ATNP/WG 3

WG316DP1B

AERONAUTICAL TELECOMMUNICATIONS NETWORK (ATN)

WG3 - (ATN Applications and Upper Layers) Sixteenth Meeting

Naples, Italy

18 – 21 May 1999

Agenda Item 12: Any Other Business

Draft Report of the 16th meeting of WG3 (Naples)

(Presented by M J Asbury)

1. INTRODUCTION

1.1 The 16th meeting of the ICAO Aeronautical Telecommunications Network Panel Working Group 3 was held in the Royal Continental Hotel, Naples, from 18 – 21 May 1999. The meeting was chaired by the WG3 Rapporteur, Mr M J Asbury, and was attended by some 29 Members from 10 States and 3 International Organisations.

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

2. RECOMMENDATION

2.1 Members are recommended to review the attached Report. It will be placed on the CENA server, and comments should be forwarded to the Rapporteur as soon as possible

REPORT OF THE 16TH MEETING OF THE AERONAUTICAL TELECOMMUNICATIONS NETWORK (ATN) WG3 - (ATN APPLICATIONS AND UPPER LAYERS), NAPLES, ITALY, 18 – 21 MAY 1999

1. INTRODUCTION

1.1 The 16th meeting of the ICAO Aeronautical Telecommunications Network Panel Working Group 3 was held in the Royal Continental Hotel, Naples, from 18 – 21 May 1999. The meeting was chaired by the WG3 Rapporteur, Mike Asbury, and was attended by some 29 Members from 10 States and 3 International Organisations. 39 Working Papers (WP) and 4 Information Papers (IP) 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 Those presenting papers, replying or commenting included –

Mike Asbury (MA)	Jack McConnell (JMc)
Thomas Belitz (TB)	Jim Moulton (JM)
Mike Bigelow (MB)	Gerard Mittaux-Biron (GMB)
Paul Camus (PC)	Masoud Paydar (MP)
Francesco Cecere (FC)	Frederic Picard (FP)
Jane Hamelink (JH)	Jean-Yves Piram (JYP)
Paul Hennig (PH)	Greg Saccone (GS)
Jean-Marc Vacher (JMV)	Steve Van Trees (SVT)
Tony Kerr (TK)	Danny Van Roosbroek (DVR)
Manfred Okle (MO)	Manual Garcia (MG)

1.3 The meeting was jointly hosted by SICTA and ENAV, and Francesco Cecere welcomed the members to Naples. The meeting was initially chaired by SVT, due to MA being delayed en-route 'due to air traffic'. MA eventually appeared on the afternoon of the first day.

1.4 FC announced that on Tuesday, 25 May 1999, there would be a live demonstration of ATN aircraft at Naples Airport. SICTA jointly with Eurocontrol and with the participation of Alenia Marconi Systems and ENAV had organised this trial. The demonstration was also sponsored by the administration of the Napoli Province and the Gesac-BAA airport company.

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

2.1 The agenda at Appendix A was approved. The joint meeting with WG 2 would be held on the morning of 19/5/99, and would include agenda items 3.3, 3.4 and 3.5 from the WG 3 agenda.

3. AGENDA ITEM 2 – REVIEW REPORT OF THE 14TH MEETING OF WG 3 (BORDEAUX)

WP 4 – Review of the Draft Report of 15th Meeting of WG 3

3.1 MA presented the report, which had seen little change to that presented to the WG at the last meeting. It had been available from the CENA server for the last two months, during which time no-one had proposed any changes.

3.2 The Report was reviewed on a page-by-page basis. There was only one minor change - MO noted that on page 15, para 6.5, in the penultimate sentence 'AFTN' should be changed to 'AHMS'. The draft notes were approved – since the only change was minor, MA did not propose to re-post the notes on the server.

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

3.1 ADSP WG A & B Meetings

WP 8 – Report of ADSP WG A & B meetings, Adelaide & Ottawa

4.1 Mike Asbury reported that ADSP Working Groups A & B have both met twice since the last ATNP WG 3 meeting in Honolulu – ADSP Working Groups A & B met in Adelaide between 1st and 12th February, and then again in Ottawa between 26th April and 7th May. In both Working groups, the emphasis was on the preparation of Annex and ICAO Document material for presentation to ADSP/5, due to be held 18 – 29 October 1999.

4.2 WG A is principally concerned with ADS (contract) and ADS-B (Broadcast). Operating procedures have been developed and material has been proposed principally for inclusion in for ICAO Doc 4444 (Procedures for Air Navigation and Rules of the Air), Annex 11 (Air Traffic Control), Annex 10 Volume 2 (Communications) and Annex 1 (Licensing). WG A also has prepared a draft ADS-B Manual, and an ADS-B Concept paper for presentation at ADSP/5.

4.3 WG B is concerned with all other elements of ATS data link applications, including Context Management, Controller Pilot Data Link Communications, Data Link Flight Information Services and ATS Interfacility Data link Communications. Procedures have been developed, and material has been proposed for inclusion principally in Annex 10 Vol 2 and Doc 4444. WG B has prepared a draft Manual outlining the Concept of Required Communications Performance, taking into account all aspects of performance in the communication of ATS messages, both human and technical.

4.4 Together, both WGs have been responsible for updating and amending ICAO Doc 9694, Manual of ATS Data Link Applications, which has been printed and is due for imminent release by ICAO. Both WGs have also been instrumental in approving an ADS Lexicon, which seeks to define all terms used in ADSP data link applications. Both groups have also looked at Security requirements, and future applications of the data link technology.

4.5 JMV said that he had talked to Jean Francois Grout, the French ADS Panel representative, to see what effect the introduction of material and the resulting discussion of AIDC in the Working Group would have on the work of this Panel. Jean Francois had indicated that there would be a minor knock on effect, and that he would accordingly submit a PDR for consideration by the CCB. JYP would like to know how this task squared with the ADSP intention to input material related to CPDLC into the Annex, and he would like to know what this material was. MA said that a) by the time the ANC had agreed the material for inclusion into the Annex, JYP would long have completed his task, b) the CPDLC material was probably going in as a complete new chapter, with little knock-on effect to the rest of the document, certainly none relating to ground/ground communications, and c) the two ICAO Secretariats (ADSP and ATNP) would have to agree the inputting, and any resulting bureaucratic tidying up that would be required – not his problem. MA would pass the draft proposed CPDLC material to JYP so that he had some idea of the future contents. JYP continued to be concerned, noting that in order to do his proposed task properly, he would have to be aware of current and planned amendments for the document. He agreed to discuss the problem further with MP, outside the meeting.

4.6 JYP noted that one paper to ADSP, on AIDC, related to automatic co-ordination. Normally material on co-ordination would go into PANS/RAC, but apparently there was some hesitation on the part of ADSP in including this material in the PANS/RAC, because it related to automatic, rather than controller-driven, procedures. He asked members present to urge their ADSP members to agree the inclusion of this material in PANS/RAC, for completeness.

4.7 FP said that there appeared to be somewhat of a stalemate regarding METAR data – he had been looking to this meeting of ADSP to finalise the METAR operational requirement, and approval of the ranges and resolutions – this appeared not to have been done. MA said that there was still a problem with some of the parameters – about 85% of the values had been determined, but there was still some uncertainty between the ICAO Met section and the World Met Organisation relating to the remainder. FP said that if the information was not forthcoming, then the METAR service would not be ready for ATNP/3, and we would have to inform WG 1 that the METAR service SARPs would not be

included in the initial Package II proposals. MA said that he would seek clarification from the ADSP Secretary soonest.

3.2 CCB Report

WP 12 – CCB Chairman's Report

4.8 SVT, Chairman of the CCB, gave a verbal report, since the meeting had only finished the previous day, and his report was still being processed. Part 1 of the 9th Meeting had been held on Monday 17th May. The CCB will deliver Amendment 1 to Doc 9705 to MP/ICAO by 21st May. The 200th PDR has just been submitted, in a period of 18 months – the first 100 took just three months to appear. As the volume has slowed down, so the quality of the PDRs have increased, reflecting ongoing implementation work, rather than just an initial review of the material, and the highlighting of editorial errors. The Amendment is based on the outcome of some 80 resolved PDRs (there were 90 against the base document. It is likely that the amendment will take the form of new editions of SV 2 and 5, because that is where the majority of the changes occurred, with change pages for the other SVs, (SV 3, for example, will expect to have about 10 change pages.) WP 12, when available, would consist largely of tables, showing the progress of all the PDRs.

4.9 MP in his initial briefing, and earlier circulation of his report, had suggested that the WGs might like to look at the future of 'life after ATNP/3. SVT said that the CCB had discussed this, and would be happy to exist under an ATNP study Group, if the Panel was not going to continue beyond ATNP/3.

Agenda Items 3.3, 3.4 and 3.5

4.10 MA said that although Agenda Items 3.3, 3.4 and 3.5 would be discussed at the joint meeting with WG 2 on the morning of 19/1/99 (the report of which is at Appendix E), he wished to discuss the question of Security (Agenda Item 3.5) in this WG prior to the joint meeting. He therefore asked MB, as Chairman of the WG 1 Security Subgroup, if he could give a brief indication of where the SSG had reached in its work. In addition, there were papers on 3.4 (System Management) which had been prepared specifically for this WG, and would not be discussed at the joint meeting. Also, due to the agenda having to be amended because of the non-arrival of MA, MP had presented his report individually to the working groups, although matters arising would be discussed at the joint meeting.

