

AERONAUTICAL TELECOMMUNICATIONS NETWORK (ATN)

WG3 - (ATN Applications and Upper Layers) Twelfth Meeting

Rio de Janeiro (Brazil)

16 - 20 March 1998

Draft Chairman's Report - Working Group 3

(Presented by M J Asbury)

1. INTRODUCTION

1.1 The 12th meeting of the ICAO Aeronautical Telecommunications Network Panel Working Group 3 was held in the Rio Othon Hotel, Rio de Janeiro, from 16 - 19 March 1998. The meeting was chaired by the WG3 Rapporteur, Mr M J Asbury, and was attended by some 30 Members from 13 States and 5 International Organisations.

1.2 The attached paper constitutes the Draft report of the meeting.

2. CONCLUSION

2.1 Members and attendees are requested to consider the draft report, and pass comments and proposed alterations to the Rapporteur to allow a revised version to be reviewed at the 13th meeting of the Working Group, to be held in Utrecht, Kingdom of the Netherlands, from June 29 to July 2nd, 1998.

REPORT OF THE 12TH MEETING OF THE AERONAUTICAL TELECOMMUNICATIONS NETWORK (ATN) WG3 - (ATN APPLICATIONS AND UPPER LAYERS), RIO DE JANEIRO (BRAZIL) 16 - 20 MARCH 1998

1. INTRODUCTION

1.1 The 12th meeting of the ICAO Aeronautical Telecommunications Network Panel Working Group 3 was held in the Rio Othon Hotel, Rio de Janeiro, from 16 - 20 March 1998. The meeting was chaired by the WG3 Rapporteur, Mike Asbury, and was attended by some 30 Members from 13 States and 5 International Organisations. 28 Working papers were presented. A copy of the Agenda for the meeting is at Appendix A, the list of attendees is at Appendix B, and the list of Working Papers is attached at Appendix C.

1.2 The meeting was welcome to Rio de Janeiro by Luiz Castro, the member from Brazil. Mike Asbury thanked him on behalf of the meeting for all the work he had done in preparation for the meeting, particularly bearing in mind that his Headquarters had suffered a devastating fire only a month previously.

2. AGENDA ITEM 1 - REVIEW/APPROVE THE MEETING AGENDA

WP312-01 - Agenda

2.1 The Agenda had been sent out by e-mail previously. Due to certain time constraints on particular members, the meeting was not conducted in the order indicated in the Agenda - however, this report will outline the proceedings in the agenda order.

2.2 Also, because Subgroup 3 was responsible for security and system management, papers previously earmarked for these topics under Agenda Item 11 - Any Other Business - would now be taken under Item 6 - Upper Layer Communications Service.

2.3 With these changes, the meeting approved the Agenda.

3. AGENDA ITEM 2 - REVIEW THE REPORT OF THE 11TH MEETING

WP312-00 - Draft Report of the 11th Meeting

3.1 In the absence of the Rapporteur, the 11th meeting had been chaired by Jean Yves Piram. He presented the draft report of the meeting. He thanked Simon Clothier (absent getting married) for his help in the preparation of the report.

3.2 There were few comments. There had been some concern expressed at Redondo concerning cross-referencing of documents. Referring to paragraph 5.1.7, Masoud Paydar emphasised that in any ICAO document, reference may only be made to other ICAO saleable published documents. Mike Asbury said that since the 11th meeting of the WG, the ADSP Manual has now been given a number, and will be available to the public. Masoud noted this, and will make a comprehensive editorial change in the ATNP material to reflect this.

3.3 There was a small editorial change concerning PDR numbers in paragraph 6.2.4. A correction page has been produced (WP 312-00 Rev 1), and the change will be incorporated in the soft copy.

3.4 Steve Van Trees, Chairman of the Configuration Control Board (CCB) confirmed that SARPs Edition 2.2 dated 19/12/98 was now available in soft copy. He explained that in order to clarify the differences between 'versions', related to both paper and application numbers, in future paper copy would be referred to as an Edition number, whilst the software for Applications would be referred to by Version number. Thus SARPs Edition 2.2 refers to ATNP Applications Version 1.0.

3.5 The meeting accepted the notes of the 11th meeting, without further change. Mike Asbury thanked Jean Yves for chairing the meeting in his absence.

4. AGENDA ITEM 3 - REVIEW STATUS/OUTCOME OF RELEVANT MEETINGS

4.1 ICAO Air Navigation Commission (ANC)/ATNP Secretariat

WP312-16 - An Update from the Panel Secretary

4.1.1 Masoud Paydar, Secretary of the ATNP, presented this paper, reporting on relevant ICAO activities. Two new members, from Argentine and ASECNA, have been approved. The ANC carried out a final review of the new draft ATN SARPs on the December 1997. They eventually approved the core SARPs for inclusion in Annex 10, but decided that the rest of the material should be published as a special manual (Manual of Technical Provisions for the ATN, Doc 9705-AN/956). This manual will retain the SARPs style language, and can be amended on an annual basis if required. It will be published co-incidentally with Annex 10 Amendment 73 around August 1998.

4.1.2 Masoud reported that timescales for ATNP/3 have had to be revised, due to pressure from within ICAO. This had been discussed at the ATNP Joint Working Group Meeting earlier, and it had been decided that, of the available dates, 6 - 17 December 1999 would be most acceptable.

4.1.3 The proposed amendment to AFTN SARPs (Recommendation 1/1 of ATNP/2) had been reviewed by the ANC, and approved with a few minor changes. Masoud particularly encouraged the working group in general, and the Ground/Ground Subgroup (SG1) specifically, to take a keen interest in AFTN, since this was the only real pool of expertise available to ICAO. He urged the SG to pay attention to any and all AFTN matters - these could have a direct relationship with AMHS gateway design work.

4.1.4 Masoud had been disappointed that of all the international organisations polled, only IATA had responded with comments on the ATNP SARPs and also the new SARPs publication, control and amendment procedures. ICAO, often unfairly accused of being slow, bureaucratic and behind the times, was rather discouraged by this lack of action on its new updating procedures. He noted that the core SARPs made routine cross references to the new Manual, and ICAO was confident that the Manual will be followed as a logical operating extension to the SARPs. Also, if members felt that the core SARPs had to be added to or strengthened, for example through the addition of Security and System Management, this could be done through ATNP/3

4.1.5 Jean Yves Piram picked up on the AFTN issues. SG 1 is aware of the problem (see SG 1 Report, WP 312-22). Masoud said that Amendment 73 to Annex 10 will be tabled before the ICAO Council later this week. This is where the decision on the amendment process will finally be adopted. The ANC recommendations are usually followed, and Masoud would not see an exception in this case.

4.1.6 Paul Camus said that at present Edition 2.2 of the D ATIS SARPs did not meet the Operational Requirements stipulated by the ADSP. Masoud said he was aware of the problem, which had been raised at the December meeting of the CCB. Mike Asbury asked about the latest possible date for amendments to the new Manual which would still allow it to meet its publication date, since it was now a Manual, and therefore controlled by the Secretariat, rather than having to have all changes approved by the ANC. Masoud said that if the amendments were simple to execute, it may be possible to have them inserted, provided they had been approved appropriately, if he received them the end of Friday 20th March. Otherwise it could be possible to take care of them by publication of a Corrigendum, to be sent out with the Manual.

4.1.7 Mike Asbury thanked Masoud for his helpful advice and co-operation, which perhaps illustrated some benefits of the new ICAO procedures.

4.2 ADSP Working Group Meetings (A, B and Joint), Atlanta, February/March 1998

WP312-21 - Summary Report of ADSP Working Group Meetings in Atlanta

4.2.1 Gregg Anderson presented a report of the above meetings. This working paper was available in soft copy only, due to its size (> 200 pages).

4.2.2 ADSP WG A (ADS/ADS-B) had discussed new requirements arising from a review of flight deck operations coming from the flight deck. The expected behaviour of the avionics should be reviewed by SG 2. An ADS Lexicon had been prepared containing standard definitions. Future work would be passed between Panels.

