

AERONAUTICAL TELECOMMUNICATIONS NETWORK (ATN)

WG3 - (ATN Applications and Upper Layers) Thirteenth Meeting

Utrecht, Holland

29 June - 2 July 1998

Agenda Item 8: AOB - Review Draft report of the 13th meeting of WG3 (Utrecht)

Draft Report - Working Group 3

(Presented by M J Asbury)

1. INTRODUCTION

1.1 The 13th meeting of the ICAO Aeronautical Telecommunications Network Panel Working Group 3 was held in the Holiday Inn, Utrecht, from 29 June to 2 July 1998. The meeting was chaired by the WG3 Rapporteur, Mr M J Asbury, and was attended by some 33 Members from 14 States and 5 International Organisations.

1.2 The attached paper constitutes the Draft report of the meeting. It has been updated to include all corrections made when the report was reviewed by the Working Group.

2. RECOMMENDATION

2.1 Members are recommended to review the report and pass any corrections to the Rapporteur by EMAIL. The final draft will be reviewed for correctness at the 14th meeting in Bordeaux.

REPORT OF THE 13TH MEETING OF THE AERONAUTICAL TELECOMMUNICATIONS NETWORK (ATN) WG3 - (ATN APPLICATIONS AND UPPER LAYERS), UTRECHT, THE NETHERLANDS, 29 JUNE - 2 JULY 1998

1. INTRODUCTION

1.1 The 13th meeting of the ICAO Aeronautical Telecommunications Network Panel Working Group 3 was held in the Holiday Inn, Utrecht, Holland, from 29 June until 2 July 1998. The meeting was chaired by the WG3 Rapporteur, Mike Asbury, and was attended by some 33 Members from 14 States and 5 International Organisations. 23 Working papers, 7 Information Papers and 3 Flimsies 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 welcomed to Utrecht by Theo Hagenberg, the expert nominated by the Kingdom of the Netherlands. He offered a visit to the new state-of-the-art ATCC at Amsterdam Schiphol on Friday 3 July if there was enough support. Mike Asbury thanked him on everyone's behalf for all the work he had done in preparation for the meeting, including the provision of the vital secretarial, computer and photocopying support.

1.3 Mike stated that WG2 was holding a parallel meeting in an adjoining conference room and that WG3 members would be joining WG2 at 1100 on Monday 29 June for a joint session. He anticipated that WG3 would finish its deliberations within 4 days, ending formal work about midday on Thursday 2nd July to allow time for preparation of a Draft Report to be presented for approval later in the afternoon.

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

WP-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 entirely in the order indicated in the Agenda - however, this report will outline the proceedings in agenda order.

2.2 The meeting approved the Agenda.

3. AGENDA ITEM 2 - REVIEW THE REPORT OF THE 12TH MEETING

WP-04 - Draft Report of the 12th Meeting

3.1 The 12th meeting had been held in the Rio Othon Hotel, Rio de Janeiro, from 16 - 20 March 1998. It was chaired by the WG3 Rapporteur, Mike Asbury, and was attended by some 30 Members. Mike gave a summary of the report.

3.2 The ICAO Air Navigation Commission (ANC) had approved the core SARPS for inclusion in Annex 10, but decided that the remaining 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 in time to match the Annex 10 Amendment 73 (applicable 5 November 1998) around August 1998. ATNP Standards and Recommended Procedures (SARPS) Edition 2.2 dated 19/12/97 was now available in soft copy. SARPS Edition 2.2 referred to ATNP Applications Version 1.0.

3.3 Timescales for ATNP/3 have had to be revised, due to pressure from within ICAO. The ATNP Joint Working Group had decided that, of the available dates, 6 - 17 December 1999 would be most acceptable. Mike added that since Rio these dates had slipped even further, to February 2000.

3.4 Relating to new work, there was a requirement to provide functionality in the ADS application which would indicate that an aircraft is in an Emergency and/or Urgency status. The main problem was the need for a pilot interface within ADS and this was a major change in operating concept. Also new

procedures have to be developed to allow use of a 'server' concept when initialising data link connections. Development of system management techniques for air/ground applications is urgent.

3.5 The extended Air Traffic System Message Handling Service (ATSMHS) could be a suitable communication system for all or part of the Aeronautical Information Services (AIS), and there was a need to identify AIS requirements more closely. Some early work on system management for ATSMHS has been done. Tasks have been identified, and a methodology has been agreed.

3.6 There had been discussion on ATN Upper Layers Security and this would figure later during the joint WG2/WG3 session discussion, as would document tracking, a subject highlighted by Danny van Roosbroek.

3.7 In the development of system management techniques, where possible, standard ISO system management templates have been used as the basis for the work. Studies had determined that airborne applications would benefit from such system management. If ICAO developed standards using commercially available methods their use could be beneficial to the community globally i.e. use of COTS products such as 'HP Openview'. Pam Tupitza was not so convinced of the capability of such products.

3.8 EUROCONTROL was developing the case for a Simple ATN Messaging Service, which would facilitate the migration and transition of existing Aircraft Communications And Reporting System (ACARS) based Aircraft Operations Communications (AOC) and non safety critical ATC communication (e.g. pre-departure clearance) from pre-ATN carriers to the ATN. Airlines desperately want to know how AOC applications will be sent when ACARS becomes saturated in a few years time. IATA really appreciated this work - they saw it as AOC beneficial, allowing non-state requirements into ICAO standardised applications. Various issues have been identified as a result of experience gained from ACARS operations in the South Pacific which may have an impact on future ATN operations, which should be assessed in this light. Tom Kraft mentioned problems regarding time stamping in FANS-1.

3.9 The meeting agreed the need to support Package 1 SARPS, and work should continue on would-be Package 2 work, e.g. system management, security, future air/ground enhancements and applications. The existing method of WG3 operation would continue, being supported by members as necessary.

3.10 The WG accepted the report, which had been posted on the CENA server.

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

4.1 ADSP WG A & B Meetings, London, 15 to 19 June 1998

WP-06 - Summary Report of ADSP Working Group Meetings in London

4.1.1 Mike Asbury, the UK ADSP Member, said that 'to save on trees' he had only produced a summary paper on the two ADSP WG A & B meetings' activities in WP06. As a reminder, WG A deals with ADS and ADS-B and WG B caters for all other air/ground and ground/ground applications including procedures and required communications performance (RCP). The WG A meeting had been chaired by Don Maclean and was attended by 10 Panel members, 12 advisors and 1 observer. Of 76 action items identified by the Secretariat since the last Panel meeting, some twelve were attributable to WG A, including how to make Flight ID available to the ground user, and interference issues.

4.1.2 The ANC were not yet fully appraised of the ADS-B concept and what it can do for the aviation community and may perhaps require formal papers from WG A. The US Cargo Airline Association envisaged a very ambitious programme, equipping 800 aircraft with ADS-B for conflict resolution and situational awareness, starting mid-1999. WG A was also progressing amendments to PANS-RAC and ICAO Annexes, for ADS and ADS-B.

4.1.3 In a reply to a request from ATNP WG3/SG2, WG A said it could not develop business cases - only operational requirements - to justify incorporating 'unlawful interference' changes to ATN SARPS. There were several services though that could use an ADS capability. i.e. Controller Access

Parameters such as heading and airspeed in order to supplement radar data in quick time. EUROCONTROL was being encouraged to progress this initiative through further trials etc. New features could be part of Package 2 CNS/ATM. Jean-Yves Piram wished clarification on what 'quick and rapid' meant in Paragraph 7 of the main WG A report regarding 'surveillance' and 'aircraft vectors'; were they related to en-route or airport control? Mike Asbury explained that the controller could expect a 1 second latency with ADS in a terminal area instead of 9 seconds for radar, for down linking critical parameters, using a speedy communications media. An objective was to reduce voice channel congestion between pilot and controller at a critical stage of flight. However, there was a possible problem during transition brought about by mixed avionics capabilities, which might in fact have an adverse effect. Mike concurred with Paul Hennig that there was neither an operational requirement or a business driver for such a service. Tom Kraft continued the discussion with reference to parallel runway approaches at Paris and how to reduce spacing between aircraft and increase capacity if ADS was used in this way.