3.3 ICAO/ANC Activities

WP 22 – An Update from the Panel Secretary
WP 38 – ATNP – Memo/4 (12/2/99) to ATNP Members – Work beyond ATNP/3

4.11 Masoud Paydar presented WP 22 which provided an update of recent developments in ICAO (since the last round of working group meetings in Honolulu, USA) that were relevant to the work of the ATNP. He stressed the need for WG3 to commit to an ATNP/3 deadline, and to consider its fate after ATNP/3. He confirmed that Jim Lenz was the new US Panel member. The slot of 7 to 18 February 2000 has been reserved for the third meeting of the Panel. If for any reason, the Panel won't be ready for its third meeting in February 2000, the next available slot would be 3-13 October 2000. In that case, the material finalised at the meeting can be expected to be approved/adopted/published for applicability in November 2002. A tentative agenda for ATNP/3 was presented (Appendix D) to working group meetings for their consideration, pending general agreement by working groups (consolidated by Working Group 1).

4.12 MP also pointed out that the need to revise and update Annex 10, Volume II (Communication Procedures) has been evident for some time. This has been due to the fact that existing provisions had been developed for AFTN and radiotelephony systems and as such, they don't adequately cover new data links and applications (for both air-ground and ground-ground). The Secretariat recently proposed that a new task, entitled "aeronautical fixed service (AFS) procedures", be created as part of the technical work programme of the Air Navigation Bureau (ANB). This task is to be progressed by

ATNP (for data communications). He suggested that WG3/SG1 was probably the only group with the relevant expertise to take on this task.

4.13 MP had sent WP 38 to all members. He requested that members should consider life after ATNP/3, since although there would be plenty of ATN-related work to do, it was more likely to relate to enhancement, maintenance and implementation, rather than the development work currently the domain of the ATNP. In addition, he was somewhat uncomfortable at the apparent decline in the level of participation by members at WG meetings. He urged a greater level of participation.

4.14 JYP, on behalf of SG 1, accepted the task to review Annex 10 Vol II, relating to data communications, and would add it to the work programme.

3.5 Security

4.15 MB said that initially, the SSG looked at a standards based approach, using experience and techniques from, among others, the e-mail and financial sectors, assuming a basic public key infrastructure. The advantages of this were proven key management techniques, and a lack of need to exchange secret information. The disadvantage was that the key lengths required to provide a decent level of security were large – long lived key lengths were typically 1024 bits or greater. Also, the SSG were not really sure of the ADSP requirements – the general statements were difficult to quantify. About a year ago it had become obvious that the SSG really had to develop a specific operating technique for the ATNP, but it had to be a system that anybody could buy into. They had been very fortunate in securing cryptographic advice from NASA specialists, who had waned against the consequences of short keys giving a sense of false security. The SSG had then investigated a process using asymmetric keys for initial authentication, and symmetric keys for data transfer. This had disadvantages of the need to move information around that had to stay secret. They had now agreed to a system which allowed agreement over secret keys, without transmitting secret information. the SSG were consulting with WG3 SG3 relating to the upper layers work, and with SG 2 relating to the use of security in CM.

WP 23 – Security Considerations

4.16 MA then presented this paper, relating to the requirement to assess the need for security, prior to developing the mechanisms, if indeed they were needed. He said that the principle reason for introducing a level of security into the operation of a data link based Air Traffic Service was to enhance safety by reducing the risk of an unauthorised person or organisation sending an instruction or information to an aircraft, generally with malicious intent, which could result in a deviation from its planned and approved trajectory, with possibly serious consequences. Thus the use of security is an exercise in risk *mitigation*, rather than in risk *elimination*. Various levels of security can be introduced, ranging from zero to full end user authentication and message encryption. Each additional level of security above zero imposes a cost and time penalty, with additional bits on the line, possible exchange of system messages, and logistics of the distribution of security information, e.g. public and private keys. There was a need to look realistically at the operational needs and the general safety budget, and to keep things in proportion. A full risk assessment analysis should be carried out, based on both operational and technical expertise, in order to assess the level of security required to be implemented, and the ATNP should not act hastily to prescribe security over and above that which already exists through the use of the ATN until such a risk assessment has been carried out.

4.17 MP agreed substantially with the points in the paper – he had been looking for such a paper, querying the need and proposing risk analysis. He said that additional security provisions may be an AOC requirement, but he was doubtful if it was really needed for ATS.

4.18 DVR agreed that there was a need to carry out risk analysis – this had been identified in a paper submitted by Eurocontrol given as early as March 1995. However, he saw the same problem affecting Security as was affecting the X-500 Directory – we might not need it yet, but it was a building block for the future, when he was sure we would need it, and he therefore fully supported the work.

4.19 MB seemed rather hurt by the suggestion in the WP that he and the SSG were proceeding headlong down an unapproved route. The need to develop security mechanisms was clearly stated in the work programme for ATNP approved by the ANC post ATNP/2 – nowhere was there an indication of the need to carry out a risk assessment. The Eurocontrol paper had outlined three security risks (masquerade, replay and modification), and the SSG were developing protection against those. He accepted that there was also the need to support zero security in Package I. MB also felt that there were questions posed in the WP which a security analysis could not answer anyway. He would encourage a risk analysis – this would give States an idea of the appropriate levels of security needed – he saw his work as preparing the mechanisms to allow the necessary security to be implemented when it was needed. We needed to be ahead of the game at this stage, hence the forceful nature of his work programme.

4.20 FP raised SG2's concern to get as soon as possible from WG1/SG2 and/or WG3/SG3 the material needed to modify the CM Application SARPs to support security (e.g. ASN.1 description of keys and signatures).

4.21 SVT reported that the US had done an audit of data link operations, and one of the points of concern was the possible safety critical use of an unsecured data link service. He saw the need to have to work on the technical building blocks now for a service that will be needed in the future – he had no doubt about that. It was probably true to say that there was no short-term cost-benefit in security implementation, with the programme at its current status, but there were significant long-term benefits.

4.22 MP said that questions would be asked about the number of bits on the wire, and how many computer actions would be required to break a security system. We had to be prepared to answer questions with quantifiable replies. MB pointed out that the numbers quoted in MA's paper were out of context, and took no account of the technology which could should a small number of bits, yet provide a high level of security.

4.23 JYP thanked MB for his work – but he thought that the comments from MA and MP were not relevant to this WG 1- they should be made to WG 1. DVR said that IFALPA had requested security both in ADSP and at ATNP WG 1. Preliminary safety analysis work was being done in the European EOLIA programme already, but he thought that the work needed to be done prior to any full implementation of ATN. MB said that IFALPA had wanted message encryption, but at Honolulu they had been convinced by the SSG that there would be no need to go as far as that – end to end authentication and message security would be enough.

4.24 JYP indicated that in his report on the work of SG1, reference would be made to the need for security relating to the AMHS. However, he recognised that the implementation caused a growth in complexity, and he was a bit uncomfortable with the possible levels which seemed to be required. SG 1 had considered that the requirements could be met by asymmetric keys in a ground/ground environment, and he was concerned that we may be implementing too high a level of security. Nevertheless he agreed that the work should go ahead. MB indicated that the SSG thought different security would be needed depending whether we were looking at an air/ground or a ground/ground service.

4.25 MA thanked MB and the meeting for their comments – he wanted to have this discussion in the group before the topic was aired in the wider forum of the joint meeting the next day.

3.4 System Management

WP 14 – Sub Volume 6 – ATN Systems Management

4.26 TK presented an updated draft of the proposed SV 6, relating to system Management. There had been a meeting of the Joint Subgroup on Systems Management at Palo Alto. This version was considerably slimmed down from the previous version, because there were still issues yet to be addressed, and there were no cross-domain managed objects agreed to date. However, a place marker had been left (see section 6.5 of the paper.) There were two communications profiles

available for the CMIP – one using the full seven layer stack, and the other using the fast upper layers protocol as described in SV 4. MA asked whether he thought that the SV 6 could be ready for a February Panel Meeting. TK said, tactfully, that there was still a great deal of work to be done. The WG noted the ongoing work, but raised no significant comments.

WP 15 – Draft SV 6 Guidance Material

4.27 TK presented this paper, which was the companion to WP 14. Again this was slimmer than previously because all Managed Objects have been removed. WG 2 is considering whether information relating to routers should be included in SV 5 (The Internet), rather than in SV 6. There was also a question of whether management information was Guidance Material or SARPs – TK felt that if it was cross-domain information, then it should be standardised, and be in SARPs. One outstanding question related to exactly what Management Information would be sent cross-domain – this had not yet been decided.

3.6 Other ATNP WGs

4.28 Paul Hennig (PH), Chairman of WG 1, gave a brief verbal report of the previous meeting, held on Honolulu. Points he noted included the fact that there had been some discussion concerning VDL Mode 2 and VDL Mode 4, since the AMCP working groups were meeting at the same time. There was a question of compatibility with ATN SARPs. Subsequent discussion with VDL 2 experts indicated: a) there are VDL 2 defects, and b) both the US and IATA stood ready to present papers at AMCP/6 in case they were needed. These papers were presented. JH said that she had attended a VDL 4 subgroup meeting, and for sure VDL 4 was incompatible with the ATN SARPs. Further discussion on AMCP issues elicited the requirement for enhancements to Core and Doc 9705 SV-1 SARPs to facilitate the newly adopted AMCP SARPs for HF Data Link.