4.2.3 ADSP WG B (CPDLC etc.) developed a new appendix to chapter 3 of the CPDLC part of the manual. This appendix provided average message rates for the CPDLC application on a sector basis. The group reviewed co-ordinated and accepted proposed amendments to the ATIS data glossary and variables range and resolutions. The revised version of these two appendices were made available to the ATNP editor responsible for the ATIS, resulting in significant changes being required to the ASN.1 to achieve identical voice/data link ATIS capability.

4.2.4 The group also agreed that the option to create a new PANS-RAC volume for data link which would contain all data link applications related information should be pursued. In CPDLC, the use of free text was also recognized to be of specific importance for the PANS-RAC and needed further work. The discussion also raised the problem of the use of message UM168 DISREGARD. It appeared that the message could be misunderstood and therefore its use needed further considerations.

4.2.5 Regarding future work, the development of the amendments to the annexes, as well as the production of procedures related to the use of CPDLC would be carried out. The review of the CPDLC, D-FIS and AIDC part of the manual for completeness and clarity would also be considered. The RCP concept will be progressed, and the new meteorological data link services (RMIS, TAF, Airep,..) will be further developed.

4.2.6 The ADSP Joint Working Group (JWG) had been established principally to develop ICAO documentation on the accommodation of FANS-1/A and ATN in the same operating environment, and to identify a path from FANS-1/A to full ATN. This meeting was the final one of a series, during which the draft document would be completed and reviewed by members for the last time.

4.2.7 It was agreed that, on completion of the working groups amendment of the document (including appendices) the work was of a mature state and, rather than wait for ADSP/5, it should be given to the Secretary at the completion of this meeting for action by ICAO. This decision was made due to the urgency for the material to reach the many States who were making their implementation decisions now. It was seen as critical that any implementation choices be made with as much guidance as was practically available. Sitting on the material may mean States could approach the issues of transition and accommodation in an uncoordinated or unstructured manner. Further, the document broached a large number of associated issues (certification, cost/benefit, performance, etc.) that would guide States to carry out their own studies into these matters. These matters would need to be carried out in tandem with their studies of the operational requirements considerations detailed in the document, noting the indelible link between them.

4.2.8 The JWG had also discussed the security requirements for data link operations. ATNP had requested that ADSP more clearly define what the operational requirements were in relation to security. Although the initial ATN draft SARPs did not include any technical provisions for security, future enhancements to the ATN SARPs were expected to define such provisions.

4.2.9 It was agreed by the joint meeting that providing for data link messages to be protected against modification, masquerade and replay was felt to be operationally beneficial, but the group recognised that a concrete judgement as to whether or not this would be sufficient would not be possible during this meeting. Further, it was likely that other international organisations, institutions or even governments may have their own specific requirements that were not specifically related to operational requirements. This could include restrictions to the ability to monitor or use the information transmitted for commercial reasons. It would be incumbent on the ATNP to ensure that they requested feedback from a wide variety of sources.

4.2.10 Gregg emphasised that he thought that WG3 should not feel responsible for the changes in the DATIS - Frederic Picard (the DFIS editor) had built the ASN.1 to the then known requirements.

This build highlighted the problem of needing too much free text. The solution was to obtain the correct and proper Operational Requirements in order to be able to develop the correct ASN.1 This information had only been made available at this recent meeting.

4.2.11 Tony Kerr asked about Required Performance Communication (RCP) activities. Gregg admitted that this activity was not spectacularly far advanced. At this stage the RCP subgroup of ADSP WG B was developing a strategy, to be completed by the end of 1998. The next report was due to be presented to WG B in June. The initial objective was to take what was being done in other fora, and assess the applicability to the ADSP plan. RTCA SC 189 was producing Minimum Airborne Systems Performance Specifications (MASPS), but this activity has stopped. However, the Editor of the MASPS was a member of the subgroup, and would forward MASPS information to the RCP WG for use in the development of their programme. Part of the work would consist of developing scenarios, and assessing the levels of communications required. It was possible that two measure would be used to indicate RCP - Information Transfer Delay and Dependability, which is an amalgam of such performance measures as continuity, availability, reliability etc. Trying to get something ready for ADSP/5 means completion in the October/January timeframe.

4.3 Configuration Control Board (CCB) Meetings

WP312-27 - ATNP/CCB Chair's Report

4.3.1 Steve Van Trees presented the report of the CCB meetings held since the 11th meeting of WG3. This was probably the end of an epoch in the CCB - once we have a firm published saleable document this will be a line in the sand. There will be aircraft in the air with this equipment - any future Proposed Defect Report (PDR) must take into account interoperability, and the format of the PDR has been amended to recognise this. The CCB was not now accepting any PDRs purely relating to editorial detail. The CCB would also attempt to keep an informal status lists of 'rumoured' PDRs. The CCB is now the official ATNP body with responsibility for the CAMAL - WG1 SG 1 has been disbanded. Overall, some 100 PDRs have been produced - many related to difficulties discovered in build and implementation. Steve was confident that the CCB is achieving what it set out to do, and he was not expecting a large wave of PDRs in the future.

4.3.2 Complementing the ADSP report, Steve also mentioned the work of RTCA SC 189/WG53, which covers ATNP and FANS-1/A transition and accommodation issues also. There are three subgroups - Interoperability, Safety and Performance, and Required Communications Performance - and Tom Kraft is joint chairman. The Interoperability SG will meet in Eurocontrol in May, with a Plenary in June in UK. It had been suggested that there was a need for a short message set for CPDLC - this was canvassed throughout USA, but rejected. Paul Camus noted that this committee will address issues in relation to experience gained with FANS in the South Pacific - many examples are given in WP312-04 (see para 10.1 below). He asked how any technical, rather than operational, points will be answered. Steve said that this was a matter for the relevant subgroup chairpersons, but he could confirm that the committee would follow the transition guidelines given by ADSP.

WP 12-06 - CNS/ATM Baseline and Version Control

4.3.3 This paper was associated with CCB matters, and therefore taken under this Agenda Item. It was presented by Tony Kerr - and had been presented initially to the CCB. The paper emphasised the need to make use of extensibility markers to ensure interoperability, and, particularly, backward compatibility. This had not been done so far. For example, an aircraft implementing the Edition 1.1 of the SARPs could not be compatible with a ground system operating an implementation based on Edition 2.2, although both were ostensibly Version 1.0 systems. Version 2.2 should be the baseline.

4.3.4 Steve Van Trees said that much of Tony's comments in the paper will be incorporated into the CCB Procedures Document.

5. AGENDA ITEM 4 - AIR-GROUND APPLICATIONS

WP312-26 - Report of Subgroup 2

5.1 Mike Asbury, chairman of the subgroup said that due to his recent illness, the Subgroup has met only once since the 11th meeting of the Working Group. This was a shortened meeting held in

the Rio Orthon Hotel, during the period 13 - 15 March 1998. The previously proposed agenda was discarded in view of the reduced timescale of the meeting, and the urgent need to progress two items, namely the change in the ATIS message contents resulting from input from the recent ADSP meeting in Atlanta (March 1998), and the problems raised by Aerospatiale particularly concerning logon procedures which had been identified during early attempts at implementation.

5.2 The recent ADSP WG B meeting had seriously reviewed the DFIS application and concluded that in its present form the errors were such that the highest level ATIS Operational Requirement, namely that ATIS by voice and ATIS by data link should carry identical information, was not achievable. The ADSP WG B produced corrected definitions, ranges and resolutions, and asked the ATNP, through their Chairman, the Secretary of the ADSP and joint members, to bring the need for urgent corrective action to the attention of the appropriate ATNP body. SG 2 has prepared a revised Chapter 4 (ASN.1 notation) for the updated message set produced by ADSP. These changes only affect the ATIS message set, and not the general high level operation of the FIS application. A PDR has been raised, proposing to substitute the new ASN.1 section in its entirety for convenience and correction, and forwarded through SME 2 to the CCB Chairman (see WP312-28 below).

5.3 SG 2 requested that WG 3 review the material, with a view to requesting to the ICAO ATNP Secretary, through the CCB, that he substitutes the existing material in Edition 2.2 with the new material in time for it to be included in the first publication of the SARPs special Manual.