4.1.4 Production of a Data link Lexicon by the German expert on the ADSP had provided a useful compendium of information and Mike Asbury suggested that Thomas Belitz of Germany could approach his compatriot for advice on the feasibility of producing a similar volume regarding ATN phraseology, definitions and the like. This could also be of value to ICAO. Regarding future meetings, these were scheduled for Madrid 26 to 30 October (Discussion between Paul Hennig and Tom Kraft thereafter revealed that if so then there are date clashes with an FAA Oceanic meeting and the EUROCAE WG53/RTCA SC-189 Plenary) and Adelaide 1 to 5 February 1999.

4.1.5 Continuing now with the WG-B report summary, Mike Asbury said that WG-B had been chaired by Jean-François Grout. Initial discussion had involved the WG being updated on recent work of the ICAO Meteorological Information Data Link Study Team relevant to the ATIS service of the D-FIS application. Concern was voiced also regarding the use in the ATIS of non approved units not in accordance with the provisions of ICAO Annex 5. This problem has initiated a WP from NATS and the FAA for the next meeting. There was also doubt raised as to the value of a Runway Meteorological Information Service (RMIS). For instance, receipt by a pilot of continuous RVR information whilst at a critical approach height in fog could be hampering rather than helpful.

4.1.6 WG-B had concentrated its effort relating to CPDLC on developing procedures for the PANS-RAC and SARPS material for Annex 11. The ADSP had agreed changes to the ADSP Manual, involving ranges and resolutions related to D-FIS. Frederic Picard asked whether this would affect the ATIS SARPS. Mike Asbury confirmed that the changes were within the ATNP agreed ranges, and would have no effect on the ATIS ASN.1.

4.1.7 The RCP subgroup, led now by Roy Oishi (ARINC), had met in London prior to the ADSP meetings and was preparing a draft manual on RCP. Further WG-B meetings would be held consecutively with WG A above.

4.1.8 Tom Kraft was concerned as to whether ADSP was looking at Required Surveillance Performance (RSP) as well as or in conjunction with RCP. Mike Asbury said that ADSP was looking at RCP end-to-end and with associated values for different environments, but he didn't know who was looking at RSP. Paul Camus asked as an implementor "what if the RCP classification could not be met?" Mike pointed out that that RCP was looked at in the same way as RNP and that in certain areas such as the North Atlantic (NAT) if the RCP was not achievable i.e. because communications were too slow when using satellites then aircraft separation may not be reducible. In any case none of this was in the Package 1 CNS/ATM timeframe. Members were advised to consider how long it took getting RNP implemented. Theo Hagenberg was concerned at the slow pace of development of ICAO Panel specifications, a situation which could make States impatient. In answer to a question concerning the final resting place of RCP within ICAO, Masoud Paydar noted the creation of a newly proposed ATM Panel, suggesting that they could have responsibility.

4.2 Joint Meeting of WG2 & WG3

4.2.1 WG2 gathered with WG3 for a joint meeting chaired by both WG chairmen (Ron Jones (WG2) and Mike Asbury (WG3)), intended to examine items of mutual interest, particularly Systems Management and Security, and to listen collectively to an ICAO status update by Masoud Paydar.

4.2.2 ICAO Update. In his verbal report, Masoud noted with regret the departure of Tom Calow from Canada, recently retired, with a replacement probably nominated around September. The Manual of Technical Provisions for ATN (Doc 9705) would be published at the end of August, with contents as of Edition 2.2 of the WG SARPS, but with the inclusion of 3 new PDRs, making it effectively a "2.3 Edition". Doc 9705 would be available in time for the issue of Amendment 73 to ICAO Annex 10. (The number 9705 has been sequentially chosen by ICAO, and has nothing to do with date. i.e. year/month of origination). A hard or soft copy was now available for internal ATNP usage only. ICAO intended to make it a saleable document, and so would not want it to be made openly available, e.g. displayed on a 'Web' Site. This new Manual (although called "First Edition") will have no formal version/edition amendment number, but will have annual amendments similar to the ICAO Annexes. The CAMAL was being processed, but was being fully editorialised according to ICAO practice rather than being accepted almost directly from a panel working group, as was Doc 9705. Masoud confirmed that ATNP/3 would now be held in February 2000. He then emphasised the need for resuming 'proper' Panel co-ordination through Panel Secretaries and communicués, rather than by the hitherto more informal process, now that official documentation such as Doc 9705, Annex 10 & 11 Amendments, ATN & ADS SARPS and updated PANS-RAC were firmly baselined. He would write a paper explaining the new types of documents for the benefit of the ANC. There needed to be traceability and co-ordination - there were now 12 ICAO Panels and with a new one still to be created, known as the 'ATMCP' (ATM Operational Concepts Panel).

4.2.3 System Management (SM). A subgroup of the Joint Working Group of the ATNP (JWG) had been created at the Rio de Janeiro series of meetings. This had not been approved by WG3, but Mike Asbury had been outvoted by the Chairmen of the other two WGs. WG3 had wished SM to be achieved via the applications and not as a separate entity. Jim Moulton (nominated as the interim Chairman of the new SM joint subgroup (JSG)) outlined their 'concept of operations' (CONOPS) meeting prior to the next Bordeaux meeting in September. There was a need to define 'managed objects' and decide whether their output would be SARPS or GM; also, management information needed passing across the air/ground link. A major reason for the establishment of a JSG was that people could get funding for a meeting related to a JSG more easily if it was not specifically WG 1 related. The interaction in any case between WGs on technical issues would be a major contribution to the SM WG's success. Mike Asbury confirmed that WG3 would be happier with this collaborative effort on SM, as would his co-SG Chairmen. Jim Moulton confirmed that the WG1/SG3 E-MAIL exploder would be the focus of information about the new SM JSG's work. Paul Hennig confirmed that, with the establishment and confirmation of the SM JSG, WG1/SG3 would be disbanded.

4.2.4 Versions versus Editions. Mike Asbury wished clarification on the differences between 'Editions' and 'Versions'. Steve Van Trees explained that a 'Version' was a revision of Ground Station (GS) or avionics software; whereas an 'Edition' was a revision of a paper specification. ICAO Doc 9705, would have no edition number, but was in fact ATNP SARPS Edition 2.3 from Montreal. But the application software in Doc 9705 was at Version 1.0. The next revisions from ICAO would then be Doc 9705, Amendment 1, 2 etc. Tom Kraft was concerned about interoperability, with SARPS 2.3 pointing to Version 1 software; in his opinion Version 1 and 1st Edition should be synonymous. Ron Jones pointed out that this was a CCB topic and as we develop Package 2 SARPS, nomenclature is up to the WGs. When the format of Doc 9705 plus several amendments became confusing then it would be restructured to a "Second Edition". So WG and CCB and ICAO numbering convention will continue to be different.

WP-15 - WG1 Sub Group 2 Chairman Report

4.2.5 Security. Mike Bigelow made a short review of his WP15 'WG1 Sub Group 2' report, particularly with reference to the Section 3 table covering Work Progress. Major work had been achieved regarding concept of operations and there was continuing interaction with other SGs on what should go into GM and appropriate sub volumes. Core material on security was being developed for Annex 10 and Doc 9705 and consolidated material would be entered into the CAMAL and repeated as necessary in other documentation.