4.29 In addition, PH reminded WG 3 that there was a requirement to prepare a Flimsy for WG 1 indicating the deliverables against the ATNP/3 Agenda Items, and also to address the question of possible version number changes to SVs of Doc 9705.

4.30 JYP noted that there was a European consortium looking at an AMHS implementation, and institutional questions have been highlighted, relating to the definitions of domains – public or private – defined for routing purposes. This sort of problem was likely to occur more often, and it wasn't really a technical issue – nevertheless people were looking for solutions. WG 1 would be kept informed, through the WG 3 briefing.

5. AGENDA ITEM 4 - AIR-GROUND APPLICATIONS

4.1 Subgroup 2 report

WP 6 – Report of WG3 SG 2 (Air/Ground Applications)

5.1 The 20th Meeting of the ATNP WG3/SG2 (Air/Ground communications) was held in Eurocontrol Headquarters, Brussels, from 1 – 5 March 1999. Work continued on the development of future logon procedures. The concept was not a true 'server' concept, but did allow an aircraft to get information for up to four other ground facilities from the called facility. It was suggested that the server development might be a new 'mini-application'. This would simplify CM, which would revert to an address passing facility, which was what was originally intended. There would have to be a technical analysis of the proposal.

5.2 The SG discussed how the implementation of security would affect the air-ground applications. It was anticipated that CM would be the main vehicle for the exchange of security information – session keys (allowing one time logon use) would be exchanged through CM.

5.3 The SG had disagreed with the way that the Eurocontrol based PIT trials team were implementing the ATN SARPs, particularly relating to the use of Error messages. Representations to the PIT team indicated that they were interpreting requirements to the letter.

5.4 The SG reviewed a list of permitted CPDLC responses as preparatory work for a Protocol Implementation Conformance Standards (PICS) review. They were considered as a possible addition to the SARPs with a statement that use of any message outside the set would be non-SARPs compliant.

5.5 Regarding the updating of the METAR service, there had been ICAO ADSP liaison work with the METLINK group. The FAA were still reviewing the proposed parameters, ranges and resolutions – as far as they were concerned the METAR requirements had not yet been finalised. It might be possible to develop a new service in FIS – String Exchange Service – which would allow for the exchange of strings of information. This could be used for METARs, NOTAMs etc. The SG will investigate the trade-off for using either a string service or a free text string for the METAR service.

5.6 The concept of PICS (Protocol Implementation Conformance Statements) for air/ground applications had arisen about 9 months ago as a result of a Eurocontrol initiative. The Eurocontrol SG members had developed a common format across all the applications, in a way that would readily allow a comparison of completed proformas/profiles by automation. The ADS and CM PICS/OICS were reviewed, and a revised draft would be circulated. A paper outlining procedures and format would be prepared for presentation to the next WG 3 meeting.

5.7 The next meeting will be held from 12 – 16 July 1999 in Vancouver.

4.2 Trials and Implementation Activities

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IP 2 – Status of the European Link 2000+ Programme

5.8 DVR presented this paper, noting that Eurocontrol was in the process of changing the name of this programme. The objective of the programme is the implementation of an operational air-ground data link service for en-route ATC in the 2002-07 timeframe. A fundamental assumption of this programme is that this objective can only be realised by using a communications infrastructure that is shared for both ATS and AOC purposes. A proposal is being submitted through the Eurocontrol approval procedures, with the expectation of Master Plan and Business Case approval by the Provisional Council by the end of April, 2000.

5.9 PC asked for clarification on what was meant by 'shared communication infrastructure' for ATC and AOC. DVR replied that the ATN had the potential to carry both ATS and AOC traffic. The European data link implementation programme does not include ACARS for ATC and AOC purposes in its scope. GS asked whether this would mean that a common ground system (FDPS) would be developed for all European ATCCs. DVR replied that the Eurocontrol e-FDP programme foresaw the development of a common FDP kernel for future ATC systems. However, the implementation timescales of an e-FDP were judged to be beyond those of the European data link implementation programme. Therefore, existing ATC systems will be considered as the starting point to be approved to meet the requirements of the European data link programme.

Agenda Item 4.3 – Briefing on Package 1 Maintenance, PDRs and CCB Working

5.10 FP reported, as SME of SG 2, that there were only two PDRs outstanding – one related to CPDLC, and the other editorial, and applicable to all SV2 applications. He reviewed the PDRs which had been progressed since the last CCB meeting – of these, one was a Class A, and all had RESOLVED status, except for two which were attached to the paper. He reviewed the unresolved PDRs – one was only not resolved because it was a blanket editorial PDR, kept open until the last minute. It would be closed with the forwarding of Amendment 1 to ICAO. The other PDR related to a suggestion that the definition of FrequencyVHF in CPDLC and AIDC did not seem correct. MA had mailed a reply, indicating that the ranges and resolutions were correct, with a range of 0.005 MHz allowing for the 8.33 channelisation, and a maximum range of 137.000MHz conforming to the ITU-T frequency authorisation, even though 137.000 was not used by aviation. The PDR was therefore rejected.

5.11 There were two new PDRs – one related to new Chapter 8 for both CM and ADS, based on changes arising from the development of the PICS (this would be a common PDR) and the other as a consequence of the WG's firm decision taken at the 15th meeting that Message Intent Tables would remain in Doc 9705, even though the master version would be contained in Doc 4444 – PANS/RAC. MP indicated that he required a form of words to be paced at the head of the tables, drawing attention to the fact that the master version was contained in Doc 4444. He and FP agreed a form of words, which was submitted to the CCB for approval at its ad hoc meeting on 21 May 1999.

5.12 Referring to the proposed amendment to Doc 9705, MP said that reprinting SVs 2 and 5 would lend a better quality to the revisions. There was a possible option which would be to reprint the whole document – it was a pretty short print run, since they were only proposing to send one to each State, with a few spare. He would investigate this, and report back.

WP 32 – Proposed Change Pages for Doc 9705 Edition 1/Amendment 1

5.13 FP introduced this paper, which was a cover for the revised SV 2, available in soft copy only, due to size, and only in Wordperfect format. FP said that all the changes were highlighted, and he saw little point in a page by page review of the document at this stage – it was virtually camera ready copy for dispatch to ICAO.

WP 28 – Proposed New Chapter 8 for ADS SARPs
WP 28A – Proposed New Chapter 8 for CM SARPs

5.14 Introducing WP 28, FP noted that the subsetting rules specified in Doc. 9705 for the airborne ADS systems mandate data-link aircraft supporting the ADS application to be able to "operate" the four types of ADS contracts, i.e. demand, event, periodic and emergency. It is likely that, in the "real world", only certain types of ADS contract will be mandated in the aircraft, depending of which ADS-based data link services are set in operation. (A typical example is the PETAL-II project in which American Airlines aircraft will operate the ADS demand contract only, the other ADS contracts being not used at all.) SG2 proposed to add more flexibility in the SARPs by defining operational options for the airborne ADS systems. These systems must be able to process the ground-initiated request for the establishment of any type of ADS contract (i.e. to interpret the request and to respond either positively or negatively) and they have to be able to operate at least one contract type (demand, event or) periodic contract. In addition, the capability of sending emergency reports was now a choice left to the system designers.

5.15 Some tables would be removed from the existing Chapter 8, and would resurface in the PICS, and the changes would of course result in a PDR.

5.16 GS, presenting WP 28A, said that the development of a need for increased flexibility of operation has resulted in similar changes being made to better define operational options for CM. Again, this would result in a PDR, but since the reasons and requirements were so similar to the ADS, a combined PDR would be submitted. There would be no changes in bits on the line, and no backward compatibility problems.

5.17 FP said that there were no changes anticipated to Chapter 8 for CPDLC or DFIS. The WG agreed the changes, and the submission of the PDR.

Agenda Item 4.4 - Post Package 1 Work

WP 19 – Package 2 CM Server Enhancement Redlines
WP 20 – Package 2 CM Backward Compatibility Redlines

5.18 GS presented the two papers, which were revised covers for data already presented in Honolulu in PDR format (W315w25 and 26). At this meeting it was confirmed that the changes were not in fact PDRs, but were Package 2 enhancements. The revisions to the covers reflect their changed status.

5.19 PC appreciated the work done, but asked where the operational requirement for this had come from – he did not recollect it being passed down from the ADSP. GS said that the OR had come from air and ground implementers, including the FAA, who appreciated the economies which could be achieved using the server concept. MA said that the ADSP were aware of the need for a server, but were at present too involved with the up-coming Panel meeting to develop the details. It would no doubt be discussed at the first meeting of ADSP after the Panel. PC asked about the FAA Baseline 1 and 1+ implementations, and whether they would be SARPs based, or if they would adapt the SARPs for servers. GS said that CM would be used as in Package 1 – there would not be any air initiation. but they were looking to include the server concept in Baseline 2 and beyond.

WP 37 – ATN Upper Layer Architecture – Use of the Application Context Name in Application Version Negotiation Process

5.20 FP presented this paper, offering a possible alternative means of supporting a CM server concept. He appreciated that his paper might be too late, but it was presented to indicate possible options, and to pass on the information. GS was in effect developing a functional extension to the Version 1 ATN Context Management Application. This resulting enhanced CM application would support the "CM server" concept, which allows an aircraft to request information for up to four different facilities, and the ground system to return that information either in response to that request or unrequested in the form of a modified update.