5.4 Commenting, Frederic Picard (D FIS Editor) said that due to the amount of conditional statements in the ATIS application, he had had a choice between making the ASN.1 extremely complex, allowing for all possible options and cross checking, or to simplify the ASN.1 and put the burden of sending the correct information on the message originator. Mike Asbury said that the SG had agreed the latter course of action. Basically the DFIS ATIS application would only act as a message pipeline, with significantly reduced operational cross checking capability. However, this was another means of ensuring that voice and data link presentations remain identical - if the source data is wrongly presented, it will be wrongly presented in both media.

5.5 Danny van Roosbroek asked what was the impact of the new FIS. Frederic said there was an effect on ASN.1 but no change in protocol or use of the service, Change will impact only software - there were only limited changes, but it would be easier for the Manual editors in ICAO to substitute a complete section.

5.6 Paul Camus admitted to being associated with the decision to accept the need for voice and digital ATIS to be identical. However, there could be a system certification problem, because we were losing a facility to correct errors. Aerospatiale has built in additional semantic error checking anyway. Gregg Anderson agreed that checking now becomes a human problem, which he thought was acceptable, and certainly in line with today's operations. Mike Asbury suggested that this was more an operational matter, and that a paper to the ADSP would be in order, if Paul felt strongly about the problem.

5.7 The other series of problems arose principally from the implementation concept of a CM server, which would act as an initial contact focal point for a number of facilities. CM was not originally designed to operate particularly flexibly in such an environment, and has limited facilities for allowing information to be gathered from multiple destinations in the course of a single logon procedure. For example it is not possible for an aircraft to request CPDLC from one facility and FIS from another in the course of a single logon to a third facility, the CM server.

5.8 Steve Van Trees noted that, historically, one of the things that CM has never done well is cope with the server concept. CM was a system problem, which overlapped with several functionalities. ADSP will not provide guidance - this is a technical problem.

5.9 In line with the ongoing request from WG 3, the SG reviewed its future work programme. In ADS, work needs to be done relating to pilot involvement in emergency situations, event based reporting, including elimination of the capability of different Flight Management Systems to report the same event in different ways, and Figure of Merit implementation. In addition, work needs to be done to ensure that ADS offers similar functionalities to SSR where these services overlap or are substituted. Regarding CM, industry is already identifying areas where improvements are required,

including server use capability, multiple CM capability, 'hot' spares in aircraft and related redundancy problems, and the need to allow more than one simultaneous instantiation of an application.

5.10 It has been obvious from recent events that additional work will be required for DFIS. New applications are being developed by the ADSP, including METAR and TAF, which will require significant work, and there is continued work on the existing ATIS application, to keep in line with revisions to procedures. In CPDLC it is likely that there will be changes required based on lessons learned from early implementation of FANS-1/A.

5.11 Whatever else, given the early stage of the ATS data link implementation, there will be changes and additions arising out of the work being carried out by industry based on Package 1 SARPs. In addition there is work required on elements of the programme that now must be identified as Package 2 material, but which in reality is a continuum of the work up till now being carried out for current implementation.

WP 312_12 - SME 2 (Air-Ground applications) Status Report

5.12 Frederic Picard reported that there were only 2 ADS PDRs outstanding - all the others had been cleared as per the CCB Chairman's report. One PDR related to editorial matters - the other to a reversal of parameter values. The WG agreed that these should be passed to SG2 for action and submission of the appropriate corrections to the CCB.

WP312-28 - Proposed New ASN.1 for ATIS

5.13 Frederic Picard presented this paper, which was really a compendium of papers including a new D ATIS glossary, a new Range and Resolution table, revised ASN.1 to cover the ATIS message set, and a PDR sheet to cover the ASN.1. The changes to the ASN.1 were not redlined - it would make it very difficult to read - but explanatory notes have been added.. A very clean version will be sent to the CCB with the PDR. There were three types of change - minor, which did not impact the structure of fields (e.g. name changes in line with ADSP); major, which did involve changes to the structure of the field, and defects - only one or two - where advantage was taken of this opportunity to correct. At least one of the defects would not allow the ASN.1 to compile.

5.14 Gregg Anderson reviewed the operational changes which had occasioned the changes in the ASN.1. There were changes in operational requirements from ADSP in the ranges and resolutions, and also changes resulting from input by the ICAO Met section. The changes have resulted in a change in the number of entries in the Glossary from 24 to 55, all of which had to be considered for incorporation into the new ASN.1. A note had been added at the top of the glossary that users should refer to the appropriate ICAO annexes for clarification of some definitions and requirements.

5.15 Paul Camus appreciated the work which had been done, but said we still needed new guidance material to go with the new ASN.1. This was agreed, and Frederic would update the D FIS material accordingly. In addition, Paul said that an avionics engineer cannot be expected to go through Annexes - the guidance material should explain everything, and act as sole source of the necessary documentation. Mike Asbury said that it was not the job of this panel to produce technical specification, which is what Paul seemed to be asking for - the engineers would still have to use the relevant reference material, and consult experts for interpretation if required.

5.16 The WG agreed that the PDR containing the revised ATIS ASN.1 should be forwarded to the CCB chairman as soon as possible, hopefully for inclusion into Edition 2.2 of the Manual.

WP312-17 - Eurocontrol Trials End System (TES)

5.17 Danny van Roosbroek presented this paper, giving the current state of development and deployment of the Eurocontrol TES, an implementation of the CNS/ATM-1 Package ATN upper layers, ADS, CM and CPDLC applications. It should be noted that FIS is not being implemented. The current release of TES to users is identified as TES Release B, where the software has been updated to conform with the ICAO SARPs Edition 1.1 from Phuket. The TES software is still undergoing a process of evolution, with several items under active development for the next release. The TES software played a major role on SARPs validation, and continues to be important for ATN trials and exploitation.

5.18 Danny also gave a verbal report of the successful flight of the Eurocontrol Trials aircraft fitted with the complete 7 layer model. This was a generally very successful flight, demonstrating the effectiveness of the installation. Further trials flights are expected.

WP312-18 - Data Link Application Servers in Europe

5.19 Danny van Roosbroek presented this paper, which explored the concept of operating data link services through the use of data link application servers within Europe. The ICAO SARPs contain a fairly basic but flexible level of functionality. They do not define how services should be used, as this is subject to national and international agreements. Within Europe, operational requirements for ATM air/ground data communications services, which define how data link services will be used, are already being developed. This paper looks at the concept of a data link applications server, outlining the benefits, and the issues which have to be considered. He saw this as future work for SG 2.

5.20 Paul Camus commented that procedures presented by Danny are related to European environment, and takes care of real implementation problems. But he foresaw many Human Machine Interface (HMI) problems, and we should pay considerable attention to this. He was concerned about pilot procedures being different in various parts of the world. We should be looking at the standardisation of flight deck operations globally. ADSP and ODIAC procedures should be co-ordinated, particularly for procedures in Europe. Paul also asked whether ADSP endorsed all the ODIAC requirements? Again this is because certification issues have to be considered. Mike Asbury explained that Eurocontrol was strongly represented on the ADS Panel Working Groups, and the results of the ODIAC work were routinely brought to the ADSP. The ADSP sometimes has some difficulty in deciding whether ODIAC-developed procedures are suitable for global implementation, or applicable to Europe only.

5.21 Egon Koopman asked about the impact on end to end transit delay. Danny said that a full system study had yet to be done, and this information would arise from that. Asked also whether this had been presented to the European Air Traffic Control Harmonisation and Integration Programme (EATCHIP) Board, Danny said that it would be dealt with appropriately. Tetsu Misoguchi said that Japan had had problems with end-to-end aspects of server operation, and server reliability, and his offer to discuss this with Eurocontrol was gratefully received. He also asked what Eurocontrol saw as the end system, and how would it be organised? Danny said that the initial thoughts were that the ATN end system would reside on the server, and there would be local implementations which would take care of onward progression of the messages.

5.22 The WG was grateful for the presentation of the paper, which would be passed to SG 2 for review and further action.

WP312-14 - CM Addressing Paper included in AEEC Minutes

5.23 Greg Saccone explained that this paper was basically an extract from CM guidance material, for the benefit of the AEEC. The material had been seen by the WG previously. It had not been tabled at the AEEC meeting, but had been attached to the minutes for reference.