4.3 ATN CCB Meetings

WP-19 - ATNP/CCB Chair's Report

4.3.1 Steve Van Trees went through his Defect Report Summary covering the 6th CCB meeting held on 25 June. He covered the various categories of PDR and how they were treated depending upon whether they were withdrawn, rejected, forwarded etc. 100 of the 141 PDRs submitted since the Phuket meeting had been resolved. Steve had also included a table indicating the status of SARPS. i.e. SARPS 2.3 would become Doc 9705, applicable on 5 November 1998 and SARPS 3.0 would become Amendment 1 to Doc 9705 one year later. 6 PDRs had been resolved at this meeting. Steve had also supplied a handy implementor's guide to the various types of PDR dealt with; it would provide a 'road map' from one set of SARPS to another.

4.4 ICAO/ANC Activities

4.4.1 ICAO matters had been dealt with earlier at the joint WG2/WG3 meeting by Masoud Paydar. Tony Kerr was concerned as to ICAO's intentions regarding the CAMAL and there was general unease regarding Masoud's intention to re-write the initial 2 chapters of The CAMAL. Paul Hennig would wait and see what transpired in these areas with ICAO as WG1 was still involved in the editing process.

4.5 Joint System Management (SM) SG

4.5.1 Again, this had been covered earlier by Jim Moulton during the joint WG2/WG3 meeting. (See Paragraph 4.2.3 above.)

4.6 Security SG

WP-14 - Response to WG3/SG2 Request for Risk/Threat Analysis

4.6.1 Steve Van Trees covered the salient points of Mike Bigelow's paper covering Risk/Threat Analysis in answer to WG3/SG2's concern voiced at Lansing. The ATN was vulnerable to specific threats to ATC messages, the X.400 Message Handling System (MHS), OSI Systems Management and to the ATN based applications. Loss of authentication due to wrong aircraft access or masquerade was worrying. They were looking to specify a security approach which caused least 'perturbation' to the applications and therefore to apply it in the upper layers. The 5 levels of security were listed in the paper. As this would be a Package 2 CNS/ATM feature backwards compatibility was a concern. Jane Hamelink said that adding security to the ATN would affect chapters 3, 4, 5 and 7 of all the air/ground SARPS, and we may need to go back to ADSP to get them to be more specific in their requirements. Steve added that mature CONOPS would be available for the Bordeaux meeting. Security is unlikely to be transparent to the user who may need to be in the loop somehow and the attention of hackers could not be ignored.

4.7 Other ATNP WGs

WP-18 - Contains Flimsy relating to SM for a Connectionless Layer relating to Multicast capability

4.7.1 At the WG1/12 meeting in Utrecht the previous week attendees had discussed a Flimsy (in WP18, entitled as above and received from Jim Moulton) output from the WG2/14 meeting in Rio mid March. Steve Van Trees summarised the contents of this Flimsy in which it had been suggested that

WG1 consider security and SM SARPS and GM development associated with a multicast capability using the connectionless upper layer.

5. AGENDA ITEM 4 - AIR-GROUND APPLICATIONS

5.1 Subgroup 2 Report

WP-05 - 17th WG3, SG2 Meeting report

5.1.1 The meeting had been held in Lansing, Michigan, from 10 to 13 May. SG2 had identified the need for a formal GM amendment process; they had developed a procedure which would be the subject of a later paper. Dissemination of changes could be through the mechanism of the CENA server. 25 PDRs had been reviewed and it was noted that safety considerations had not always been emphasised in the past: some PDRs were rewritten to reflect this. There needed to be clarification with ADSP regarding operational requirements. SG2 had commenced work on SM issues ably educated by a tutorial from Pam Tupitza.

5.1.2 Replication of voice and broadcast mode by data linking had been discussed including use of the 'server' concept as a means of contacting one GS and sending on data to others and there was discussion on 'Package Creep' due to technological evolution and user pressure. There was consideration of interoperability problems. i.e. with changes such as allowing a pilot to interact with the ADS function during emergency situations. Some consideration of security aspects took place and a requirement for threat analysis had been identified. Future work would include assessment of CPDLC activities with regard to message capability, how to deal with redundant messages and development of new procedures. The next meeting would be in Toulouse from 1 - 4 September, concurrent or consecutive with the other WG and SG meetings.

5.2 Review Trials and Implementation Activities

IP-01 - EURO-16 AG-DL - EUROCONTROL Datalink Project

5.2.1 Danny Van Roosbroek presented IP01. This paper introduced the forthcoming EURO-16 AG-DL project which would investigate the feasibility of integrating data link applications into existing and future Flight Data Processing Systems (FDPSs) for Air Traffic Services (ATS). The environments considered were: Maastricht in the Netherlands, UK NATS at Bournemouth/Hurn, DFS Germany in Langen and STNA France in Toulouse. They would utilise a common data link server front end to their existing FDPSs and the planned work programme consisted of 5 activities as specified in the paper. There would be 5 deliverables also, involving a project team from among the 4 nominated countries. This was a Trans-European Telecommunications Network (TENs) funded project by the CEC (Commission of the European Community) lasting for a 2-year period from 2/3 September this year until mid 2000. There would be CONOPS to identify the appropriate system architecture/server required. Further discussion about use of servers was initiated by Mike Asbury and Paul Camus. i.e. would such a server have a single address to one ATSU or several ATSUs via a single address. Danny felt that he could not answer too many questions - the work was at an early stage, and he did not wish to prejudice the outcome of the initial meetings. The WG3 Chairman requested Greg Saccone to monitor the progress of this project with Danny who together with Tim Maude would supply papers for an agenda item at the next WG3 meetings.

IP-04 - ATN Implementation

5.2.2 Paul Hennig presented his IP04; a short paper but containing much exciting news. The proposed ATN implementation was a co-ordinated, cohesive plan, currently underway and addressing both the business and technical aspects of an operational global data link system based on ATN SARPS and GM. It involved many United States airlines, international vendors, service providers (ARINC and SITA) plus the FAA. The driver had been the prospect of ACARS traffic saturation within 2 years and total ATC gridlock in some part of the USA by 2005. Initial trials would involve American Airlines (AAL) installing an ATN-1 package including VDL-Mode 2 and Satellite Data-3 communications. Milestones were:

- 1 July (the day of this WG3 meeting) a major data link meeting was being held in the USA attended by Tom Kraft - and he would be reporting what had transpired, hopefully before the end of the WG3 meeting. 10 FAA services would be represented. Steve Van Trees would supply an IP outlining the basis for this historic meeting. (*Note - Tom Kraft did not contact the meeting and no flimsy on the subject was presented either.*)
- in August many ATNSI airlines were intending to sign contracts with ARINC
- in October the FAA Joint Resources Council would meet to agree funding
- finally in November a green cover project document would be issued by the AEEC enabling cost benefit analysis to begin.

5.2.3 ATN-1 was a subset of SARPS using an AOC Connectionless Protocol and SDCLF Protocol but not full ICS and dialogue service, over VDL-Mode 2. AAL would not install a full ATN SARPS stack for the initial part of the trials.

5.2.4 Paul Hennig further elaborated on 2 proposed communications solutions initially proposed a year ago - one by ARINC the other from SITA. The latter proposed to update their X.25 network; the ARINC proposal was to update to ATN-1, and this had been brought up at the AEEC Data link forum in Brussels during June. There had been no consensus with the airlines as to which method was likely to be adopted - the US airlines generally favoured the ATN-1 solution and the European airlines were not so convinced and were seeking a quick and short term cost beneficial fix to solve the ACARS/AOC saturation problem. This might explain why IATA had not taken a position yet. Paul Camus confirmed that should the airlines adopt the SITA route there would be no Host changes; alternatively should they go with ARINC then an OSI Host would be advisable at the user site. For an aircraft to be interoperable with both methodologies then it would be forced to implement both access capabilities on board the aircraft. i.e. to dual stack.