5.21 However, FP considered that the server capability must not be considered as a modification of the current CM functionality but as an additional functionality, i.e. as a new functional unit which would be run optionally in addition to the core CM functionality (Package-1 CM). In the OSI Application Layer Structure model, such an application functional unit can be represented in an ASO by a new ASE, identified here as the CMS ASE (CM Server ASE). The CM Application Entity could be formed by two co-existing ASEs, namely the CM ASE and the CMS ASE, only one being activated on an open association. The selection of the "active ASE" would be negotiated by the upper layers via the Application Context Name carried by the ACSE APDUs.

5.22 FP saw the advantages of this as keeping the current CM ASE unchanged, meaning in particular that the CM protocol version would not be rolled. Since a CM ASE would never talk to a CMS ASE, the interoperability between CM application entities would be guaranteed by the ATN Upper Layer Architecture (ULA).

5.23 However, it had to be admitted that the Package-1 ATN ULA described in ICAO Doc. 9705 Edition 1 did not manage the Application Context Name very well. Because the ACSE Application Context Name parameter is used to transfer the Dialogue Service User version number to the other side, there was some confusion between Application Context Name and Version Number. The consequence was that in practice there was no way to identify more than one application context per ATN application in the current ULA. Thus there was no real possible negotiation in the ATN ULA of the application context to be in use over the association being established.

5.24 FP recognised that the current version of the ATN ULA SARPs need to be modified to support a real Application Context Name identification and negotiation, and this would not be backwards compatible. He proposed that there should be a joint SG2/3 meeting to discuss the option, prior to raising a PDR. SVT thought that the concept was well thought out, but would result in a Class A PDR, and was it worth it? GS said that the real question was at what point did we stop tinkering with the current application, and sit down and develop a new AE, with different functions, including version number tracking.

5.25 It was agreed that at present the WP 19/20 proposals would have to suffice, and we would treat FP's paper as a future proposal – perhaps post ATNP/3. There would be no need for a joint WG meeting at this stage.

6. AGENDA ITEM 5 – GROUND-GROUND APPLICATIONS

Agenda Item 5.1 – SG 1 Report

WP 5 – Report of WG3 SG1 – Ground-Ground Applications

6.1 JYP gave the report of SG1. There had been one meeting since the Honolulu WG 3 meeting. Current maintenance of the Package 1 SARPs centred round the ATSMHS, and in particular an old PDR related to the avoidance of AFTN-prohibited characters in AMHS. It had been decided that this was really a Guidance issue, rather than SARPs, and the appropriate words would be produced. There had been no specific maintenance activity associated with the AIDC SARPs. Work had been taking place on the extended ATS message service, and a first draft of the Package II SARPs had been produced. Work was going ahead strongly on the CIDIN/ATN gateway (see WP 29 below). Work was also going ahead related to the AMHS use of a Directory (see IP 3 below).

6.2 JYP indicated the status of the work achieved by the SG in relation to its target deliverables – this was given in Appendix A to his paper. There had been a significant improvement, and he would expect all objectives to be achieved by the Panel Meeting. He would deliver Proposed Draft SARPs for the AMHS Extended Service, SARPs for the CIDIN/ATN Gateway and X.500 for AMHS to Working Group 1 ready for ATNP/3.

6.3 Serguei Nersessian will investigate whether the CIDIN/ATN gateway specification presented by SG 1 met the Russian concerns expressed at ATNP/2, and report to ATNP WG 3 before ATNP/3, in order to allow any remedial action required to be taken. The SG 1 Chairman would keep Serguei informed of any changes to the specification.

IP3 – Report on the AMHS Use of the X.500 Directory

6.4 MG presented this paper, describing the use that the AMHS will make of the X.500 Directory services. In essence, the directory is a distributed database, with data retained in various servers across a network. The AMHS will use the information held in the directory information base to facilitate addressing across the network. The current work is focused on the identification of the data structure to be stored in the X.500 Directory for AMHS purposes. As a first step, an ISO profile has been generated with the objective of permitting an X.500 implementation association to the MHS. In addition, issues related to the development of an extended AMHS service have been studied, including security issues and storage of the CIDIN/AMHS gateway information. Finally, an analysis of the material and its integration with the SV 7 (Directory Services) has been carried out. The paper recommended an approach for the specification of the ATN Directory in support of the AMHS.

6.5 JYP summed the work up by saying that they were not working on the protocol, but on the objects and attributes. MG said that the emphasis of the work was on the identification of the data structure to be installed in the X.500 directory. GS identified that the references all seemed to be to the 1988 X.400 and X.500 standards – the updated 1993 version contains several significant differences, and he felt that they should be working to the latest version. MG said that he would investigate this, and report back at the next meeting.

Agenda Item 5.2 – Review Trials and Implementation Activities

6.6 There were no papers presented under this agenda item.

Agenda item 5.3 – Briefing on Package 1 maintenance, PDRs and CCB Working

6.7 JMV gave a verbal presentation of the SME 3 report. Since there were no PDRs, there was not a lot of CCB activity, hence no paper.

Agenda item 5.4 – Post Package 1 Work

WP 29 – Report on CIDIN/ATN Gateway Specification Work

6.8 MO presented this paper, which reported on the technical approach taken by SG to meet the gateway requirements and the current status of the work. The material developed so far was attached for reference. the functional model taken for the specification of the Gateway corresponded

very closely to that of the AFTN/AMHS gateway, in that it could handle CIDIN/ATN end user pairings, or CIDIN/CIDIN, without jeopardising full ATN/ATN operations. Currently both Guidance and SARPs material are present in the one document – they will be identified and divided when the work is complete. At present the CIDIN is specified in Annex 10, Vol III. However, a better specification is available in the EUR CIDIN Manual. Consolidation with appropriate documentation will be done as a final part of the task, or if and when the appropriate documentation becomes available.

6.9 JYP confirmed that the ICAO information related to CIDIN left something to be desired – the proper CIDIN specifications a Regional Manual, and is streets ahead of the Annex work. MA asked about validation – JYP said that we would need the SARPs and GM identified before then. We needed some advice from the Secretariat – CIDIN was really a Europe/North Africa regional implementation – he would want to know the need for global applicability.

6.10 JYP said that AFS Working Groups will be kept informed of this work, which cannot be formally approved by AFSG/3 before ATNP/3.

7. AGENDA ITEM 6 – UPPER LAYER COMMUNICATIONS SERVICE

Agenda Item 6.1 – Subgroup 3 Report

7.1 SVT reported that SG 3 had met once since Honolulu, in Palo Alto in April. Material presented and discussed included the SV 4 Doc 9705 Amendment 1 change pages, the CNS/ATM-2 SARPs with enhancements listed as yellow pages, (incorporating Generic ATN Communications Service (GACS), Connectionless Dialogue Service (CLDS), and Naming and Addressing). The text for each enhancement is complete and now under configuration control. Associated CNS/ATM-2 Guidance Material and the ATNP/3 validation paper for the upper-layer enhancements. were also presented.

7.2 The group met for an entire day with WG1/SG2 (Security). The general authentication requirements are peer entity authentication, data origin authentication, and protection from replay. The groups also derived a major clarification in that authentication failure was now classed as a protocol error, rather than a quality of service failure. Thus, an aircraft may logon in clear, but if the aircraft attempts a secured logon and fails, it is not an aircraft. This had major implications for the security ASE. The security ASE would be presented (see WP 34 below), and would be integrated in the 9705/Ed 2 thereafter.

7.3 JM had presented the first draft of the X.500 schema and Directory Information Tree (DIT). SV7 requires review of the DIT for ATN-specific usage. There was a tentative plan for a SV7-specific meeting in the Eastern USA the week on 26 July 1999. The work was critical for .the implementation of CNS/ATM-2 security and MHS.

Agenda Item 6.2 – Review Trials and Implementation Activities

7.4 There were no papers presented for this agenda item.

Agenda item 6.3 – Briefing on Package 1 maintenance, PDRs and CCB Working

WP 16 – SME 4 (ATN Upper Layers) Status Report

7.5 TK presented this paper, which outlined all the PDRs raised against SV 4, and their status. proposed and accepted PDRs in the paper were reviewed at the CCB meeting on 17th May. It should be noted that no PDRs relating to interoperability defects had been raised against the ULCS since the inception of Doc 9705. This paper also included all the eight change pages proposed for Doc 9705 amendment 1, annotated with the appropriate PDR reference.

Agenda Item 6.4 – Post Package 1 Work

WP 10 – Draft Revision to ULCS Technical Provisions for ATNP/3

7.6 TK presented the current working draft of the ICAO Doc 9705/Ed 2 ATNP/3 material, familiarly referred to as the "Yellow Pages". The enhancements for ATNP/3 comprise naming and addressing (4.3bis), connectionless dialogue (4.7), and generic ATN communications service (GACS) (4.9). All of these are now under configuration control in their ATNP/3 format. The material included all the PDRs to date and all upper layer naming and addressing extensions. Sections 4.1 – 4.6 are modifications to SV4 of Doc 9705, and parts 4.6 – 4.9 are new. 4.8 is presently just a placeholder, awaiting stable and up to date security requirements from WG 1. Section 4.7 relates to the Connectionless Dialogue Service (CLDS), and is an editorial enhancement to previous versions. The CLDS introduced a 12½-octet overhead – this was illustrated in the Guidance Material. In 4.9, since there was a possible confusion between earlier versions of GACS and the AMHS, the GACS has been cleaned up editorially.