5.24 Paul Camus felt there was a need for operational guidance - AEEC may not have the expertise to deal with this matter. He would welcome a scenario from operational experts outlining what was the information needed and in what sequence - airport, met, ATIS, control centre etc. There was a requirement to have the correct addresses. Ground topology also had to be considered - assumptions may have to be made as to what were the ground procedures and what information had to be exchanged. The pilot may have to know where the ground servers were. Regarding AIS, what new information needed to be provided on the charts to the pilot to logon. If they were not able to cover these points, AEEC will not be able to develop a solution.

5.25 Gregg Anderson pointed out that much was up to the user concerning implementation. Perhaps it would be possible to take the topology from the GM and expand for the AEEC. Paul Hennig said that this would fit into the AEEC strawman. Paul Camus offered to contribute to the strawman - this was gratefully accepted by Paul Hennig.

5.26 Rene Esser agreed with the comments made by Paul Camus. Mike Asbury said that this was not the operational panel - that honour belonged to ADSP, and the development of operational scenarios should be their responsibility. Rene should put a paper to ADSP WGs through his ADSP member, Evert Westervelt. Rene felt that this group should make the request, as that would add more weight. Gregg Anderson felt strongly that ICAO was not responsible for implementation scenarios. We needed to talk to IFALPA to find out how they were going to work on the flight deck. Paul Camus said scenario development cannot be done locally - there must be a global scenario. Danny van Roosbroek said that CM was basically a system problem, technical in nature - and the WG could not leave it to the ADSP - the WG should do the work, through SG 2.

5.27 The WG agreed that in the first instance Greg Saccone would prepare a Flimsy to be forwarded to IFALPA through WG 1 to IFALPA asking for their operational requirements.

WP312-13 - ADS Emergency and/or Urgency Requirements

5.28 Gregg Anderson introduced this paper, which indicates the requirements identified by the ADSP WG A to provide functionality in the ADS application which would indicate that an aircraft is in an Emergency and/or Urgency status. The information in the paper should be considered as draft until formally received by the Secretary of the ATNP from the Secretary of the ADSP. ADSP WG A determined the need for parity between the various forms of surveillance that could ultimately be presented to the controller via a surveillance fusion integration function must be common, and represent at least the level of existing surveillance capability in use today. The main problem is the need for a pilot interface within ADS - this is a major change in operating concept. Development of this facility for Package 2 may well prove the first real test of version compatibility.

5.29 The paper cited several examples of situations which might require the facility, including Loss of Communication (implying direct pilot/controller communication, i.e. voice and CPDLC) Paul Camus felt sure that the number of occasions that CPDLC would fail, with ADS still available, would be very small. Thus this requirement may have a big impact on safety assessment and certification - perhaps even to the need to carry a separate ADS box, isolated from all other data link systems. MA asked why Paul thought the probability to be so low, and Jane Hamelink said that safety and isolation of applications was one of the purposes of having separate connections for all the air/ground applications. The WG agreed that this paper should be passed to SG 2 to allow an early development of the technical solution in parallel with the work going on in ADSP.

5.30 The next meeting of SG2 will take place from 11 - 15 May, probably in East Lansing, Michigan.

6. AGENDA ITEM 5 - GROUND-GROUND APPLICATIONS

WP312-22 - SG 1 Progress Report

6.1 Jean Yves Piram, Chairman of SG 1, presented this report of the work of SG 1. The SG had met twice since the last meeting of WG 3, at Orlando and Rio de Janeiro, just prior to this current meeting. Regarding the maintenance of Package 1 SARPs, the SG had dealt with PDRs related to ASTMHS - there has been no specific work on AIDC.

6.2 Work on the extended ATS Message service has continued. It was identified that this could be a suitable communication system for all or part of the Aeronautical Information Services (AIS), and that there was a need to identify AIS requirements more closely. This work was timely, since the recently constituted ICAO AIS/MAP Subgroup was also considering AIS communication requirements.

6.3 The SG has also carried out work to review security functionalities for the AMHS service. Members felt that the risk analysis included in the overall ATN Security Concept as presented at ATNP/2 was too general as far as AMHS was concerned, and chose to carry out their own risk analysis to the level of categories of messages. This analysis was seen as part of deliverable D111, and is the subject of a separate paper (WP312-24, below).

6.4 Some early work on system management for AMHS has been done, in co-operation with WG3/SG 3. Tasks have been identified, and a methodology has been agreed.

6.5 The SG has been tasked with the development of a CIDIN/ATN gateway. The SG agreed to specify this in the form of a CIDIN/AMHS gateway, which will allow benefit to be gained from earlier work on the development of the AFTN/AMHS gateway. It was agreed that the number of scenarios to be taken into account for AMHS/CIDIN/AFTN interoperation should be kept to a minimum, so as to reduce the effort spent on accommodation of CIDIN technology.

6.6 With regard to work being carried out on the AFTN, the SG are seeking ways to reduce the future evolution of the present AFTN, in order to minimise any effects on the AFTN/AMHS Gateway SARPs. In addition, the SG has been tasked with reviewing the addressing issues in AFTN 'with some degree of urgency'. However, it is considered that the problem is not well formulated, and a more accurate set of requirements is called for, possibly from the ATNP Secretariat. There seem to be two or three understandings of the problem, and clarification is required. Support from service providers, e.g. SITA and ARINC, would be welcome.

6.7 Finally, Jean Yves said that on average there are about 10 participants for each meeting, and just over 200 work papers have been produced overall by the SG members.

6.8 There was a short discussion relating to AIS messaging. Masoud Paydar said there are no Panels looking at AIS directly, but there is some expertise available. He would give addresses of experts to Jean Yves. Tetsu Misoguchi said that Japan had a paper on AIS which was presented at the recent WG3 SG1 meeting. Japan urged a standardisation of AIS, with the messages being ATN compatible. Danny van Roosbroek asked which was the organisation which would control the application. AMHS is store and forward - and its first use is AFTN. Who would consolidate the AIS requirements? Jean Yves thought that Danny was outlining the overall problem, rather than asking a question. There needed to be an Operational Requirement - Masoud recognised this, and will get in touch with the AIS/MAP secretary and ask what is their requirement. It was pointed out that AFTN handles AIS information already anyway. SG1 was not in the business of inventing new protocols - it has quite enough to do. The meeting agreed that all effort should be made by ICAO to try to discourage AIS from developing their own network architecture.

6.9 Roberto Estrella said that he had been to the recent AIS Divisional meeting, and ICAO had presented a paper recommending the use of the World Area Forecast System (WAFS) for AIS communications. In addition he reported that the European Planning Group at EANPG 38 had set up a study group to look at WAFS for AIS communications.

6.10 Ahmed Alomari asked the meaning of 'could be', where Jean Yves had reported that the extended ATS message Service 'could be' a suitable communications system. Jean Yves that the SG and ATNP have defined an extended Message Handling Service. The SG now has to assess the operational requirements of a potential application, and map to the service. Ahmed then asked about alternative networks, citing SADIS, which was already in use in Saudi Arabia. SADIS was also being addressed by the EANPG. In addition, SG 1 would, in co-operation with the ATNP Secretariat, identify the necessary operational requirements for an AIS communications network.

6.11 Jean Yves has noted in his presentation that the CAR/SAM region is looking to implement an ATN-based ground/ground communications network. There is a CAR/SAM ATN implementation task force, chaired by Roberto Estrella. Roberto reported on the latest task force meeting. The objective is to initially continue with X25 in AFTN centres, then set up an AMHS network, followed by full ATN air/ground and ground/ground links. Initially two common networks would be established as a basis. Asked about timescales, he said that initial early implementation was expected, probably between Trinidad and Tobago in the first instance.

6.12 It was agreed that the next meeting of the SG would take place from 13-15 May 1998, the location yet to be decided.

WP312-23 - Sub Volume 3 SME Report

6.13 Jean Marc Vacher presented the SME 3 report. Resolved or forwarded PDRs for AIDC and AMHS were listed. 3 PDRs have been raised since the fourth meeting of the CCB, and have been accepted for processing by CCB/5. Both the open PDRs related to the states of the AIDC affect interoperability. The 'Year 2000' issue affecting AMHS uses time both in the past (for retrieval) and future. Mike Asbury asked about any urgency in the need to process these PDRs. Steve Van Trees,

Chairman of the CCB, indicated that there was no panic to process these PDRs - it is likely that they will be the first for consideration in the Annual Update basis.