5.2.5 Paul Hennig agreed mostly with this assessment. SITA were not proposing to implement an X.75 bridging mechanism. The ARINC solution would not necessarily require a host computer upgrade although some airlines might wish to do so. Boeing and Aerospatiale might be able to provide both solutions depending upon who were their customers for the avionics; so user demand would decide the market place. In addition US administrations had formed a 'Free Flight Development Office'. He mentioned about co-operation in the European PETAL-II Trials and noted that any required ground changes would be done outboard of the host computer. The AAL proposal would include data processing by a separate CMU which was not integrated within the FMC. It would remain for the avionics providers to agree certification with the FAA and prove data was getting to the FMC. Danny Van Roosbroek stressed this to be an important initiative and said that it was breaking new ground. PETAL-II and AAL would agree a list of operations (ODIAC) services by year end, for implementing on 4 AAL B767 aircraft and would also specify any 'missing links'.

5.3 Briefing on Package 1 Maintenance, Potential Defect Reports and CCB Working

WP-07 - SME 2 (Air-Ground ATN Applications) Status Report

5.3.1 Frederic Picard presented WP07 which provided a summary status of PDRs raised against SV2 (Air-Ground Applications) ATN SARPS. Two CCB meetings had been held since the last WG3 meeting and this paper presented the status of the PDRs up to and including the previous week's Utrecht meeting discussions. During the reporting period there had been 3 CM PDRs, 10 for ADS, 3 for CPDLC and 10 for FIS. Status for each was indicated in the paper. Statistics showed that of the 85 PDRs since Phuket only 1 was still going through the CCB process; 10 had been forwarded, 12 rejected or withdrawn and 62 resolved. A report of each of the 26 PDRs for the report period was attached to the paper.

5.3.2 In discussion Mike Asbury stated that the CCB's responsibility was to keep SARPS stable but also as accurate as possible and the CCB database kept track of defects and enhancement PDRs. Steve Van Trees elaborated on the CCB assessment process. The first pass was to see if the PDR contained a SARPS error; secondly the 'roundness' of the PDR; if it was large and a new feature it was sent to the Subgroup to consider, then finalised; if small i.e. an over specification then there was no rush to deal with it. The threshold of seriousness had been raised over time as previously PDRs with only minor editorial changes to the SARPS had been considered, but no longer. Should there be a 'big bang' approach then the resulting Amendment or new Edition could include a large quantity of

PDRs. Masoud Paydar had given no indication of what would constitute publication of Doc 9705, Second Edition. From past precedent, regarding Annex 10, which was now up to Amendment 73, there would be few new Editions. The CCB should agree on amendment scenarios with Masoud. Paul Hennig understood that the ICAO documentation process would include an annual Amendment, until the publication became unwieldy then to do a new Edition print. This was not related to ATNP activities nor requirements, but was purely a document management exercise. Interoperability though was the keyword, perhaps involving extensibility markers. Steve said that the CCB had still not resolved how to deal with 'nice to have' PDRs and so was consequentially putting them currently into Package 2. There were therefore defects, enhancements and 'nice to haves'.

5.3.3 The CCB report would be a good sales tool for ATN and the PETAL-II Trials as Trials' managers could advise adoption of Doc 9705 SARPS plus designated PDRs which pointed to acceptable discrete changes. Discussion continued at length on different approaches to dealing with PDRs, with publicising of them, tying them to document editions - whether ICAO or otherwise - implementor liaison etc. etc. One final comment was that by ICAO doing one Amendment change a year it might be suggesting to the outside world that only one change had occurred altogether although that change could in fact embrace many incremental changes involving several PDRs. So any approach to configuration control was fraught with concerns and frustrations.

WP-20 - Redlined FIS Guidance Material

5.3.4 Frederic Picard outlined his WP20 which contained changes proposed to be included in the CAMAL - Part III - Chapter 5 - FIS Application in order to align with the ICAO Doc 9705 SARPS. It contained a configuration sheet highlighting all proposed changes to the last version of CAMAL. There was guidance for building FIS reports, i.e. an ATIS report related to ADS, and ASN.1 types for the FIS SARPS. Changes had been proposed, and notified to the CCB who have change action for CAMAL. Those changes received by ICAO up until the end of July 1998 would be adopted in the baseline CAMAL.

WP-21 - Proposed CCB Procedure for CAMAL Maintenance

5.3.5 Frederic Picard presented this paper containing a proposed procedure for changes to the Guidance Material in the CAMAL developed by SG2 at its last meeting. The CCB now had responsibility for maintaining CAMAL, but, until now, no procedure for handling amendments had been developed. The paper outlined a proposed way to enter changes. Each Part of CAMAL would have two versions, the master version and the engineering version. The master would be retained by the CCB, and updates would be made to the engineering version by the editor, with changes notified on the server through configuration sheets. When a set of changes was ready it was sent to the CCB for approval, placed on the ATN Server for wide acceptance and then on a WG list to indicate availability. Jean-Yves Piram accepted the need for a procedure, and would make a formal reply on behalf of SG1 at the Bordeaux meeting, although it would be decided in Toulouse at the beginning of September. There were still outstanding issues according to Tony Kerr and Steve Van Trees which would be aired at the next SG2 meeting. Paul Hennig was concerned at a single explanation line only on the revision page, for any single change, as he would prefer a PDR to fully cover that change or series of changes to CAMAL. He would also raise with the CCB that there was no formal editing procedure for Parts 1 and 2 of CAMAL, although there was for the rest of it.

5.4 Post Package 1 Work

5.4.1 No papers had been submitted covering this topic.

6. AGENDA ITEM 5 - GROUND-GROUND APPLICATIONS

6.1 Subgroup 1 Report

WP-13 - WG3/SG1 Chairman Report

6.1.1 This paper was presented by Jean-Yves Piram who reported on the progress achieved by WG3/SG1 in its work programme since the 12th WG3 meeting in Rio. There had been a meeting of the SG the previous week from 24 to 26 June in Utrecht. They had worked on their two main applications, ATSMHS and AIDC, although attention had been particularly focused on AIDC. State tables had been updated for inclusion in Doc 9705 as they were inconsistent with the current text. The submission of a new PDR had been agreed by the Subgroup although one item still warranted further investigation. Regarding the work programme, ATSMHS was undergoing business extension work (deliverable D125); also backwards compatibility issues had been analysed. Systems Management had been investigated for cross-domain only; there had been work on MTA management and the ISO document was a good one, although not adequately focused for SARPS. There had been agreement to provide SARPS for a minimum set of management functionality.

6.1.2 A CIDIN/ATN Gateway specification was an intended deliverable (D15). SG1 had attempted to inform the Russian delegation of the work status of SV3, but without success. Mike Asbury suggested that ARINC had contacts that might enable suitable contact to be effected. There had been no X.500 Directory activity, although activity was about to start, and material would be presented to the next WG3 meeting - Jean-Yves was cautiously optimistic. The SPACE project was underway and would be elaborated on by Jean-Yves later in WP23. There had been interest in an ATSMHS in several Regions of the world including the South Pacific, Japan - where there was an FAA agreement for a service in Year 2000 - and in ASIAPAC a task force had been created. A meeting in Caracas was scheduled for August in the CAR/SAM Region to look into an evolutionary approach to the ATN in this region.

6.1.3 There were addressing issues regarding AFTN for connections to Service Provider Networks. Future meetings were to be held 2 - 4 September in Toulouse and prior to WG3 in Bordeaux. Mike Asbury asked if SM issues would have been dealt with by the joint SG meeting; if so then the technical details should be passed to the SM Subgroup.