7.7 MA asked whether, if CLDS was implemented, there could be overtaking messages. TK said that queue jumping was really a WG 2 fact of life, but there could be, if messages took different routes. SVT agreed, but said that he thought that implementations would prevent this appearing to the pilot or controller.

WP 17 – Draft validation Report for ATN ULCS Enhancements

7.8 TK presented this paper – the third of three deliverables for ATNP/3 from SG 3. This was new to WG 3, having been worked on since Honolulu. He thought this could serve as a template for all SV enhancements: it used the same rules and format as the Package 1 validation – it might not be perfect, but it seemed to work. There was a need to validate that backward compatibility had been achieved. Support was still needed from States and Organisations doing any work which might usefully be construed as validation. There was a lot of work needed to complete section 7 (Results and Analysis). TK still felt uncomfortable about the Secure Dialogue Service. TK suggested that all subgroups complete their validation reports the same way. JYP appreciated the work that TK had done – however, the CIDIN subnetwork validation was not yet complete, and standardisation could be difficult.

WP 13 – Directory Protocol Requirements for ATN Deployment

7.9 TK had presented this paper under this agenda item, but thought that perhaps it should be better presented under 11 – AOB. This paper raises the question of the degree of support for standardised Directory protocols which is required for the successful operation of an ATN infrastructure. The specification of such protocols was not on the current WG3 work programme, nor was Directory explicitly on the work programme of WG1. SG3 at its Toulouse meeting in January 1999 concluded that there are no known Package 2 requirements for Directory protocol (DAP, DSP) SARPs - to be confirmed by WG3. The issue may need to be revisited in the light of current developments in security, AMHS, and other ATN applications. He had asked some questions in his paper, and if people were seeking to justify the need for Directory protocols, then they have to be able to answer the questions first. He thought there was a need to seek guidance from WG 1 on the overall concept.

7.10 GS said that this was the approach he was working on in Honolulu, related to the CM requirements. JM was concerned about the timing – he was hoping to have the requirements finalised later in the week – standardised profiles are needed for the Directory System Agents and the Directory User Agents, to allow broader access. He didn't see where only a schema would buy us anything at all, because everyone would have to have their own way of getting the information off the data base – all the X.500 was was a standards data base and user techniques for accessing.

7.11 JYP agreed 90% with JM. He was delighted that a new version would be available by the end of the week – this would mean that SG 1 would consider it at their next meeting the following week. However, he was a little confused by TK's paper – WG and SGs have to report work to the next ATNP, and he has been commenting about the lack of availability of the material for about the last 18 months. SG 1 needed a directory, both for the extended AMHS service, and for security via the directory. We should agree what was the level required, prepare a skeleton for ATNP/3, and let the

Panel decide what was needed. JMV said that concerning directory protocols, there was a need for standardisation to ensure standardised access and shadowing.

7.12 SVT closed the discussion by saying that the FAA had definite plans for use of the X.500 – they were trying to get it into Build 1A (2001) and if not then, it would certainly be in Build 2, (2005).

WP 35 – Recovery of Security Errors in ULCS

7.13 GMB presented this paper, which reviewed the handling of security in the Upper layers. Security in the UL SARPs related to an authentication and integrity check. initially it was seen more as a QOS parameter than as a protocol problem Failure of Security would be reported to the System Management, and would not have affected the protocol. However, SG 3 have reconsidered this decision, and have designated Failure of security as a protocol problem, with appropriate error indication. there will now be a direct effect on the application – a breakdown of security will generate a provider abort, seen as a communications problem, with no error code.

7.14 PC wanted to know who makes the decision to change the mechanisms of the security function malfunction. This new idea could jeopardise the data link connection – thus users who implement the security function could be subject to more disconnects that someone who doesn't. SVT said that if you failed a security function then you were classified as an intruder – no messing. But if you refused security, as distinct from failing a check, then you may be offered a lower quality service. Non security users can be logged on in a security environment – he thought this was an error, but WG 1 allowed it.

7.15 GS said that there shouldn't be a large number of aborts due to the security service. PC said that he didn't see how the system could differentiate between a real security threat and a system function failure. GMB said that the system couldn't do this at the dialogue level – a system abort would avoid giving end users a security problem. What has been changed is the simplification of the technical problem. SVT felt that PC's scenario of a pilot with a malfunctioning data link would not be a frequent occurrence. If security is done, it will be done properly – it will be a robust service. SVT's scenario is that anyone who fails is not a user, and must be cut off. This was far more realistic.

WP 34 – Sv4.8

7.16 This paper, presented by GMB, was an update of Chapter 8 of SV 4 presented in Honolulu. It also is related to the overall security scenario, and how security would be implemented. However, the scenario was still not clear enough to allow a true update of the document. He still needed an update from the Security Subgroup as to what information was going to be exchanged. Some paragraphs in the chapter relating to as yet undefined mechanisms have been removed at present, but hopefully it will be updated by September with the new Security Scenario. MA confirmed that when this was completed it would fit into TK's work. SVT said that SG3 needed the security information now – if we had to wait till September, then the SG would be doing both specification and validation in the September – December timeframe – not good.

7.17 DVR wanted to know how far we were from completion, and where would the new text go? GMB was optimistic, but is not so now. In addition to earlier removed material, he had taken out material which had been seen as conflicting with the state of the art as seem by WG 1. He felt that the chapter was between 20 and 70% complete. The main risk of the operational scenario for security comes from the fact that there are two UL processes – key management and transfer of security-related information, and security of operational data in ATM ASEs. Both have to be incorporated. This may potentially affect the protocol machine, service and ASN.1 descriptions. He hoped that the information would be defined soon – if the state table has to be changed, then less than 50% of the work was complete just now. SVT said that the problem really was one of external dependency – on WG 1/SG 2.

WP 9 – Eurocontrol GASCS Implementation Project Update

7.18 DVR presented this paper, which was a set of briefing slides which provided the Working Group with an update on the Eurocontrol project to produce a software implementation conforming to the draft Technical Provisions for the Generic ATN Communication Service (GACS). GACS will not only provide application developers with easy access to the full 7-layer ATN infrastructure, but will also contribute to the validation of the draft SARPs for GACS, the connectionless ATN upper layers and Dialogue Service (CLDS), and upper layer naming enhancements. The first stage of development (GACS-AE) is nearing completion and the software will be available in early June 1999 for free issue to Member States to assist in their ATN trials programmes. The GACS concept has already been presented to the AEEC 637 review group, who are looking at the GACS for transferring AOC, and they have adopted it as an end state.

IP 1 – Potential Future Operational requirements for the Generic ATN Service - GACS

7.19 DVR presented this short information paper. He said that the same question could be asked about GACS as was being asked about Security and Directory – are there currently applications needing this service to be available. When ADSP has finished sorting out their documentation, they will be receptive to new operational requirements and services. This paper outlined two such possible candidate applications for the GACS Service. These were the Common Trajectory Co-ordination Service (COTRAC) and the Pilot Preferences Downlink (PPD) service. Soft copy descriptions of these service were available. DVR emphasised that there were just possible candidates. ODIAC will possibly be presenting these services to the ADSP after the October Panel meeting, and the GACS offered a possible means of implementing them into the ATN.

7.20 FP said that we now had two frameworks for applications – Doc 9705 (package I) and Package 2 with GACS – there needed to be analysis carried out to determine which was the best solution for a particular application. He asked whether the appropriate analysis had been carried out. DVR said that it had not – they were just looking to use COTRAC for validation and trials.

WP 36 – Draft SV 7 – Directory Services

7.21 JM introduced this paper, which showed the current status of SV 7. In preparing this paper, he had concentrated on the meat of the work – some introductory material still had to be added. There are still a fair number of question marks in the text indicating items which have to be resolved. he still needed some information relating to Security before he could complete sections 7.10 – 7.12. Section 7.13 was related to the mapping over the ICS, allowing possible use of commercial products. He also still needed input about attribute types – the SG 1 work could be folded in.

7.22 DVR asked what the impact was on the air/ground, since CM already existed – air applications can operate without accessing a directory. JM said that the FAA were proposing to make the CM the front end of the directory for the Air/ground applications – all the data needed by CM would be in the directory. MG asked whether JM had written a document to indicate what attributes were mandatory/optional? JM said this was not available – it was probably needed, but he would need help to produce it. In addition he would need to tailor the schema to meet commercial products.

7.23 MO noted that there was a CONOPS related to System Management – he asked whether there would be a similar document for the Directory. JM said that there would be comprehensive guidance, perhaps based on earlier GS work. He would seek to meet the ATNP/3 timescales. JYP was grateful to see progress. the directory would be discussed next week, and he would appreciate if JM could be available to discuss it with the SG 1. JM said that he would be pleased to discuss this with SG next week.