7. AGENDA ITEM 6 - UPPER LAYER COMMUNICATION SERVICE

WP312-08 - ATNP/WG3/WG3 Progress Report

7.1 Steve Van Trees, Chairman of SG 3, presented this report. SG 3 is responsible for SARPs Sub-volume 4 (Upper Layer Communications Service), SARPs Sub-volume 4 Enhancements (Secure Dialogue), SARPs Sub-volume 6 (System Management), and SARPs Sub-volume 7 (Data Dictionary), the last not yet existing in draft hard copy. SG3 is responsible for the following WG3 tasks elements, as set out by WG 1, namely, the development of a Security Strategy for the ATN, the development of a system management strategy, and the review of Multicast prospects. Papers have been delivered to this meeting relating to Security (WP 312-25), Connectionless Multicast (WP312-09) and System Management (WP 312-07).

7.2 Each editor now owns two documents - Edition 2.2 and an ATNP/3 additional enhanced shadow version. SARPS SV 7 (Data Dictionary) has not yet written. Recently there had been a joint meeting at Gatwick with WG 1/SG2 (Security) and WG 1/SG3 (System Management), which were highly productive, producing a definition of a systems management profile. However, work has to be done on the development of system managed object descriptions for inclusion in WP312-07. Steve pointed out that Multicast is an IATA requirement which surfaced in WGs 1 and 2. This requirement implies Connectionless upper layers, because without Connectionless upper layers you cannot have Connectionless Transport layers. All the topics in the paper relate to an enhanced ATNP/3 version. Security is undoubtedly difficult in Package 1. There is now significant USA and Eurocontrol involvement in system management - this is a new major topic.

7.3 Jean Yves Piram noted that there has been co-ordination with WG 1/SG3, but indicated that the problems with AMHS system management were rather different from the air/ground applications. Concerning the development of the directory, Jean Yves strongly suggested that SG 3 should put high priority on matters associated with the directory - this was really difficult work. SG1 needed input from SG 3. Tetsu Mizoguchi said we also needed a directory service for CM - but he did not know who will be responsible. In fact the need for work on this has already been identified as a SG 2 item - work is likely to be progressed on this by Greg Saccone in co-operation with Jim Moulton in the preparation of the CM directory.

7.4 Finally Steve thought that the SG3 activities were independent of WG 1. SG 3 expect to have a meeting, probably in April in UK , before the next WG 3 meeting in Utrecht.

WP312-05 - SME 4 (ATN Upper Layers) Status Report

7.5 Tony Kerr presented this paper indicating the two PDRs outstanding relating to the Upper Layers. There were no interoperability problems, and the PDRs have been reviewed by SG3. The second PDR had raised naming issues in Package 1 which would be referred to SG3.

WP312-09 - ATN Connectionless Upper Layer Communication Service

7.6 Steve Van Trees draft SARPs for the Connectionless service. All the time there was a need to strive for efficiencies in the encoding - for example there was a need to also consider the Fast-byte approach for a Connectionless service which may have benefits. All the standards referred to at the front of the paper are several years old, have been implemented and do work. A Connectionless service does not provide an acknowledgement, consequently security has not been considered in the paper, and the draft material has been co-ordinated with the WG 2 multicast people, to the extent possible. The state table is simple, and protocol is simple to validate. Steve believed that this would be a compact specification, and implementations would be straightforward, provided the performance requirements are seen to be satisfactory. These SARPs would answer the multicast requirements.

7.7 This paper was draft material, brought to the WG to indicate the progress being made in the Multicast environment. A final version would be made available at the next meeting.

Security

WP312-15 - WG 1 Material on Security

7.8 This compendium of WG 1 papers was presented by Mike Bigelow, chairman of WG 1/SG2, dealing with security. The papers included draft SARPs material on security for both the core and sub-volume 1 documents, and a WG 1 indication of the security work necessary in WG 3 to ensure consistency with the work going on in the other two working groups. The main force of the work is related to the SG 3 activities concerned with the development of a secure dialogue service.

7.9 Mike drew attention to paragraph 1.5.3.1.2.6 in the proposed SARPs for sub-volume 1 - there was a question on the need for clarification on the need for a single or multiple certificates for an airframe. This an open point for continued investigation for which support required. Also the Table in attachment three needs completion relating to dates of completion of the work..

7.10 Steve Van Trees took an action to follow up Mike's request for support and information, and also to provide the necessary completion dates for the table.

WP312-24 - Analysis of Threats against the ATS message Service

7.11 This paper, presented by Jean Marc Vacher was developed as a result of SG1 concluding that the existing ATNP analysis of risks concerning the AMHS was too general to allow the definition of an appropriate AMHS security approach. The objective of this paper was to refine the ATNP/2 risk analysis, by assessment of the impact of each type of attack, depending on the message category. SG 1 had started work on the development of X400 security, but did not have a scope of the threat. The paper was based on the assumption that the AMHS may cover all forms of message, from emergency to administration, due to the AFTN carrying all these types of messages already. Initial work was based on ATNP/2 WP 25, initially presented through Eurocontrol in Toulouse in 1994.

7.12 Analysis of the impact of the threat on each message type was bound to be somewhat subjective, and discriminating criteria (High, Medium and Low) have been determined. This been done to find out what categories of messages have to be protected, how it should be done, and what was the need.

7.13 Commenting, Greg Saccone thought that Masquerade was at least equal to Modification in terms of a threat. Jean Marc pointed out that his was a subjective view, and that Greg may well be right. However, he had attempted try to give a relatively unbiased overall view, to some extent covered by the broad band of his discriminating criteria. Jean Marc thought that in any case there will be a need to have dedicated clauses in SV 1 to allow for AMHS.

WP312-25 - ATN Upper Layers Security

7.14 Gerard Mittaux-Biron presented this paper, emphasising that it only dealt with the implementation of security mechanisms in the ATN upper layers (session to application), and that further studies will be required to develop solutions for security problems in the lower layers of the ATN. The objective was to try to define dialogue security in response to the work given to the WG3 by WG 1. The paper indicated how protection against the various threats could be provided. Advice was also given concerning system management requirements.

7.15 Steve Van Trees asked what were the next step in the process? Gerard replied that there was a need to decide a precise upper layer organisation - there was no doubt that security will add to the processing - to decide where security will actually be carried out. The use of Connectionless protocols has not been taken into account. Precise ASN.1 will be required, since any disparities will result in the connection being aborted due to lack of authentication. More work needs to be done. This is an indication of progress, and of the complexity involved.

7.16 Tony Kerr asked if a checksum would be needed to be done for each message, and would the implementation of canonical encoding jeopardise interoperability. Gerard said that there were problems of encoding/decoding through switches where re-encoding may not be identical.

7.17 The WG appreciated the amount of work which had gone into this paper, and agreed that further work and discussion should take place initially within the confines of SG3.

System Management

WP312-07 - ATN Systems Management - Sub-volume 6 of the ATNP Manual

7.18 Tony Kerr presented this paper as a draft of SV 6 - a snapshot of work in progress. The subvolume was based on WP 11-22 from Redondo. He gave a brief outline of the assembly of the document, which was formatted in the existing ATNP material layout. There was some duplication with other papers presented to this meeting - section 6.7 of his paper had been updated by WP 312-11 from Frederic Picard, and 6.10.5 is duplicated in IP312-01, by the same author. There had been a joint subgroup system management meeting at Gatwick a short time ago, which had been extremely productive.

7.19 Where possible, standard ISO system management templates have been used as the basis for the work, but as they encompass many more management activities than are required for ATN, these have been significantly amended, and specific subclasses, not currently adopted by ISO, have been introduced. Pam Tupitza considered that the template as currently developed has flaws - she outlined the problems she had in IP312-02, and would take the points off line with Tony later.

7.20 Paul Camus asked whether there were studies to see whether airborne applications would benefit from such system management. Tony confirmed that these were available, and that they indicate that system management could improve access to the system. He emphasised the point that developing standards using commercially available methods would be beneficial to the community globally - the other option was for industry to develop their own systems, and apply them to elements of the overall service - this would complicate interoperability, and minimise flexibility of management. Masoud Paydar warned against dependency on multiple commercial products - he agreed the need to standardise an operating methodology through SARPs procedures.