6.2 Review Trials and Implementation Activities

IP-05 - Summary of ASTMHS Trials and Implementation Activities in Spain

6.2.1 Manuel Garcia gave a summary of Trials and Implementation Activities concerning the Spanish ATSMHS Project, carried out by AENA, with the goal of implementing a fully operational X.400 network within Spain. Since March they had implemented an ATSMHS Gateway in a mock-up at AENA; it could use an X.400 network with AFTN. At the beginning of June functionality had been introduced at their operational Madrid COM Centre. The 5 Spanish Control Centres and 11 major airports had no message servers. This will provide a full X.400 service to all airports but the systems were not yet totally operational. The main goal was to migrate current AFTN applications to this network. A fuller WP would be written for the next WG3 meeting, outlining progress. The Chairman expressed delight that a ground-ground ATN implementation was now underway.

WP-23 - Study and Planning of AHMS Communications in Europe (SPACE)

6.2.2 In order to define implementation of the ATN Messaging in Europe (ATSMHS), EUROCONTROL, France, Germany, Spain and the UK had decided to join their efforts in a common project named SPACE. This project work had been briefly presented in Rio but more fully so here by Jean-Yves Piram. He described the master plan and stated that the programme was supported by TENs funding from the CEC. The paper showed the project organisation, phases - of which there were 4, and the deliverables. The paper highlighted the proposed deliverables for each phase. These were further split into work packages with each Consortium State either managing or contributing with other States. France would lead the project and had a defined role to play. Timescales for deliverables were shown in a table and ranged from April 1998 until May Year 2001. Breakdowns in effort and workload were also indicated for each State participating. TENs funding meant that each

State paid an equal 50% of the cost together with the CEC. Output was available to the CEC and therefore to ICAO. Jean-Yves' intention was to inform WG3 periodically on the progress of work packages and deliverables.

6.3 Briefing on Package 1 Maintenance, Potential Defect Reports and CCB working

WP-24 - Status of Sub-Volume III PDRs

6.3.1 Jean-Marc Vacher said that his report only contained a summary status of a few PDRs since Phuket. There were 8 for ATSMHS, of which 6 were resolved, 1 forwarded and 1 accepted; and there were 22 for AIDC, of which all had been resolved. 3 of them had been sent to the CCB Chairman but were not yet integrated into Doc 9705. They will be in Amendment 1. All 1998 AIDC PDRs were attached as copies to this paper including the one containing the new State tables.

6.4 Post Package 1 Work

6.4.1 There was nothing to report on this topic as no papers had been submitted.

7. AGENDA ITEM 6 - UPPER LAYER COMMUNICATION SERVICE

7.1 Subgroup 3 Report

WP-17 - ATNP/WG3/SG3 Progress Report

7.1.1 Steve Van Trees went through his SG3 report from the Bracknell meeting, held from 27 - 29 April. SG3 was working now on specialised applications functions, post the Doc 9705 era, covering security, SM, multicast and a generic ATN communications service (GACS). In addition there was ongoing maintenance of SV4 including enhancements. i.e. secure dialogue, connectionless multicast, GACS, ASO-ACSE plus SM in SV6 and the SV Data Dictionary Compendium.

7.1.2 The Directory Schema work, to be further progressed at a 'Joint Directory meeting', affected all SGs. Mike Asbury asked if the Connectionless Multicast work was an enhancement rather than a PDR and should IATA want the capability this would be dealt with at ATNP/3. Steve agreed that multicast was definitely an enhancement, and would be dealt with appropriately. ACSE development was a year behind due to vagaries of the key people involved and Steve had had to deal patiently also with UK non-concurrence.

7.1.3 Jean-Yves Piram acknowledged Steve Van Trees being the main contact regarding Data Dictionary development. He would like to have progressed it further himself but unfortunately as yet the Directory had not been physically tabled for consideration. Jim Moulton was tasked with this work but was now heavily involved with SM. Steve promised the Directory for the SG1 meeting in Toulouse. Jean Yves pointed out that the X.500 Directory was required as part of work funded by the CEC - timescales were tight.

7.2 Review Trials and Implementation Activities

7.2.1 No papers had been submitted to WG3 on this agenda item.

7.3 Briefing on Package 1 Maintenance, Potential Defect reports and CCB Working

WP-09 - SME 4 (ATN Upper Layers) Status Report Version Control Issues

7.3.1 Tony Kerr had given this report the previous week to the CCB meeting. It provided WG3 with the current status of PDRs raised against SV4. The 13 PDRs subject of this report were now available on the CENA server. SG 3 had worked on the 3 PDRs which were still open, one of which (98030007) had been rejected.

7.4 Post Package 1 Work

WP-11 - Proposed ATN Naming and Addressing Extensions

7.4.1 This paper was presented by Tony Kerr. It described a number of proposed extensions to the Upper Layer naming and addressing provisions, to overcome some current limitations. The work was Package 2 related, and WG3 was invited to approve those proposals. The paper included an ATN Naming Hierarchy diagram. It noted that problems occurred when there were applications which might have different instances simultaneously on different co-located systems. The CM application logon exchange allowed one address per application type and name-address mapping might break down when trying to communicate with SM Agents in Routers. There were 4 main issues to solve for Package 2 described in the paper. Application Entity Titles (AETs) were diagrammatically illustrated for both avionics and GS.

7.4.2 Mike Asbury requested the registration authority for local identifiers; this was still to be clarified. Dirk Fieldhouse drew attention to the Sys-id being not 'non-ambiguous'. Tony also expressed concern over the size of the 'Sys-id' field being 6 octets to cope with only two Sys-ids; he acknowledged that this oversizing required discussion in SG3 as did other queries raised by Greg Saccone, Jane Hamelink and Paul Hennig.

7.4.3 Mike asked whether this paper dealt with a hot standby on-board an aircraft. Paul Camus asked if the addressing scheme would cope with dual system architectures. i.e. CPDLC in System 1, CPDLC in System 2, with one being the hot standby for the other. Frederic Picard confirmed that the addressing mechanism was not meant to deal with redundancy but with the same applications running at both the air and ground ends, each having a different name. Paul Camus disagreed that two of the same systems in an aircraft was a local implementation problem and that the naming convention must cope with synonyms such as this. He was requested to write a paper to state the requirement and to perhaps provide also an IP on a potential architecture for such an application. Dirk Fieldhouse, supported by Mike Asbury, suggested that the operational requirement for an ATC service might require to address two or more systems with potentially the same physical address. The WG agreed that WP11 needed further iteration, with contributions from other WG3 members, and for creation of a further paper for the next WG3 meeting.

IP-06 - ARINC 741 Aeronautical DATA Network (ADN) Addressing Plan

7.4.4 Paul Camus submitted the ARINC 741 ADN Addressing Plan as an IP. Steve Van Trees noted that redundant equipment was covered in SV5. Paul Hennig suggested that there could be instances of two CM applications running at the same time and that this could cause Sys-id duplication.

WP-10 - Draft Specification for Generic ATN Communication Service (GACS)

7.4.5 Tony Kerr presented this paper on behalf of EUROCONTROL, which provided a draft specification and GM for a GACS; it followed on the acceptance by WG3 in Rio of a general EUROCONTROL concept for a Simple ATN Messaging System (SAM) which provided a transparent end-to-end data transfer service between users. The system could provide a migratory approach for applications such as AOC over ACARS using an ATN 'harness'. It would provide 4 basic services as described in the paper. Mike Asbury and Jean-Yves Piram were more re-assured with this presentation and that it was not proposed as an application as such. Mike requested further iteration of the paper plus comments perhaps from Frederic Picard and Jean-Yves. EUROCONTROL are likely to start validating GACS SARPS in the September/October timeframe.