8. AGENDA ITEM 7 – INTEROPERABILITY AND THE DEVELOPMENT OF PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENTS (PICS) FOR ALL APPLICATIONS

WP 25 – PICS/OICS Guidance Material

8.1 MA presented this paper, which had been prepared by Mike Harcourt, under a Eurocontrol programme. This document provides the guidance material for all aspects of PICS/OICS. It provides

a detailed description of the format and layout of PICS/OICS proformas, guidance for producing new PICS/OICS proformas and operational profiles, and guidance for completing a proforma. The ATN context requires two levels of conformance to be addressed, namely at the protocol and encoding level, and at an operational level, (hence Operational Implementation Conformance Statement or OICS.) A completed conformance statement provides a structured basis determining an implementations conformance to a standard or profile, and can provide the basis for comparison of implementations in order to determine whether there are any interoperability issues.

8.2 The proformas have been developed to meet not only the need for conformance to the SARPs in the "ATN Profile" but also to allow differing requirements for operation in different areas to be classified in an "Operational Profile". An Operational Profile not only takes into account the ATN profile but also adds specific interpretations and constraints which are applicable to an implementation for operation within a specified area. The proformas consist of a number of tables, implemented as spreadsheets, with each table held in a separate spreadsheet. PICS/OICS proformas for ATN air/ground applications are being developed by SG2.

WP 26 – Ground Flight Information Services PICS/OICS Proforma
WP 27 – Airborne Flight Information Services PICS/OICS Proforma

8.3 FP then followed on by presenting the PICS/OICS for D-FIS which he had prepared for SG2. He said he didn't proposed to cover them in great detail, but he would outline the contents. He thought that the PICS/OICS had two main uses – by bodies defining profiles for a region (e.g. a body with the authority to define which of the optional services would be available) and it would be used by implementers of FIS services to match what had been implemented in a ground system. It was easy to compare profiles with the PICS proforma, either manually or automatically.

8.4 MA said that there had to be a location for the PICS – they had in fact now got material in them which had been taken from the SARPs. He had originally suggested at the SG2 meting that they should be a part of the SARPs – but this had been firmly vetoed by FP, on the basis that sub review could generate hundreds of PDRs, for example in CPDLC, where someone disagreed with the paired messages. It should probably go in the Guidance Material, but the date for publication off this was so unrealistic that they would never be available. He asked for views.

8.5 PC said that Aerospatiale was very supportive of the work. Implementers filling in the proformas would minimise the risk of non-interoperability. With regard to the status of the work, he felt we needed initial comments from current implementers. The outlines had already been presented to RTCA and Eurocae, and we should get views and reactions from them, and also from the FAA. GS confirmed that there had been a very positive reaction from both the PIT and RTCA, at recent meetings. DVR agreed that the proformas were important for implementers, and they should be circulated and publicised like PDRs. They were applicable to Package I in their present state.

8.6 MP said that ICAO would have no dealings with PDRs – they were internal to the ATNP. The PICS proformas could possibly go in the SARPs, but the GM was the right place. At present the GM was low priority, but if the Panel meeting expressed a strong need to have the information published, then the priority might be increased. JH said that we should put the profiles on a web-site, and publish the format in an appropriate document. JMV said that that would be an acceptable solution where there was full co-operative working, but it would not work where there was a competitive marketing element, and hence commercial confidentiality. In many cases profiles were jealously guarded, and company confidential. PC noted JMV's comments, but said that there was a need to know world-wide what States were implementing – avionics would allow global operation, and they had to know what was required.

8.7 DVR understood that the new ATMCP was going to have a web site, and could this not be put on an approved ICAO site. MP said that ICAO material should be available in hard copy and in all the ICAO languages – ICAO had to ensure that this was done. SVT noted that in the certification of any implementation, there would be a need for such documents – they should beheld in ICAO or RTCA/Eurocae.

8.8 MA suggested that perhaps, since Eurocontrol had sponsored the work, it could be put on a Eurocontrol web site, DVR said this might be possible, but there would need to be formal ICAO reference to it. MA suggested that the necessary reference could be made in the ATNP/3 report (or perhaps the ADSP/5 report, which h would be earlier.) MP said that reference could be made in the report, but not in a State Letter. SVT said we should also consider the RTCA site. During a break, PC pointed out that there were a number of ATN related documents on at least one company web site – FANS-IS – and perhaps the PICS could be placed there. He know of several companies who used this site, and it might be appropriate. DVR undertook to investigate the possible use of the Eurocontrol site, and would try and make this information available in time for the next SG 2 meting, when the final version of the Package I PICS/OICS would be produced.

8.9 MO asked who was providing the PICS for interoperability. JYP said that regional planning groups needed access and education, since they should be the bodies which defined the profiles for regions – he was not sure whether groups acting under regional bodies such as APANPIRG and GREPECAS would have the information. MA asked JYP whether there was a need for PICS/OICS for AIDC applications – JYP said he would 'think about it.'

9. AGENDA ITEM 8 – IATA RELATED APPLICATIONS

9.1 There were no papers presented under this Agenda Item.

10. AGENDA ITEM 9 – DOCUMENT TRACKING/VERSON CONTROL

10.1 There were no papers presented under this Agenda Item.

11. AGENDA ITEM 10 – ANTP LEXICON

WP 39 – Proposed Amendment to the ATNP Lexicon

11.1 TB presented this update to the ATN Lexicon - this continued work which was initiated at the Utrecht meeting. This paper only included draft new material. The material was sourced from documents and new working papers – he would be grateful if people would highlight or identify definitions when they occurred. However, he was not too comfortable with having three sources for definitions – the CAMAL, Doc 9705 and SARPs, albeit that SV 1 of Doc 9705 was the same as SARPs. He was also looking for a destination for the lexicon. MP thought that an updated ATNP lexicon should be tabled at ATNP/3, and be included in its report – new ATN definitions should, however, be included in future updates of the ATN Comprehensive Manual as well as Doc 9705.

12. AGENDA ITEM 11 – AOB

WP 18 – Latest Features in the ATN SARPs Electronic Library
WP 18A – Acronyms for SARPs documents

12.1 JMcC presented both papers simultaneously. WP 18 gave an update on what had happened with the Electronic Library, and what changes had been made as a result of comments and suggestion given by members during the presentation at Bordeaux. The points outlined in the report of the Honolulu meeting (improvement of the content of the material and the human machine interface, including case sensitive search, spelling checker, side-by-side comparison, a list of acronyms, and an improved search header for the user) all had been taken into account. The revised version of the Acronym List was also presented. He pointed out that it was now truly a library tool, with widespread benefits. However, there were still funding restrictions, which were likely to continue through 2001, although the 2002 and beyond looked rosier.

12.2 Presentation of the paper was followed by a comprehensive demonstration, showing the improvements incorporated. There was also a demonstration of the capability of using a hub for multiple PC connections for multiple random access. This allowed WG members could hook up their PCs at the meeting to use the tool. Again, there were several comments from the WG, indicating the interest of the members in refining the system – these included paragraph matching in the

comparison mode, suitable choices of colours, ability to make on-line corrections etc. The level of comment showed the detail which was being considered by the meeting.

12.3 MA thanked JMcC for the work that has been done, and asked if the tool would be distributed for general use. JMcC confirmed that the FAA wanted to make it available, but that they were not in favour of a release on CD – this could cause problems with currency of the information, updating etc. They haven't worked out all the web mechanisms yet - the plan was for a six month free access to the tool over the internet, but there was a lot of work to be done to figure out how to protect the software.

DP 01 – Draft report of the 16th meeting, Naples

12.4 MA presented the report of the meeting. This was in draft form, and any corrections and additions would be made before the report was placed on the CENA server. It was hoped that an updated version of the paper would be placed on the WG 3 archive before the end of the day. A brief resume of the report is attached at Appendix F.

12.5 MA thanked SVT for his help and support, particularly at the start of the meeting when he was delayed overnight.

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

WP 24 – ATNP Working Group Meetings in Gran Canaria (Spain) - Arrangements for the 17th Meeting.

13.1 MG presented this paper, detailing arrangements for the 17th meeting of WG 3, which will be hosted in Grand Canaria by AENA in September/October 1999. The paper gave full arrangements for booking accommodation, which must be done by 23/8/99.

13.2 The proposed timetable for the meetings will be agreed by WG 1, but MA would propose a timescale covering the two week period (27 September – 6 October 1999) similar to that of both the Honolulu and Naples meetings. A draft schedule could be -

WG 1 -	4 -6 October	WG1/2/3 Co-ord Mtg	4th October (pm)
WG 1/SG2	6(pm) - 8 (am) October		
JSG (SM)	6 (pm) - 7 October		
CCB	27 September (1300 hrs)		
WG 2	28 September- 1 October	Combined WG2/WG3	29/9 (0900 – 1100)
WG 3	**28 September- 1 October**	**Combined WG2/WG3**	**29/9 (0900 – 1100)**
WG3/SG1	4 - 7 (am) October		

13.3 MA thanked Manual Garcia and AENA for their kind offer to host the meeting, and looked forward to meeting members there.