7.21 The WG agreed that due to the specialist nature of this emerging topic, initial high level system management action should be co-ordinated through SG 3.

IP312-01 - System Management Application - The Fast Management Information Protocol (MIP) Option

7.22 Frederic Picard presented this paper which had been produced to answer a simple question, namely 'Could system management protocols be run over the ATNP Fast Byte stack?' The paper compared the system management application to the CNS/ATM-1 applications currently running over the Fast Byte stack, noting that the ATN SM application could be considered as a particular air-ground ATN application, and that there was no reason for which the methodology used for specifying the CNS/ATM-1 applications should not be used for the ATN Systems Management (SM) application. The paper concluded that the ATN SM application should be considered as the next application being designed to run within the existing Upper Layer architecture. There would be some problems caused by the switch from existing OSI encoding rules used for SM, and the Packed Encoding Rules required for the ATN applications - these had been alluded to in WP312-07 above, and were not insurmountable.

WP312-10 - System Management Requirements for Air-Ground CNS/ATM-1 Package Applications

7.23 This paper, presented by Frederic Picard, analysed the system management requirements if the CNS/ATM-1 Package air ground applications. Certain assumptions are made relating to the system environment, but in general the paper identified for each system management domain (fault, configuration, accounting, performance and security management) what were the system management requirements in terms of the communications resources required to be made visible to the SM application.

7.24 The assumptions made in the paper include the fact that there is no SM manager installed in the aircraft, and that there is a single airline SM centre per airline, from which all SM data related to the aircraft is sent and processed. Likewise it is assumed that there is only one management SM centre per ATC authority.

7.25 This paper can be taken as an introduction to WP312-11 (see below). Comments were noted on both papers together.

WP312-11 - Elements of management information related to the ATN Application Layer

7.26 This paper, also presented by Frederic Picard, is a translation in technical terms of the requirements indicated in WP312-10 (see above). This document is the first draft of specification of management information related to the Application layer within an ATN system. It is intended to be included in SARPs sub-volume 6 (see WP312-07 above). The Application Layer Management Information is defined by specifying both the Managed Object (MO) class definition of the ATN Applications Layer MOs, following the MO template that has been prepared for use in the ATN SARPs, and the action type operations on the attributes of the ATN Application Layer MOs that are available to AT System management.

7.27 Masoud Paydar drew the WG's attention to the point that within ICAO human performance is getting a higher profile - there is the distinct impression that technocrats forget people. ICAO is of course taking into account of system management, but he was concerned about the amount of system information which may be presented to a human system manager. When considering the presentation of information, SGs working on system management should take account of the ICAO guidelines given in ICAO Circular 238 - Human Factors Digest No 6.

7.28 Paul Camus thought that, regardless of the assumptions made in WP 312-10, it seemed that system management software could have the potential to remotely influence aircraft systems. There are certification aspects involved with system management. Steve Van Trees said that aircraft system management will be company specific, and would only be of a 'read-only' nature anyway.

IP312-03 - System Management Information related to the CPDLC Application.

7.29 This paper, presented by Pam Tupitza, addressed the system management issues that are considered necessary to support the network management for ATN. The focus was primarily on systems management as it applied to the CPDLC application. The paper left several questions open, and these would be addressed in subsequent discussions within SG 3.

IP312-05 - ATN Systems Management Material from ATNP WG 1

7.30 Mike Asbury pointed out that, since system management is a relatively new concept to some members of the working group, a short tutorial on its application and requirements may be welcome. This was agreed by the meeting. Tony Kerr gave a comprehensive verbal brief on the topic. He said that although it was right that the Applications SARPs should be developed first, the system would not work without system management, which now had to be considered. System management was an integral part of the ATN - among other things it controlled the behaviour of routers. In addition, there would be cost benefits to be achieved from standardisation. Systems management came in three parts - for Communications protocol, for lower layers and for Applications and Upper Layers. It would standardise on what applications to monitor, reconfigure etc. Tony then tabled the information paper which contained draft core SARPs and Guidance material, itself good tutorial information.

7.31 Steve Van Trees accepted that there had been no tutorial, and there was a lack of education. ATNP would not adopt OSI/ISO methods wholesale - we were not looking at telephone company management structures. ATN required a new concept of communications network management. The question really was of how big would the implementation of ATNP be?

7.32 Greg Saccone asked about COTS products integrated with SARPs (e.g. HP Overview) and available as a commercial package. Tony said that this has been looked at, and it had been agreed within WG 1 that it was a good idea for them to be used, and the Guidance Material took this into account. The intention was to allow commercial products. The reason for changing the OSI system management structure to make it applicable to ATN was that it was too large - filtering is required. Also commercial implementation products are defining their management requirements - this would be useful for ICAO to look at, because there is a lot of commonality. What the ATNP WGs are trying to do is define a minimum common subset. Concept of Operations (CONOPS) work has been done in WG 1, based on immature work from ANTSI - much still has to be done.

7.33 Jane Hamelink asked why systems management cannot be done locally - why do we need SARPs. Frederic Picard said that only SARPs which were strictly necessary would be developed - we had to identify shared requirements.

7.34 Ahmed Alomari noted that the term 'System Manager' was used in several different senses, e.g., software, and also human operator, and requested clarification. Steve Van Trees responded that he understood the term in three senses in the ATNP as follows. First, the software process on a host computer that receives telecommunications alarms and reports from agent software processes throughout the network; this is the proper and only topic of SARPs. Second, the application that processes and filters these reports and alarms for display to a human operator; this is local matter. Third, the human operator that is actually responsible for noting service outages and responding thereto; this may be covered under ICAO human factors guidance. It was agreed that this subtlety in terminology be noted in System Management GM.

7.35 There had been an ad-hoc meeting of system management interested parties from all three working groups, and Paul Hennig introduced an action plan, Flimsy 1, which had been produced as a result of the meeting. This Flimsy is included at Appendix D of this report. This action plan was generally agreed by the group - the airline participation was welcomed

8. AGENDA ITEM 7 - PLANNING FOR FUTURE WORK PROGRAMME

WP312-19 - The Case For A Simple ATN Messaging Service (SAM)

8.1 Danny van Roosbroek presented this paper. It proposed a complementary approach to the specification and subsequent implementation of information interchange requirements for aeronautical applicability, based on more formalised separation of the information semantic definitions from the communications protocol specification. Such an approach has the potential to reduce significantly the message specification and validation timescales, thereby allowing future aeronautical applications to be standardised and published more quickly than has been possible to date. The proposed approach is to define and specify a simple generic messaging service which would be capable of carrying future (yet to be defined) information structures reliably and securely between partners in the context of the ATN. This service would be the SAM

8.2 The SAM would facilitate the migration and transition of existing ACARS-based Aircraft Operating Communications (AOC) and non safety critical ATC communication (e.g. predeparture clearance) from pre-ATN carriers to the ATN. This would not force the airlines to standardise their AOC applications. Airlines desperately want to know how AOC applications will be sent when ACARS becomes saturated in a few years time. They are looking at ATN - we should see how it can be used by external users.

8.3 Paul Hennig said that IATA really appreciated this work - they could almost have presented this paper themselves to the ADSP and ATNP meetings. He saw it as AOC beneficial, allowing non-state requirements into ICAO standardised applications. Standardisation will lead to economies. ATNSI has a contract for this. If WG 3 takes on the task of developing such a concept, IATA would provide support and effort. The concept has already been endorsed by WG 1.

8.4 Frederic Picard pointed out that this was a new architecture and new applications. Existing architectures are suitable - and there was no need for new applications. Basic services are already provided by the dialogue service. Multicast will be provided later, again through the dialogue service. There are significant risks in the provision of two architectures. U/L SARPs will provide both AOC and ATS applications. Current systems are flexible enough to provide private ASEs without going through standardisation. He recommended that it be passed to SG 3 in the first instance - and he wanted to know whether this was a new application, or a full alternative?

