secretary indicated that the AMC Panel will probably meet in the April 2000 time frame. It is a goal to have the VDL Mode 3 SARPs ready for approval at that panel meeting. Mr. Witzen also confirmed that the AMCP has limited their considerations of VDL Mode 4 to supporting only surveillance applications. Specifically ADS Broadcast and ADS contract. Mr. Jones noted that the ATN definition of traffic types does not allow for identification down to the specific application level and therefore the routing decisions of the BISs would not be able to control/restrict the forwarding of traffic specific to just the ADS application. Thus the VDL Mode 4 subnetwork, as being defined by the AMCP, cannot be considered a valid ATN mobile subnetwork for support of ATSC within the context of current capabilities of the ICS.

6.5 ATN ICS Subsets

No working papers were presented under this agenda item.

6.6 Enhancements to the ICS SARPs/GM based on New or Revised User Requirements

Mr. Moulton presented WP486 related to the use of COTP selective acknowledgements. The working group agreed that it would be appropriate to enhance transport service to better cope with the loss of TPDUs. Techniques that should be considered, for ICS Package-2, include the use of selective acknowledgements, as proposed in WP486, and/or the use of adaptive transporter timers.

ACTION 17/11 – ALL - submit proposals and the results of analysis from investigations into candidate enhancements to Doc 9705 requirements for the transport service to better cope with the loss of TPDUs.

6.7 Enhancements to the ICS SARPs/GM based on Operational Experience

No working papers were presented under this agenda item.

7. Future Work Plan

7.1 Plans for 18th meeting of WG2

Mr. Cecere presented WP487 describing the arrangements for the next working group meetings will be in Naples, Italy at the:

Royal-Continental Hotel
Via Partenope, 38
80121 Naples
Italy

Tele: +39 081 7644621
Fax: +39 081 7644616

Reservations must be made by 23 March 1999.

WG2 will meet starting at 0900 on 18 May (Tuesday) and continuing through 21 May 1999 (Friday). It is anticipated that WG3 will meet concurrently with WG2 and WG1 will meet during the beginning of the second week in Naples.

Generally, two sessions (meetings) will occur in parallel during the two week period planned for meetings in Naples. The overall schedule for meetings in Naples is summarized below:

| Day of Week/Date | Session-I | Session-II | |
|----------------------------------|-----------------------|-----------------------|--|
| Monday PM 5/17 | CCB-9 | | |
| Tuesday 5/18 (Combined WG2/3) | WG2-18 (1400-1530) | WG3-16 (1400-1530) | |
| Wednesday 5/19 | WG2-18 | WG3-16 | |

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|-----------------------------------|-----------------------|--------|--|
| Thursday 5/20 | WG2-18 | WG3-16 | |
| Friday 5/21 | WG2-18 | WG3-16 | |
| Saturday/Sunday | | | |
| Monday 5/24 (Coordinate WG2/3) | WG1-15 (1400-1700) | WG3SG1 | |
| Tuesday 5/25 | WG1-15 | WG3SG1 | |
| Wednesday AM 5/26 | WG1-15 | WG3SG1 | |
| Wednesday PM 5/26 | WG1SG2 | JSG | |
| Thursday 5/27 | WG1SG2 | JSG | |
| Friday AM 5/28 | WG1SG2 | | |

Notes: WG1/SG2 deals with ATN security requirements
JSG deals with ATN systems management requirements

8. Any Other Business

No working papers were presented under this agenda item.

9. Conclusions and Action List (including open actions from previous meetings)

ACTION 16/6: Mr Whyman to prepare proposed ICS changes to provide Package-2 enhancements derived from the proposal in WP-471 to address the issue of the possible negative effects that could result from rapidly changing mobile subnetwork connectivity.

ACTION 16/8: Mr. Graf will draft a proposal, against PDR 98060006, for the detailed changes to the ICS SARPs to address items a, c and d in the recommendations of WP-471. Mr. Graf will coordinate the proposed changes with Mr. Whyman before submission to the CCB.

ACTION 17/1 – Mr. Tamalet to prepare two PDRs based on the proposal in flimsy 2.