WP-16 - Draft Sub-Volume 6 of ATNP Manual

7.4.6 Tony Kerr explained that WP16 was a draft ATN SM provision for inclusion as SV6 and has been updated since Rio. WP16 simply consisted of a configuration sheet, a preface, a table of contents and issues/work in progress - the whole draft SV 6 would be included in soft copy available after the meeting. Changes since presentation at the Rio meeting were few. It was now with the new SM Subgroup to the JWG although not yet a fully stable document. The WG noted the updates - Tony cautioned that the document was not a stable enough reference for SGs to use in their work.

8. AGENDA ITEM 7 - CNS/ATM-1 & FANS-1/A ACCOMMODATION, TRANSITION AND SYSTEM CAPABILITY

IP-07 - USA Data link Activity regarding AAL ATN Equipage

8.1 Although not strictly covering accommodation issues altogether it was felt appropriate to have Paul Hennig explain his IP07 to allow further understanding by WG3 about the recent initiative by AAL to consider an ATN-1 equipage by Year 2000. (See under Agenda Item 5.2 and IP04).

8.2 IP07 was a subset of Tony Whyman's overheads illustrating with block schematic layouts the possible configurations between aircraft and ground. It covered both the suggested SITA and ARINC communications solutions to the ACARS congestion problem envisaged within 2 years. Greg Saccone asked Paul Hennig whether the ARINC system would support ATN and FANS-1. i.e. was there a dual stack? There apparently was and it could be done on the aircraft where it would be a waste of time and money or in a GS where it would be cheaper. Danny Van Roosbroek stated that for the provision of an ATC service a full stack is required, regardless of what may be required for AOC applications.

9. AGENDA ITEM 8 - ANY OTHER BUSINESS

Documentation Tracking

WP-08 - Version Control Issues

9.1 Tony Kerr presented the paper on 'Version Control issues', which EUROCONTROL had agreed to co-ordinate at the Rio meeting. It recommended that the CCB should define a baseline consisting of all PDRs closed into the Edition 2.2 SARPS and to use best endeavours to achieve backwards compatibility. Soon there would be operational aircraft equipped with 'Package 1' compliant avionics which must be accommodated now and in the future. The paper went on to discuss Package 1 maintenance and Package 2 changes and how resolution of PDRs figured in these activities. Should a PDR be safety critical then 'Fast Track' procedures would be necessary to deal with it. Section 4 of the paper contained a list of items to consider such as document editions, protocol versions (including protocol evolution and version interworking using CM), plus system and procedures versions.

9.2 Much discussion on documentation and software tracking had taken place with ICAO at the earlier joint WG2/WG3 meeting. Tom Kraft was concerned about problems with intermix where versions continued to be implemented and nothing ever went away, which costs the user heavily. Danny Van Roosbroek suggested that it was even more complex than that with different versions and different manufacturer implementations. There was also confusion with having documentation at Edition 1 and a protocol at Version 1. Further discussion took place regarding Editions of SARPS being 'paper' control rather than the 'technical' control as applied to applications and whether this was an ICAO or a manufacturer problem. How for instance should controls work for 2 ATS units implementing different sets of functionality? Tony Kerr had pointed out that either we dealt expeditiously with the issues now or we would possibly suffer later, when they became more complex and involved. Tom Kraft agreed with Steve that they should be dealt with now. Mike Asbury was concerned though that there could be levels of implementation for which backwards compatibility was not possible and implementing Security could be an example of this. Danny added further complication by suggesting that there were versions of operational service also e.g. regarding the exchange of ATC clearances in both Terminal and En-route Areas employing different subsets of CPDLC messages, with possible differences existing between regional implementations.

9.3 Paul Hennig believed that if we were not careful, we could reach a non-backwards compatibility stage between ATNP/2 and ATNP/3 and we must certainly go to ATNP/3 with the intent to both maintain interoperability and acknowledge Regional implementations. Tom Kraft said that ADSP needed to be involved as well, having heard Danny's mention of operational services (and therefore operational requirements); also what about intermix and multi versions of FANS-1/A? Paul Hennig asked whether two different versions of CM could work together, as this was an application at the very basic level. Steve Van Trees emphasised that implementors must have faith in standards; there must be traceability.

9.4 Mike Asbury said that this whole topic warranted an agenda item at the next WG3 meeting to enable even fuller discussion on the 'whens, wheres and hows' of version/edition numbers. WP08 certainly triggered well considered responses from several WG3 members which continued on the

following day, with two thirds of the working day given over to an exhaustive appraisal of Section 5 of WP08 dealing with 16 very important 'Conclusions and Recommendations' to do with Version Control issues.

9.5 Mike Asbury, the WG3 Chairman, said that he would encourage members to arrive at a suitable course of action for each of these 16 Items in Section 5. Note that Sub paragraph letters in this paragraph relate directly to equivalent Sub paragraph numbers in Section 5 of WP08, as follows:

(a) **How to manage the documentation including Package 1 SARPS when Package 2 is published.** Mike Asbury warned that we have to be aware that ICAO have 'tried and trusted' methods for documentation control despite what we may desire to be the case. Steve Van Trees agreed but stipulated that we must reconcile versions with implementations; however perhaps the CCB could keep track of Versions and Editions and therefore keep up with interoperability for the benefit of Boeing, Aerospatiale and other vendors. Mike Asbury queried whether the CCB should have this remit. Danny Van Roosbroek concurred; he believed that implementors should pragmatically know which protocol Version to implement and which document Edition and ICAO Amendment to abide by and the CCB was the appropriate body to ensure such awareness. In fact the CCB should maintain a matrix relating Versions to Editions to Amendments etc. Mike Asbury said that the information should be available with a list of PDRs and their status against a baseline. A living document such as an 'Implementor's Guide for CNS/ATM Applications' could be required. Mike stated that this recommendation needed to be passed to the CCB for discussion with ICAO and to report back at the next WG3 meeting. Final comment by Steve was that all PDR resolutions in Package 1 must be incorporated in Package 2.

(b) **Guidelines needed by editors producing Package 2 SARPS of how to accommodate Package 1 changes.** Mike Asbury stressed that there should be strong backwards compatibility. Paul Hennig suggested that different air implementations (freedoms) could exist but that the GS must be able to accommodate them. Mike further stated that WG1 may have to be responsible for writing these guidelines. Jean-Marc Vacher warned that when this paper was produced it had not been known that Package 2 would be a series of amendments to Edition 1 and not a 'big bang' approach. Mike Asbury clarified further that Doc 9705, 1st Edition, Amendment zero (the baseline Package 1) would contain PDRs, and that functionality upgrades would warrant further Amendments; Package 2 enhancements would not necessarily cause an Edition 2 of Doc 9705 to be produced though. So there would be in reality no Package 2 as such (and in fact ICAO had stated it was averse to mention of Package 1, 2 etc., in the SARPS) and maybe even Package 1 would become undefinable eventually. So there were different permutations. i.e. different Versions, Editions, ASN.1s etc., and Steve Van Trees supported an incremental approach to updating Doc 9705. If the CCB was to deal with enhancements as well as defect PDRs it would need changes to its Terms of Reference. Tony Kerr added that there was a distinction between absorbing PDR changes to the various Packages and the evolution of protocols. Dirk Fieldhouse reminded WG3 that it would be necessary to trace enhancements (implementor's solutions?) back to operational requirements. Mike Asbury ended this discussion by stating that Package 1 was amorphous; we had a baseline Doc 9705 and then Amendments - whether from PDRs via the CCB or enhancements (through PDRs or otherwise) dealt with at the full ATNP meetings and he would write a paper on the subject of this WP08 recommendation for the next WG3 meeting.