8.5 Danny said it was not the intention to come up with a new architecture - we needed to maintain a full backwards compatibility. He was sure that existing applications should continue - but could a SAM be used for simple interfaces? Eurocontrol had had comments that users felt constrained, and would like the freedom to change fields and messages. Paul Hennig said that this is not new architecture - airlines need a standardised API approach. Rene Esser agreed with Danny and Paul that this would provide a communications service to any application e.g. AOC etc. If it was only for AOC, there would be no need for ICAO standardisation. However, if it was to be global user

applicable, there would be a need to standardise applications, and to distinguish between air/ground and ground/ground applications.

8.6 Jean Yves Piram agreed that it was an interesting paper, but was basically unhappy with a technical proposal not based on any clear analysis of the requirement. This has been proposed for AIDC, and received some support. But in the end we chose to use the architecture defined by SG3 to be compatible. If SAM is available, it would be used ground/ground in place of AIDC. There may be some support for ICC. He would agree with Frederic Picard - SG 3 should make an analysis of all points, and report back to the WG.

8.7 This plan of action was agreed by the WG.

9. AGENDA ITEM 8 - WG3 MATERIAL FROM/FOR WGW

9.1 There were no papers submitted under this Agenda Item

10. AGENDA ITEM 9 - CNS/ATM & FANS-1/A - ACCOMMODATION AND TRANSITION

WP312-04 - Issues Raised by Experience of FANS-1 Operations

10.1 This paper, prepared by Tom Kraft, co-chairman of SC198/WG53, was presented by Gregg Anderson. The paper provided descriptions of various issues which have been identified as a result of experience gained from FANS-1 operations in the South Pacific. Solutions to these issues are proposed. These issues may have an impact on future ATN operations, and should be assessed in this light. Referring to some of the issues, Gregg pointed out that the FANS method of timestamping in the cockpit destroys sequencing from the ground. This type of problem comes from a lack of definition of 'expected behaviour'. In addition, Boeing are reviewing the need for a LACK - which may be included in a later FANS package - and not only Europe but also USA will require Mandatory Data Elements for correlation. This paper will also be passed to the ADSP WGs for review.

10.2 Paul Camus noted that timestamping was a significant problem. There was a need for overall consistency for timestamping - we had already had a PDR for ADS on this topic. We must define what is required for uplink and downlink, if only for Flight Data Recorders.

10.3 Gregg Anderson said that the new release of DO 219 will cover timestamping in detail - but it is not yet published. The issue is what are we to do? ATN guarantees timestamp capability, but when should it be applied? One option is at release of message by controller or pilot - timestamp when the button is pushed. He thought this was basically a series of operational problems, which should be passed to ADSP for initial action. However, if it was felt by the WG that we should take further action, he recommended that it should be passed to SG 2 for review. Danny van Roosbroek felt that if it was passed to SG 2, any changes proposed for SARPs should be passed through WG 3. Gregg said the SG2 can look at some things, but there would be no changes to the SARPs, which can provide the capability to cover the issues of concern already. Rene Esser said that if this was presented to ADSP, he would want to see something about NDA operations added - they are different. He wanted to leave the topic open, but would expect the SG to be able to give advice to ADSP.

11. AGENDA ITEM 10 - REVIEW OF ORGANISATION OF SUBGROUPS

WP312-20 - Working Group 3 and its Subgroups - Future Work

11.1 Mike Asbury presented this paper, the purpose of which was to invite comment from members concerning future work, whether the existing subgroup structure continues to be the best means of working, and, if so, to ensure that the subgroups are well supported in their work between now and the next Panel Meeting (ATNP/3), now due to take place in late 1999, when it is likely that the whole Working Group structure will be reviewed again. If the WG accepts that work has to be done, and agrees a mechanism to progress that work, members of the WG must agree to support the work through the provision of the necessary effort, including attendance at meetings, which will allow this work to be carried out. If the current level of Subgroup operation was to continue, they would normally be expected to meet at least once between meetings of the full working group.

11.2 Subject to agreement of a continued means of working, it is not proposed to raise this topic again as an agenda item during subsequent meeting of the working group prior to ATNP/3.

11.3 Gregg Anderson supported the need for continued work on the care and maintenance of the package 1 SARPs, as did Danny Van Roosbroek. Tony Kerr cautioned that any updating and changes would have to be co-ordinated through the CCB, a point that Mike had not included in his paper. Gregg also supported the need for future work, and the need to carry out 'development at risk', operating in parallel with the operational requirements generators. This approach would have reduced the gravity of the situation involving the ATIS ASN.1, since the SG would have been aware of the changes as they were occurring. He agreed with the paper in that industry will continue to develop their own implementations, but will come back for decisions on global requirements and additions.

11.4 Danny was worried about becoming too deeply involved in risk development for fear of the goal posts shifting. We had already experienced this in the development of the current SARPs. There was a requirement to ensure stability of the operational requirements from ADSP to a 95% stability confidence. He supported the need for the current subgroup operation, with the proviso that there was no need for experts to attend WG meetings as well.

11.5 The meeting agreed generally that there was a need to support the Package 1 SARPs, and that work should continue on would-be Package 2 work, e.g. system management, security, future air/ground enhancements and applications and incorporation of CIDIN gateways. The existing method of operation would continue, and would be supported as necessary.

Flimsy 312-02

11.6 Mike Asbury introduced this flimsy, prepared by the Rapporteurs of all the Working Groups. The flimsy proposed that, since there was significant system management requirements in all WGs, it would be more efficient to set up one single subgroup with overall responsibility for the global system management aspects. This would be a subgroup of the Joint Working Group, reporting to, and taking instruction from, the JWG. The SG would be chaired by Jim Moulton, previously chairman of the WG1 SG3. There would still be a requirement for some application specific system management work, which would be done by the existing SGs as required.

11.7 Egon Koopman could support cross WG system management work only if it did not involve another subgroup. Tony Kerr thought it was a practical idea, and would take the majority of SM work for other SGs. Jean Marc Vacher was slightly concerned about work being withdrawn from subgroups altogether. He thought that cross working group co-operation would work without the need to create a new subgroup, through the medium of joint sessions. Jane Hamelink would expect work to come back to WG 3 SGs from the SM SG anyway. Jean Marc and Jean Yves emphasised that WG3/SG3 is the focal point for this WG, and WG 1 SG3 the focal point generally, and surely it could stay like that? Imposition of another subgroup would not be the most efficient way of working.

11.8 This reflected the general view of the WG, and the proposal was turned down by the Working Group.

[It transpired that there had been agreement in the other WGs that the SM SG would be a good idea, and it has been established. It is likely to call on SM expertise from WG 3 for support.]

12. AGENDA ITEM 11 - ANY OTHER BUSINESS

Documentation Tracking

12.1 Danny van Roosbroek raised the question of documentation versions, tracking and distribution. There will be versions of the SARPs which are baseline plus CCB approved changes, and there will be versions with Package 2 material changes. He wanted to know how the documents would be used, and what would be the procedures for transitioning from one to the other. Where would the control lie, and who would be responsible for ensuring that backward compatibility was maintained. Mike Asbury said that the control of the current editions of the SARPs was through the CCB, and they would be responsible for ensuring that there was a coherence among subsequent editions. Material for package 2 would not necessarily be submitted to the CCB at present, but would

more likely be developed for presentation to ATNP/3, emerging later as a new version of the SARPs. We could not honestly make a 'shall' statement from the WG which says that a Version 1 aircraft shall work in a version 2 ATS environment, and vice-versa.

12.2 Paul Camus had asked for formal documentation information which clearly stated that Package 1 was based on an ADS Manual stabilised at a predetermined date. Mike Asbury said that this had already been done - the core SARPs document reference section indicates the version of the ADSP Manual which has been used (version 0.4 dated 20/09/96).

12.3 Gregg Anderson thought that the new requirements for ADS Emergency procedures (see WP312-13, above) could be the first real test of backward compatibility - would an aircraft fitted with updated ADS capability be capable of operating in an environment where the ATC was using the earlier version. SG2, in its development of the changes, would really have to separate out all the issues.

12.4 Jane Hamelink said that, just to add to the confusion, it was likely that a new Manual of Data Link Requirements, which would no doubt lay out future operational requirements and additional applications/services, would be produced by the ADSP Secretariat after ADSP/5 in September 1999.