ACTION 17/2 – Mr. Moulton to submit a PDR to propose the addition of notes to SV-1 based on the proposal in flimsy 3.

ACTION 17/3 – Mr. Moulton to coordinate with the WG2 members and develop a response to PDR 99010001. The response to be provided to the Sub-Volume V SME by 2 April 1999.

ACTION 17/4 – Mr. Tamalet to prepare a PDR based on WP502 for submission to the Sub-Volume V SME.

ACTION 17/5 – Mr. Whyman to prepare a PDR based on Attachment B to WP500 for the emergency mode issue.

ACTION 17/6 – Mr. Briant will prepare a PDR on the issues raised by WP500 Attachment C and submit it to Mr. Graf the Sub-Volume V SME.

ACTION 17/7 – Mr. Graf will coordinate with the WG2 experts with the goal of reaching a consensus by 2 April 1999 on the needed changes to the ICS SARPs to respond to PDR 98060006. The proposal is then to be submitted to the CCB.

ACTION 17/8 – Mr. Moulton to coordinate with Mr. Cardwell on the issues raised by WP506.

ACTION 17/9 – Mr. Moulton to prepare and coordinate a first draft WP for ATNP/3 on multicast architecture for review by WG2 in May 1999 with a final WP out of the Oct. WG2 meeting.

ACTION 17/10 – ALL – Submit results of further consideration of WP491 to next WG2 meeting, Naples, May 1999.

ACTION 17/11 – ALL - submit proposals and the results of analysis from investigations into candidate enhancements to Doc 9705 requirements for the transport service to better cope with the loss of TPDU's.

Attachment 1

**Agenda for the 17th Meeting of ATNP WG2
19-22 January 1999 (Tuesday through Friday)
Honolulu, Hawaii, USA
Meeting Hours: 0900-1700**

0. Meeting Organizational Issues
1. Approval of the Agenda (WP481)
2. Review and Approval of the report of 16th Meeting of WG2 (Bordeaux – WP482)
3. Inputs/Issues from other ICAO Bodies (e.g., Panel Secretary, CCB, WG1, AMCP**, etc.)
4. Review Status of Action Items from the 16th Meeting of WG2
5. Package-1 ICS Documentation
 - 5.1 ICS SARPs (consideration of requests from the CCB and/or ICS SME).
 - 5.2 Additional Validation Results
 - 5.3 Implementation Plans
6. Package-2 ICS Documentation
 - 6.1 Security Mechanisms*
 - 6.2 Systems Management*
 - 6.3 Multicast/Broadcast Functions
 - 6.4 Additional and/or revised SNDCFs for mobile and/or ground subnetworks**
 - 6.5 ATN ICS Subsets
 - 6.6 Enhancements to the ICS SARPs/GM based on New or Revised User Requirements
 - 6.7 Enhancements to the ICS SARPs/GM based on Operational Experience
7. Future Work Plan
 - 7.1 Plans for 18th meeting of WG2
8. Any Other Business
9. Conclusions and Action List