(c) **Guidelines for editors regarding version control in the core ATN SARPS and the CAMAL.** Core SARPS were the responsibility of WG1 via Paul Hennig so he should action this requirement. Frederic Picard's paper WP21 would cover CAMAL maintenance. Jean-Marc Vacher pointed out that Doc 9705 and the CAMAL were correlated but not developed concurrently and soon it would be difficult to relate the CAMAL to Doc 9705, 1st Edition, Amendment 'N'!

(d) **A statement needed about Version 1 aircraft operating in Version 2 environments and vice versa.** Manfred Okle expressed concern about how to reconcile software Versions to specific Amendments and Package 1 functionality. Software functions ground and air were between implementor and customer. Danny Van Roosbroek gave a further example where operational requirements could be the same although the protocol (say X.500) could be different and this would mean an enhancement to Doc 9705. i.e. a change to CM. Dirk Fieldhouse gave yet another example of complex software implementations where some Package 1 characteristics might be implemented in different ways; maybe there was non-interoperability yet the same functionality. These comments

from the experts caused Mike Asbury to say that WG3 could not do much about this item as it appeared too complex to warrant a simple statement and new protocols became new amendments. Anyone therefore with anything to contribute should supply papers to the next WG3 meeting.

(e) **Sub groups should bear in mind that Package 2 applications must be able to function in Package 1 compatible mode.** Manfred Okle said that Package 1 was a subset of Package 2 yet Package 1 functionality could be implemented in Package 2 by employing other protocol means. This could mean for instance that similar errors might behave differently between different packages and therefore there was no Package 1 cut-off line. Jean-Marc Vacher suggested that (b) and (e) were tied together.

(f) **Procedures need defining to alert Package 1 baseline implementors urgently on safety critical assessed PDRs.** Pam Tupitza said this required a 'Fast Track' approach. Masoud Paydar had highlighted this process earlier; such a change would be 'flashed' to States approximately 6 weeks after it was received by ICAO, and there was an existing mechanism through the CCB. Paul Hennig clarified further that the Doc 9705 update cycle would in any case obviate the involvement of States as this document did not abide by the normal ICAO change process. Paul Camus's understanding was that the CCB had no authority to decide if a PDR had a safety concern or not; this was a subjective assessment related to the user environment. Tony Kerr agreed that PDR originators should indicate safety criticality anyway and use a rapid alerting mechanism themselves. i.e. send an urgent fax should avionics equipment persistently crash. Mike Asbury suggested that safety was 'in the eye of the beholder'. Steve Van Trees supported the various statements made. Mike Asbury agreed with Paul Hennig that he would ensure for (user) safety critically assessed PDRs there was a Fast Track process documented through the CCB and/or ICAO to ensure implementor's were urgently appraised of such a situation, particularly should these PDRs create interoperability problems.

(g) **Package 1 application changes should allow protocol evolution without warranting Version number changes - to be decided case-by-case and to include the interworking level required.** Tony Kerr clarified this recommendation with an example whereby a new protocol might not be supported interoperability-wise in a particular environment. The action was for the WG3 Chairman to table a paper at the next WG3 meeting and if agreed there to submit it to the JWG meeting in Bordeaux; it would include an enhancement review to ensure ultimate suitability and acceptance by ATNP/3, as well as suggesting necessary changes to CCB ToRs. Jean-Yves Piram was concerned that it was SG1's responsibility to work on Package 2 material and the CCB should only have responsibility for the upgrade of Package 1. For instance, it was recognised that 'minor corrections' would go into Package 2 without necessarily raising PDRs and only to refer to the CCB modifications to Package 1. Mike Asbury stressed that the CCB was the 'guardian' of interoperability. Steve Van Trees believed the CCB must in any case keep track of outstanding 'minor' changes.

(h) **To ensure that as SARPS evolve supporting operational procedures remain possible.** Jane Hamelink warned that SARPS evolution did not necessarily mean more capability. i.e. the CPDLC message 'Disregard' was being considered for message set deletion and this could mean backwards adjustment to procedures in Package 1. Danny Van Roosbroek said this item was important and versions of operational requirements must be tied to corresponding 'building blocks' i.e. CPDLC usage for ATS, ATC dialogue and other services in the different environments. He agreed to develop a paper covering EUROCONTROL's comparison exercise involving the GS at Maastricht and a particular airborne implementation. Paul Hennig mentioned the latest PETAL-II initiative with American Airlines (AAL) where they would be looking at phases of CPDLC message set implementation.

(i) **To state formally which version of the ADS Manual (including ADSP WG drafted material) each ATN SARPS Edition is based on.** An edition of the ADS Manual would be published by ICAO in the autumn and an amendment process was not expected. Jane Hamelink believed there would be resulting amendments to ICAO Annexes 2, 3 and 11 plus PANS-RAC and did not expect any version 2 of the ADSP Manual to pass down to the ATNP. Manuals were self-contained, and not evolutionary, although a circular might perhaps be originated. Paul Camus said that certification authorities would need to be able to trace which operational and system requirements were linked to which SARPS Edition; also, the definition of operational procedures was important to a pilot and these could be different in Europe as opposed to the USA. He suggested that presentation of the ODIAC work done by EUROCONTROL might be useful education for ADSP members. It was agreed to ask

Masoud Paydar to draw this prospect to Chris Dalton's attention. Mike Asbury said that he expected all further ADSP operational requirements to be highlighted through the medium of other ICAO standing documents.

(j) **Implementations to ignore extension fields they are unable to interpret.** Paul Hennig said this was a backwards compatibility problem and therefore variable fields or extensibility markers could be utilised. Jane Hamelink insisted that Package 2 had to work with Package 1 come what may but not the reverse; this was forwards compatibility, which was not workable. Furthermore, Package 1 could not be developed to 'anticipate' an extension nor a future Package enhancement. Tony clarified that the issue was to get around a bug - say in a CPDLC message - by use of extensibility. Jane was adamant that should Package 2 send a 'Package 2 only' message to a Package 1 user, the application must not ignore this, but must abort. Mike Asbury suggested that SARPS editors should examine the applicability of extensibility markers as related to their applications and see how these markers would affect further developments whilst maintaining compatibility/interoperability. Paul Camus indicated that the pilot should be informed of unusual circumstances such as by the trigger of a 'Service Unavailable' message. Jane further replied to Tom Kraft's mention of a requirement for air/ground version number negotiation, that CM and not the individual application would provide this.

(k) **Guidelines for editors on use and definition of protocol extensions required.** It was pointed out that Annex B to paper WP08 covered this item and this was an editor's action item.

(l) **To define a future common approach to deal with inconsistent version handling between the different Package 1 applications.** Mike Asbury asked Tony if the differences were significant. Tony thought that they were just significant enough to be awkward. Mike thought that at present, air/ground version exchange was currently carried out by the CM application only and not by any other air/ground application. This point need only be noted for future compliance, but required no further action at this time.

(m) **To consider if current CM provisions acceptable (implying that aircraft must carry multiple application versions to communicate with older stations.)** Greg Saccone noted Tony's point. Arrangements were in hand to ensure that versions of CM could intercommunicate. It was possible that a PDR may have to be raised - there were several possible solutions.

(n) **To consider the consequences of the Package 1 AIDC protocol not providing for version detection and negotiation.** The consequences were that if there was a version change somewhere then every associated avionics/GS must change accordingly to keep in synchronisation. Jean-Yves Piram would investigate and report to the Bordeaux WG3 meeting.

(o) **To consider the consequences of version handling being in some cases implementation dependent (e.g. with ADS Report Forwarding and the Type A Gateway).** Steve Van Trees said to note that multiple versions would operate according to mixed equipage. i.e. FANS-1/A and ATN, and a process should deal with this. Mike Asbury requested to know what the consequences were; were they to do with some implementations being different or when there was non-standardisation. Jean-Marc Vacher would also come back on the Type A Gateway issue.