Appendix A to DP1

ATNP WORKING GROUP 3 - SIXTEENTH MEETING

18 - 21 May 1999

Naples, Italy

AGENDA

1. Review/approve meeting agenda

2. Review report of the 15th meeting of WG3 (Honolulu)

3. Review status/outcome of appropriate meetings -

   3.1 ADSP WG A & B Meetings (M J Asbury)
   3.2 ATN CCB meetings (S Van Tree)
   3.3 *ICAO/ANC activities (M Paydar)
   3.4 *System Management SG (J Moulton)
   3.5 *Security SG (S van Tree/M Bigelow)
   3.6 Other ATNP WGs

   (*There will be a joint meeting with WG 2 from 0900 - 1100 on 19/01/99 at which briefing and discussion relating to common topics (e.g. Systems Management, Security and any ICAO updates) will be presented.)

4. Air-Ground Applications

   4.1 Subgroup 2 report (M J Asbury)
   4.2 Review Trials and Implementation Activities
   4.3 Briefing on Package 1 maintenance, PDRs and CCB working (F Picard)
   4.4 Post Package 1 work

5. Ground-Ground Applications

   5.1 Subgroup 1 report (J Y Piram)
   5.2 Review Trials and Implementation Activities
   5.3 Briefing on Package 1 maintenance, PDRs and CCB working (J-M Vacher)
   5.4 Post Package 1 work

6. Upper Layer Communications Service

   6.1 Subgroup 3 report (S van Tree)
   6.2 Review Trials and Implementation Activities
   6.3 Briefing on Package 1 maintenance, PDRs and CCB working (T Kerr)
   6.4 Post Package 1 work

7. Interoperability and the development of Protocol Implementation Conformance Statements (PICS) for all applications

8. IATA Related Applications

9. Document Tracking/Version Control

10. ATNP Lexicon

11. Any other business, including ATN Electronic Library

12. Date and Place of Next Meeting (Madrid, 28 September - 01 October 1999)

Appendix B to DP 1

ATNP WG3 - Sixteenth Meeting – Naples, Italy, - 18-21 January 1999

LIST OF WORKING, INFORMATION and DISCUSSION PAPERS

Paper Number	Agenda Item	Presenter	Title
W3/16-W01	1	M Asbury	Agenda
02	1	M Asbury	List of Working Papers
03	1	M Asbury	List of Attendees
04	2	M Asbury	Report of 15th Meeting, Honolulu
05	5.1	J Y Piram	Report of WG3 SG1 (Ground/Ground Applications)
06	4.1	M Asbury	Report of WG3 SG2 (Air/Ground Applications)
07	6.1	S Van Trees	Report of WG3 SG3 (Upper Layer Architecture)
08	3.1	M Asbury	Report of ADSP WG A & B Meetings (Adelaide & Ottawa)
09	6.4	AJ Kerr	GACS Project Update
10	6.4	AJ Kerr	Sub-volume 4 Additions (GACS, Naming, etc)
11	6.4	AJ Kerr	Sub-volume 4 Draft Guidance Material (GACS, Naming, etc)
12	3.3	S Van Trees	ATNP CCB-9 Report
13	6.4	AJ Kerr	Directory Protocol Requirements
14	3.4	AJ Kerr	Draft Sub-volume 6 SARPs
15	3.4	AJ Kerr	Draft Sub-volume 6 GM
16	6.3	AJ Kerr	SME4 Report
17	6.4	AJ Kerr	Outline Validation Report Material (GACS, CLDS, Naming)
18	11	J McConnell	ATN Electronic Library
19	4.4	G Saccone	Package 2 CM Server Enhancement Redlines
20	4.4	G Saccone	Package 2 CM Backwards Compatibility Redlines
21	3.5	M Bigelow	Report of the Joint Security Subgroup
22	3.3	M Paydar	Update from Panel Secretary
23	3.5	M Asbury	ATNP Security Considerations
24	12	M Garcia	Hosting of next meeting – WG3 from 28/9–1/10/99
25	7	M Harcourt	PICS/OICS Guidance Material
26	7	F Picard	Ground FIS OICS
27	7	F Picard	Airborne FIS OICS
28	4.3	F Picard	ADS Chapter 8 Modifications
28A	4.3	G Saccone	CM Chapter 8 modifications
29	5.1	M Okle	Report on CIDIN-ATN Gateway Specification
30	10	T Belitz	ATNP Lexicon
31	4.3	F Picard	SME-2 Report
32	4.3	F Picard	ICAO Doc 9705/Amd 1 SV2 Change Pages
33	5.3	J-M Vacher	ICAO Doc 9705/Amd 1 SV3 Change Pages
34	6.4	G Mittaux-Biron	ULCS SARPs clause 4.8 (Security)
35	6.4	G Mittaux-Biron	Recovery of Security Errors
36	6.4	J Moulton	SV7 (Directory)
37	4.4	F Picard	Application Context
38	3.3	M Paydar	Post-ATNP/3 Considerations
39	3.3	S Nersessian	Post-ATNP/3 Considerations

40			
41			
W3/16-IP01	6.4	D van Roosbroek	Potential ORs for GACS
02	4.2	D van Roosbroek	Link 2000+ Update
03	5.4	J-Y Piram	AMHS Use of X.500
04			
05			
06			
07			
08			
W3/15-DP1	11		Draft WG3 16th Meeting Report from Naples

Appendix C to DP 1

ATNP WG3 SIXTEENTH MEETING – Naples, Italy, 18 - 21 May 1999

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Appendix D to DP1

TENTATIVE AGENDA FOR ATNP/3

1. Review of recent AFTN, CIDIN and ATN upgrades, developments, planning and implementation activities.

2. Consideration of issues resulting from initial ATN implementation activities based on the first set of SARPs.

3. Development of SARPs and guidance material relating to the enhancement of ATN Internet Communication Service (ICS).

4. Development of SARPs and guidance material relating to the enhancement of ATN applications and Upper Layers Communication Service (ULCS).

5. Development of SARPs and guidance material for ATN systems management, security and directory service.

6. Consideration of institutional and procedural issues affecting the implementation and/or operation of the ATN.

7. Future work.

Appendix E to DP 1

BRIEF NOTES OF THE JOINT ATNP WG 2/WG3 SESSION HELD ON 19/1/99

1. Introduction

1.1 The meeting was chaired jointly by Mike Asbury and Ron Jones. The purpose of the meeting was to receive information on and discuss areas of common interest. MA proposed an outline agenda –

1. System Management (with report from Jim Moulton)
2. Security (with report from Mike Bigelow)
3. ICAO (with report from Masoud Paydar)
4. Readiness for ATNP/3
5. Guidance Material Focal Point

1.2 This agenda was tacitly accepted by the meeting.

2. Systems Management

2.1 Jim Moulton reported on the work of the Joint Subgroup on System Management. The SG had met twice since the last WGs' meeting in Honolulu. They had basically finished the CONOPS – the last parts would be sorted out at the JSG meeting next week, and the document would be released 'soon'. With regard to SV 6, they were up to date on the protocol element of the work, but late on the managed objects. There was also something of a struggle to decide what went into the SARPs, and what into the guidance material.

2.2 Ron Jones asked that information (other than just a cross-reference) relating to other subvolumes should be included in SV 6. Jim said that all that was intended to go in was a cross-reference. Ron asked if the aim was to have SV 6 almost totally self-contained – Jim said that that was the basic idea – there would be no impact on the other Subvolumes. Paul Hennig asked what deliverables would be passed to WG 1. Jim consulted with Stephan Tammalet, and said that he would expect to have the new draft CONOPS, and draft input for the core SARPs. Ron was pushing Jim for a firm date, and asked when we could expect a draft SV on the table. Jim said that Spain was the target, but he couldn't guarantee. Ron said that there had to be 90% completion by Spain, because otherwise we would be looking at new material in December, when we should really be looking at validation results, and we would really have to make the decision about Panel meeting at the Spain meeting.

3. Security

3.1 Mike Bigelow (MB) presented his report. The Security Subgroup (SSG) had been very productive since Honolulu. Up to Honolulu it was reviewing possible systems which would fulfil the requirements, and meet the task. There had been two meetings – Honolulu and Anapolis, and the ad hoc group on crypto algorithms had met several times. The details of the work will be presented to WG 1, and the comments reviewed by the SSG thereafter. Detailed papers will be presented to WG3/SG3 for Upper Layers development work.

3.2 Mike Asbury had presented a paper to WG 3 the previous day, proposing that a risk analysis should be carried out before possibly complex security mechanisms were prescribed by the ATNP for

implementation. The risk analysis would not necessarily be the responsibility of the ATNP – it was possibly more operational in nature, and could be the responsibility of the ADSP.

3.3 Ron Jones did not feel that the ADSP would give global guidance on this – the report could allude to the State(s) carrying out the work. States could elect to use or omit security as they wished, depending on their requirements. Levels of security from zero to full encryption and confidentiality would be possible. Currently there were no applications in Doc 9705 needing excessively high levels of security, but what was being provided was a tool. He agreed that there were issues of additional bits on the line, but the objective was to pick the minimum number of bits commensurate with the provision of a 'reasonable' level of security. He did not think we were placing an undue burden on implementers – he did not expect a massive implementation of security before about 2010. As far as he was concerned, there was a requirement to provide standards which will allow people to start down the path the right way.

3.4 Danny Van Roosebroek did not feel that we should tie in too closely with the ADSP – their approach would be generic, and different from country to country. One of the tools for ATNP was the appropriate security mechanisms, and he strongly supported the continuing development of the necessary security standards.