12.5 Jean Marc Vacher said that this discussion raised a whole new documentation issue, namely what would be the format of the Package 2 SARPs? Would they be produced as amendments to the existing 'special' Manual, or would a new Manual be produced. He could see, like Danny, real problems with versions and compatibility. Danny said he would expect new versions of the protocols to be published, probably incorporating additional safety functions, which could put some of the existing protocols out of date, and how would these be incorporated. This may be an industry problem, outwith ICAO's hands. Paul agreed, highlighting the problem of software control on aircraft.

12.6 Jean Yves Piram said that management of documentation was not a new problem, particularly for this WG, but we must produce constructive suggestions well before the next Panel, so that we don't get ourselves, or rather that ICAO doesn't get itself, in a state where it is unable to cope with the volume of material which may be created. Danny offered to combine with Jean Marc to produce a paper for the next meeting, reviewing the problem, and, if possible, proposing solutions. It was essential to try to scope the problem, even though the ICAO Secretariat, not the Panel, was responsible for documentation management. This paper could also be forwarded to WG 1. Somehow we have to recommend to ICAO to publish documentation using the advised approach.

12.7 The WG gratefully accepted Danny's proposal.

Development of SPACE

12.8 Jean Yves Piram informed the meeting about the expected development of the Study and Planning of AMHS Communications in Europe (SPACE) by a consortium, yet to be formally established, between Eurocontrol, France, Germany, Spain and the UK, under project leadership by France. The project would be funded partly by the European Commission under the same framework as the ACCESS project, already mentioned previously. The goal of SPACE is to define a master plan, including transitional considerations, for the implementation of AMHS in Europe. Jean Yves indicated that, although no formal agreement was yet in place, a kick-off meeting had already been held. Jean Yves took an action to keep the meeting informed of the progress, both formal and technical, of the project, the results of which will be provided to SG 1 to support the current work programme.

13. AGENDA ITEM 12 - DATE AND PLACE OF NEXT MEETING

13.1 The next meeting of WG 3 will take place in the Holiday Inn, Utrecht, in the Kingdom of the Netherlands, from 29 June to 2nd July 1998.

13.2 For information, the schedule for all the ATNP WG meetings is as follows -

June	22	WG1 Security Subgroup
	23	WG 1
	24	WG 1
	25	am CCB/pm JWG

	26	System Management Subgroup
June	29	WG 2 and WG 3 in parallel (Joint session 1100 - 1300hrs)
	30	WG 2 and WG 3 in parallel
July	01	WG 2 and WG 3 in parallel
	02	WG 3

13.3 The Chairman thanked the Member for Brazil, Sr Luiz Castro, for his kind hospitality in hosting the meeting, and for the excellent support the meeting had received from Diniz Promocoos, providing the back-up.

M J A Asbury
 Rapporteur, WG 3
 19 March 1998

ATNP Working Group 3 - Twelfth Meeting

16 - 20 March 1998

Rio de Janeiro, Brazil

AGENDA

1. Review/approve meeting agenda
2. Review report of the 11th meeting of WG3 (Redondo Beach)
3. Review status/outcome of ADSP Joint WG Transition Meeting, ATN WGW and CCB meetings, and ANC actions
4. Air-Ground Applications
 - 4.1 Subgroup 2 report
 - 4.2 Review Trials and Implementation Activities
 - 4.3 Briefing on Potential Defect Reports and CCB working (F Picard)
 - 4.4 Review and Status of Draft Guidance Material for SV2
5. Ground-Ground Applications
 - 5.1 Subgroup 1 report
 - 5.2 Review Trials and Implementation Activities
 - 5.3 Briefing on Potential Defect Reports and CCB working (J-M Vacher)
 - 5.4 Review and Status of Draft Guidance Material for SV3
6. Upper Layer Communications Service
 - 6.1 Subgroup 3 report
 - 6.2 Review Trials and Implementation Activities
 - 6.3 Briefing on Potential Defect Reports and CCB working (T Kerr)
 - 6.4 Review and Status of Draft Guidance Material for SV4
7. Planning for future work program
 - 7.1 Air-ground Applications
 - 7.2 Ground-ground Applications
 - 7.3 Upper Layer Communications Service
 - 7.4 CNS/ATM Package 2
8. WG 3 Material for/from WGW
9. CNS/ATM-1 & FANS1/A - Accommodation, Transition and System Compatibility
10. Review of Organisation of Subgroups
11. Any other business
12. Date and Place of Next Meeting (29 June - 3 July 1998, Utrecht, Netherlands)

LIST OF WORKING PAPERS

ATNP WG3 - Twelfth Meeting - Rio de Janeiro, Brazil - 16-20 March 1998

Paper Number	Agenda Item	Presenter	Title
12-0	2	J Y Piram	ATNP WG3 11th Meeting - Redondo Draft Report
1	1	M Asbury	Agenda
2	1	M Asbury	List of Working Papers
3	1	M Asbury	List of Attendees
4	9	T Kraft	Issues Raised by Experience of FANS-1 Operations
5	6	T Kerr	SME 4 Report
6	3	T Kerr	SARPs Stability
7	6	T Kerr	Draft SV 6 Material
8	6	S v Tree	Subgroup 3 Report
9	6	S v Tree	Connectionless Upper Layers
10	(6) 11	F Picard	System Management Requirements for Air/Ground CNS/ATM Package 1 Applications
12-11	(6) 11	F Picard	Elements of Management Information Related to ATN Applications Layer
12	4	F Picard	SME 2 Report
13	4	G Anderson	ADS Emergency/Urgency Requirements
14	4	G Saconne	CM addressing Paper in AEEC Report
15	(6) 8	T Calow	Security Aspects Forwarded by WG 1
16	3	M Paydar	An Update from the Panel Secretary
17	4	D v Roosbroek	Eurocontrol Trials End System
18	4	D v Roosbroek	Data Link Application Servers in Europe
19	7	D v Roosbroek	The Case for a Simple ATN Messaging Service (SAM)
20	10	M Asbury	WG3 and its Subgroups - Future Work Programme
12-21	3	G Anderson	ADSP WG Reports - SOFT COPY ONLY
22	5	J Y Piram	SG 1 Report
23	5	J M Vacher	SME 3 Report
24	(6) 8	J M Vacher	Analysis of Threats
25	(6) 8	G Mittaux-Biron	ATN Upper Layers Security
26	4	M Asbury	SG2 Report
27	3	S v Tree	Report of the CCB Chairman
28	4	F Picard	Proposed New ASN.1 for ATIS
I/P12-1	(6) 11	F Picard	System Management Application - The fast Management Information Protocol (MIP) Option
2	12	T Hagenburg	Forthcoming ATNP WG Meetings in Utrecht
3	(6) 11	P Tupitza	CPDLC System Management
4	6	P Tupitza	Proposal 2: MO Template for ICAO SARPs
5	6	Tony Kerr	ATN System Management Material from ATNP WG 1
6	6	J M Vacher	Overview of MHS Management Standards
Flimsy 1	6	P Hennig	SM Resolutions and Action Plan
Flimsy 2	6	M J Asbury	Proposal for a JWG SM Subgroup
Flimsy 3	4	G Saccone	Request - IFALPA Position Paper on CM Implementation
DP12-1		M J Asbury	Report of the meeting

ATNP WG3 Twelfth Meeting - Attendance List

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JOINT WG2/3 FLIMSY

SYSTEM MANAGEMENT RESOLUTIONS AND ACTION PLAN

1. Any Managed Object (MO) deemed important enough to be detailed in either SARPs or Guidance Material must be defined using GDMO to assure interoperability. This applies regardless of whether or not any particular MO is specified to be exchanged across administrative boundaries (manager-manager or agent-manager).
2. A baseline managed object containment tree has been proposed. Between Rio and Utrecht, WG2 and WG3 system experts will review the proposed MO containment tree for format and content, focusing on the subtrees in their areas of expertise. the goal is an agreed-to MO containment tree at Utrecht.
3. Another goal for Utrecht is identification of at least one (1) managed object (MO) which all States and Organisations agree to share, agent-to-manager. If at least one (1) MO cannot be identified and agreed to by Utrecht, then all system management material may only be Guidance unless 'health of the system' suggests SARPs are necessary for what, in essence, is a local matter.
4. IATA will present a paper in Utrecht explaining how commercial airlines intend to manage their airborne resources.