(p) **The requirement may exist for software and hardware part numbers and version identification to be interrogated by a Systems Management (SM) application.** Mike Asbury said that this could be done in either direction according to what an SM application would allow. Paul Camus suggested use of Part Numbers for hardware and software and Version numbers for Protocols - as a radical change to the already exhaustively agreed conventions with ICAO. Mike thought that ICAO would not look kindly on commercial part numbers being used in ICAO documents for reference. Pam Tupitza reminded members that they were discussing Configuration Control, a profile approach previously recommended by Danny Van Roosbroek; this warranted him producing a paper on the subject - which he agreed to do.

9.6 The Chairman acknowledged that WP08 was a most important paper and it had indeed generated much debate within the WG. Certainly a long while had been spent carefully assessing each of the 16 conclusions and recommendations but it had been the preview to an important agenda item for the next WG3 meeting and had been most worthwhile. It had also stimulated offers of several diverse papers for that next meeting.

WP-12 - Multicast Extensions to the OSI Reference Model

9.7 Jim Moulton gave a brief explanation on Multicast Extensions to the OSI Reference Model. His report presented the status of the work currently underway within ITU-T SG7 Committee. It showed how to do Multicast operation and how to progress it and he confirmed for the WG3 Chairman that it was performed in the lower layers.

IP-02 - Proposed ATN Management Systems Platform OSIMIS Model

9.8 Pam Tupitza provided an in-depth description of this new proposed architectural model which could be set up to resolve network and system management issues in global domains. The model had been developed by London University College and it was a model to solve management systems problems which were also of concern to the ATNP.

9.9 As SM networks had evolved so had the need for more intelligent routers and intermediate systems etc. The model included generic browsers although as Dirk Fieldhouse pointed out work had been done in France using a world-wide web browser with an OSI management system. The model's particular strength was with its ability to create virtual object classes which enabled security and economy of management information data transfer by setting local 'flags' to trigger off alerts when activated. Most COTS products did not have the richness, manoeuvrability and flexibility of the OSIMIS Model. Pam had not actually compiled the model to prove the concepts. Comment from Mike Asbury and Manfred Okle covered inter domain access and structure of the environment being utilised. Mike warned that the model might well be useful in an academic or banking environment but ATC operations were real-time and safety critical and was the model likely to be robust enough to cope with such demands. Pam stated that the designers had taken the OSI management model and had implemented a subset of it. Mike Asbury thanked Pam for the work she had done on this so far, and looked forward to an updated paper at the next meeting.

Potential Paper on System Security

9.10 The Chairman requested the status of Gerard Mittaux-Biron's Paper. Gerard said that much of his work for this meeting had been lost in an administrative accident. His expanded paper on system security would be presented at the next meeting in Bordeaux.

10. AGENDA ITEM 9 - DATE AND PLACE OF NEXT MEETING

IP-03 - ATNP Working Groups' Meeting Bordeaux

10.1 The next meeting will take place in Bordeaux, at the kind invitation of Arnaud Dedryvere (see IP03 above). WG 3 will meet from Tuesday 29 September to Friday 2 October inclusive.

10.2 For the convenience of members, the full schedule of meetings is set out below -

WG 1 -	5-6 October		
WG 1/SG2	7 Oct - 9 Oct(am)		
WG 2	30 Sept - 2 Oct	Joint WG2/WG3	30 Sept (1400 - 1530)
WG 3	29 Sept - 2 Oct		
JWG	7 Oct (am only)		
JSG (SA)	7 Oct (pm) - 8 Oct		
CCB	28 Sept (pm)		

10.3 At the next-but-one meeting in Honolulu the arrangement of WG and SG meetings will probably be similar to those shown above.

M J A Asbury
Rapporteur, WG 3

9 July 1998

ATNP WORKING GROUP 3 - THIRTEENTH MEETING

29 June - 2 July 1998

Utrecht, Holland

AGENDA

1. Review/approve meeting agenda
2. Review report of the 12th meeting of WG3 (Rio de Janeiro)
3. Review status/outcome of appropriate meetings -
 - 3.1 ADSP WG A & B Meetings (G Anderson/M J Asbury)
 - 3.2 ATN CCB meetings (S Van Tree)
 - 3.3 ICAO/ANC activities (M Paydar)
 - 3.4 Joint System Management SG (M Bigelow)
 - 3.5 Security SG (S van Tree)
 - 3.6 Other ATNP Wgs
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, Potential Defect Reports 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, Potential Defect Reports 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, Potential Defect Reports and CCB working (T Kerr)
 - 6.4 Post Package 1 work
7. CNS/ATM-1 & FANS1/A - Accommodation, Transition and System Compatibility (incorporating input from WG 1 SG Meeting,)
8. Any other business
9. Date and Place of Next Meeting (TBD)

LIST OF WORKING PAPERS

ATNP WG3 - Thirteenth Meeting - Utrecht, Holland - 29 June - 2 July 1998

Paper Number	Agenda Item	Presenter	Title
13-1	1	M Asbury	Agenda
2	1	M Asbury	List of Working Papers
3	1	M Asbury	List of Attendees
4	2	M Asbury	Report of 12th Meeting, Rio de Janeiro
5	4.1	M Asbury	Report of SG2 - Air/Ground Applications
6	3.1	M Asbury	Report of ADSP WG A & B Meetings - London, June 1998
7	4.3	F Picard	SME 2 (Air-Ground ATN Applications) Status Report
8	8	T Kerr	Version Control Issues
9	6.3	T Kerr	SME 4 (ATN Upper Layers) Status Report
10	8	T Kerr	Draft Spec. for Generic ATN Communication Service
13-11	6.4	T Kerr	Proposed ATN Naming and Addressing Extensions
12	8	J Moulton	Multicast Extensions to the OSI Reference Model
13	5.1	J-Y Piram	WG3/SG1 Chairman Report
14	3.5	M Bigelow	Response to WG3/SG2 request for risk/threat analysis
15	3.5	M Bigelow	Sub Group 2 Chairman Report
16	8	T Kerr	Draft Sub-Volume 6 of ATNP Manual
17	6.1	S Van Trees	ATNP/WG3/SG3 Progress Report
18	8	J Moulton	Security Management for Connectionless and Multicast
19	3.2	S Van Trees	ATNP/CCB Chair's Report
20	4.3	F Picard	Redlined FIS Guidance Material
13-21	4.3	F Picard	Proposed CCB Procedure for CAMAL Maintenance
22	-	-	(Not Allocated)
23	5.2	J-Y Piram	Study & Planning of AMHS Communications in Europe
24	5.3	J-M Vacher	Status of Sub-Volume III PDRs
25			
26			
27			
28			
I/P13-1	4.2	D V Voosbroek	EURO-16 AG-DL - Eurocontrol Datalink Project
2	8	P Tupitza	Proposed ATN Management Systems Platform (OSIMIS)
3	9	A Dedryvere	ATNP Working Groups' Meeting Bordeaux
4	4.2	P Hennig	ATN Implementation
5	5.2	M Garcia	Summary of Trials and Implementation Activities
6	6.4	P Camus	Aeronautical Data Network Addressing Plan
7	4.2	P Hennig	U.S.A Data link activity
Flimsy 1			Communiqué to ADSP
Flimsy 2	3.4		Request for System Management Requirements
Flimsy 3			Action: Return of 98050020 to Accepted Status
DP13-1	9	M Russell	Draft WG3 13th meeting Report from Utrecht

ATNP WG3 THIRTEENTH MEETING - DRAFT ATTENDANCE LIST

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