ATNP WG2 17th Meeting
19-22 January 1999
Honolulu, Hawaii, USA

LIST OF WORKING PAPERS

| WP No. | Agenda Item | Presenter | WP Title |
|-------------------|-------------|------------------------|-------------------------------------------------------------------------------------------------------|
| 481 | 1 | R. Jones | Agenda for the 17th Meeting of ATNP WG2 |
| 482 | 2 | R. Jones | Report of the 16th Meeting of ATNP WG2 |
| 483 | 6.4 | R. Jones | Availability and Continuity of Service for Mobile ATN Users |
| 484 | 6.4 | R. Jones | Mobile Subnetwork Connectivity Reporting Requirements for ICS Package-2 |
| 485 | 6.4 | R. Jones | Mobile Subnetwork Connectivity Reporting Under R.F. Channel Fading Conditions |
| 486 | 6.7 | J. Moulton | Transport Protocol Requirements for Package-2 ICS |
| 487 | 7.1 | F. Cecere | Information on May 1999 ATNP WG meetings in Italy |
| 488 | 6.1 | T. McParland | Symmetric Mechanism for Authentication in IDRP |
| 489 | 3 | M. Paydar | An Update from the Panel Secretary |
| 490 | 3 | M. Paydar | Issues on SNDCF's for LANs |
| 491 | 6.4 | AMCP WG-D/VSG3 | Access to VDL Mode 3 Broadcast Services |
| 492 | 6.1 | T. McParland | Mutual Authentication Service for IDRP Air-Ground Connections |
| 493 | 6.1 | T. McParland | Proposed Revisions to ICS for IDRP Authentication |
| 494 | 5.1 | M. Adnams | VDL Mode 2 Handoff Event Proposed SARPS |
| 495 | 5.1 | M. Adnams | VDL Mode 2 Handoff Event Proposed Guidance |
| 496 | 5.3 | M. Adnams | European LINK2000+ Programme |
| 497 | 6.2 | M. Adnams | ATN Fault management Requirements Analysis |
| 498 | 6.2 | M. Adnams | ATN Internet Management Tools |
| 499 | 6.1 | M. Bigelow | WG1/SG2 Report |
| 500 | 5.1 | T. Schade | SME-V (ICS) Report |
| 501 | 6.2 | S. Tamalet | ATN Accounting Management Requirements |
| 502 | 6.2 | S. Tamalet | Internet SARP's Modifications Related to the Implementation of the Echo Response Function |
| 503 | 5.3 | K. Itono | Japanese ATN Development and Implementation Plan |
| 504 | 5.1 | T. Schade | SME Inputs on PDR 98060006 |
| 505 | 5.1 | KP Graf / M. Adnams | WG2 SME Amendments to WG2 WP494 |
| 506 | 5.1 | B. Cardwell | Transport/Application Frozen Reference Timing Problem |
| | | | |
| Flimsy No. | | | |
| 1 | | R. Jones | WG2 position on ATNP/3 Schedule |
| 2 | | S. Tamalet | WG2 response to WP490 |
| 3 | | J. Moulton | Proposed Doc 9705 SV-I note |
| 4 | | J. Moulton | Issues associated with minimum 1100 octet size SNSDU requirement |
| 5 | | M. Adnams | Support for VDL handoffs by the ATN Internet |
| 6 | | R. Jones | Need for ATN Mobile Subnetwork Enhancements in Order to Satisfy the Continuity of Service Requirement |
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WG2 17th Meeting Attendance

Honolulu, Hawaii, USA – 19-22 January 1999

ATTACHMENT 3

| INITIAL | NAME | ORGANIZATION | ADDRESS | PHONE/FAX | E-MAIL ADDRESS |
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Aeronautical Telecommunication Network Panel
Working Group 2
17th Meeting, January 1999
Honolulu, Hawaii, USA

WG2 Inputs on the ATNP/3 Schedule and Agenda

ATNP WG2 has discussed the schedule for ATNP/3 as proposed by the panel secretary and supports convening the panel during the proposed 7-18 February 2000 time slot. However, WG2 recognizes the considerable work that will be necessary to progress the Package-2 Sub-Volume V (ICS) materials and complete the validation in time to support the approval the Package-2 provisions at ATNP/3. Therefore, WG2 desires to monitor the progress made over the next 4 months (i.e., between the Honolulu and the Naples meetings) and to then provide a final confirmation to the ATNP secretary prior to the ANC finalizing the panel meeting schedules for the year 2000. WG2 is prepared to propose agenda items for ATNP/3 out of its 18th meeting in May 1999. WG2 proposes to provide proposed 'Package-2' ICS provisions to the panel secretary subsequent to the conclusion of the 19th meeting of WG2 in October 1999. Furthermore, WG2 believes it necessary to schedule a meeting in the late November/early December time frame in order to finalize the validation report and to make any needed corrections to the proposed ICS provisions, based on validation results. WG2 recommends that these meeting, including all three working groups, will be where the 'Package-2' provisions and validation results can be considered in total, including the results of system level validation efforts.