3.5 Paul Camus had noted that Mike Asbury had made reference only to the safety and security of the ATS, but AOC could also benefit. He also supported the development of the security mechanisms. Paul Hennig said that IATA was closely following and very supportive of the development work on security standards – they also saw it as allowing a framework for the development of confidentiality. Mike Bigalow said that there could be global benefits for AOC, even if States did not choose to implement security. Ron Jones said that confidentiality was a by-product – there would be no additional complexity. However, there might be a need for confidientiality in the passing of ADS reports or ground/ground messages – this could be broader than Doc 9705 requirements, and may perhaps be related to institutional agreements.

3.6 Steve Van Trees reminded the meeting that the security framework was not new – there was an ASE earmarked in existing structures. Tony Whyman noted that security had been a long time a-coming – we had had a technical requirement since 1995. There was a need to take account of possible weaknesses in the system, and the application of security might be the best way. He fully supported Ron Jones' comments, and it really would be up to the users to decide whether to implement and use it.

3.7 Mike Asbury thanked Mike Bigelow for the report, and guessed that he was probably in a minority of one in this discussion. But at least the problem had been aired, and he thanked the members for their considered comments.

3.8 Paul Hennig asked whether SV 8 and the draft Guidance Material would be available to WG 1 for comment – Mike Bigelow said that an outline draft SV 8 would probably be available for information.

4. ICAO

4.1 Masoud Paydar presented the current ATNP work programme for reference, to remind members of the work required by the ANC before ATNP/3. He also referred to the new Annex 10 Vol II overhaul task accepted by WG3/SG1 – there was a need to modify and revise the material, and make it suitable for future implementations. He thought that the ATNP work would be just about over by the end of 1999, but if there was further work, we should document this, and prepare appropriate material for ATNP/3. Maintenance work could be done by a Study Group, with the CCB affiliated – there might not be a need for a full Panel.

4.2 Paul Hennig briefed the meeting on a short meeting which had taken place between the Rapporteurs of the WGs, the CCB Chairman, and Masoud Paydar earlier. Topics discussed had included proposed date for ATNP/3, life beyond ATNP/3, slightly revised CCB procedures, and amendments of convenience to the proposed ATNP/3 agenda.

5. ATNP/3 Planning

5.1 Ron Jones said that, with reference to deferment to a proposed October date for the ATNP/3, a delay of six months to the meeting would mean a delay of twelve months to the publication of the documents, due to the ICAO publishing cycle. There were mixed opinions on the need for Package II information in the next year or so – some thought it premature, but others needed some of the work – e.g. System Management – as soon as possible. There was also a credibility function, which Mike Asbury had raised at the Rapporteurs meeting. WG 2 had discussed a Phuket scenario if the ATNP/3 was held in February, with a Working Group of the Whole (WGW) meeting taking place in May, to finalise any outstanding validations which may not have taken place within the required timescales.

5.2 Jean Yves Piram had similar feelings on credibility, in that any delay would make the material being produced less applicable to those who were doing the work now, and needed updates and revisions soonest. But he didn't like the idea of a Panel followed at once by a WGW – thought that this would be counter-productive in the eyes of the ANC. He thought that there was a need to define the deliverables, and to decide the time based on that. Personally, he thought that October was a more realistic date than February.

5.3 Danny Van Roosebroek said that a great deal depended on the status of the System Management and Security SVs – but he was optimistic that the material would be available and validated. Steve Van Trees confirmed that the FAA will be implementing system management, and if they do not have SARPs, then they would have no option but to develop their own standards, and go it alone. Tony Whyman thought that before making a final decision, there was a need to have firm commitments to carry out the necessary validation work.

5.4 Ron Jones said that WG 2 would have some validations to report in February, some may have to be done later – hence his suggestion of a later WGW. He would hope to put revised Doc 9705 material to the ATNP/3 with the confidence that the architecture was correct. Tom MacParlan said that Security work was being carried out at the FAA Technical Centre, and he confidently expected validation by December.

5.5 Masoud said it was up to the ANC to approve the date – if the members agreed that February was a suitable date, then Masoud would present the appropriate paper. But he had to convince the ANC of the stability of the material, the need for change to the core SARPs, any updated technical applications, and the availability of the relevant Guidance Material. Paul Hennig said that the WG's decision would be made by WG 1, based on material presented to it by the other WGs.

6. Guidance Material

6.1 Mike Asbury said that at present the Comprehensive ATN Guidance Material lacked an editor responsible for making sure it was a cohesive package, and to help Masoud push it within ICAO. We needed a CAMAL driver. Masoud said that document did not have high priority – he was aiming for an end of the year publication (but he didn't say which year.) He understood that further changes would be organised through the CCB, but would not of course have to go through the full CCB procedure. He would also expect new material to be provided by the Panel meeting – this may need a sea of approval, say from the WGW meeting in May. With regard to the output from the Panel, he would expect to send a State Letter out with the core SARPs in June 2000. States wanting Technical Material after the Panel would be presented with the Panel Material, plu any applicable updates.

6.2 Paul Hennig had three comments on the GM – he did not feel there was a need for a CAMAL driver; he was very concerned about the GM priority, and finally, all GM material should go through the CCB. Steve Van Trees said that the CAMAL 1 was being proofed in the CCB, with useful comments already from Tony Kerr and Tony Whyman. However, if it was not published soon, he would see the need to add Package II guidance – the CCB would be happy to accept all material, up to a Masoud-indicated shut out date.

6.3 Jane Hamelink said that generally most SARPs/GM editors looked after their own part of the document – she thought that ICAO should be now ready to co-ordinate the input.

6.3 Masoud said that he did not propose to take it out of the production pipeline – we would include any material arriving up to that time.

6.4 There were no further comments, and Mike Asbury thanked the members of both WG 2 & 3 for attending and taking part in the discussions.

APPENDIX F - RESUMÉ OF THE REPORT OF THE 16TH MEETING OF THE ATNP WG3 - (APPLICATIONS AND UPPER LAYERS), NAPLES, ITALY, 18 – 21 MAY 1999

1. The 16th meeting of the ICAO Aeronautical Telecommunications Network Panel Working Group 3 was held in the Royal Continental Hotel, Naples, from 18 – 21 May 1999. The meeting was chaired by the WG3 Rapporteur, Mike Asbury, and was attended by 29 Members from 10 States and 3 International Organisations. 43 Working Papers and Information Papers were presented.

2. The WG was presented with brief reports of the recent ADSP Working Group meetings. WG A is principally concerned with ADS (contract) and ADS-B (Broadcast). WG B is concerned with all other elements of ATS data link applications, including CM, CPDLC, D-FIS and AIDC. WG 3 had been looking to this meeting of ADSP to finalise the METAR operational requirement, and approval of the ranges and resolutions – this appeared not to have been done. If the information was not forthcoming, then the METAR service would not be ready for ATNP/3.

3. The ATNP Secretariat said there was a need to revise and update Annex 10, Vol II (Comms Procedures). This task is to be progressed by ATNP (for data communications). WG3/SG1 was probably the only group with the relevant expertise to take on this task.

4. The WG reviewed a proposal to assess the need for security, prior to developing the mechanisms. It was that there was a need to carry out risk analysis, but the need to develop security mechanisms was clearly stated in the work programme for ATNP approved by the ANC post ATNP/2. The WG agreed that there was a need to have to work on the technical building blocks now for a service that will be needed in the future.

5. An updated draft of the proposed SV 6 SARPs, relating to System Management, was made available. There was still a great deal of work to be done. Guidance Material was also presented. There was still a question of whether management information was Guidance Material or SARPs.

6. SG1 (Ground/Ground applications) had meet once since the Honolulu WG 3 meeting. Current work involved maintenance of the Package 1 ATSMHS SARPs, the extended ATS message service (a first draft of the Package II SARPs had been produced),the CIDIN/ATN gateway and the AMHS use of a Directory. It expected that all objectives would be achieved by the Panel Meeting.

7. SG2 (Air/Ground applications) had met once since the 15th meeting of WG 3. Work continued on the development of future logon procedures, how the implementation of security would affect the air-ground applications, the updating of the METAR service, the concept of PICS (Protocol Implementation Conformance Statements) for air/ground applications and the revisions of the air/ ground SARPs material to meet implementation requirements.

8. SG 3 had met once since Honolulu. The work programme included the SV 4 Doc 9705 Amendment 1 change pages, the CNS/ATM-2 SARPs, (GACS, CLDS, and Naming and Addressing), associated CNS/ATM-2 Guidance Material and the ATNP/3 validation paper for the upper-layer enhancements.

10. The WG was presented with information on interoperability and the development of Protocol Implementation Conformance Statements/Operational Implementation Conformance Statements (PICS/OICS) for all applications. - the document provides the guidance material for all aspects of the PICS/OICS development and use. The PICS should go in the Guidance Material - the WG suggested that they could be put on a Eurocontrol web site. Eurocontrol indicated that this might be possible.

11. The WG were presented with an update to the ATN Lexicon. An updated ATNP lexicon should be tabled at ATNP/3, and be included in its report. New ATN definitions should be included in future updates of the ATN Comprehensive Manual and Doc 9705.

12. The WG was made aware of the latest features in the ATN SARPs Electronic Library and a list of Acronyms for SARPs documents. It was confirmed that the FAA wanted to make the library available.– the plan was for a six month free access to the tool over the internet.

13. The next meeting of the WG will be in Grand Canaria (Spain) from 28/9 – 1/10/99.