ATNP/WG 3

WG3/15-DP1A

AERONAUTICAL TELECOMMUNICATIONS NETWORK (ATN)

WG3 - (ATN Applications and Upper Layers) Fifteenth Meeting

Honolulu, Hawaii, USA

19 – 22 January 1999

Agenda Item 11: AOB - Review Draft report of the 15th meeting of WG3 (Honolulu)

Draft Report - Working Group 3

(Presented by M J Asbury)

1. INTRODUCTION

1.1 The 15th meeting of the ICAO Aeronautical Telecommunications Network Panel Working Group 3 was held in the Ala Moana Hotel, Hawaii, from 19 – 22 January 1999. The meeting was chaired by the WG3 Rapporteur, Mr M J Asbury, and was attended by some 33 Members from 10 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 Working Group reviewed the report.

2. RECOMMENDATION

2.1 Members are recommended to review the report and pass any corrections to the Rapporteur by e-mail. The final draft will be reviewed for correctness at the 16th meeting in Naples.

REPORT OF THE 15TH MEETING OF THE AERONAUTICAL TELECOMMUNICATIONS NETWORK (ATN) WG3 - (ATN APPLICATIONS AND UPPER LAYERS), HONOLULU, HAWAII, USA, 19 – 22 JANUARY 1999

1. INTRODUCTION

1.1 The 15th meeting of the ICAO Aeronautical Telecommunications Network Panel Working Group 3 was held in the Ala Moana Hotel, Hawaii, from 19 – 22 January 1999. The meeting was chaired by the WG3 Rapporteur, Mike Asbury, and was attended by some 33 Members from 10 States and 5 International Organisations. 43 Working Papers (WP) and 7 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 included (in nearly alphabetical order) –

Mike Asbury (MA)
Thomas Belitz (TB)
Mike Bigelow (MB)
Paul Camus (PC)
Francesco Cecere (FC)
Jane Hamelink (JH)
Paul Hennig (PH)
Ken Itano (KI)
Claude Leclerc (CL)
Tony Kerr (TK)
Jack McConnell (JMc)
Jim Moulton (JM)
Gerard Mittaux-Biron (GMB)
Masoud Paydar (MP)
Frederic Picard (FP)
Jean-Yves Piram (JYP)
Greg Saccone (GS)
Naoto Sakaue (NS)
Jean-Marc Vacher (JMV)
Danny Van Roosbroek (DVR), and,
Steve Van Trees (SVT)

1.3 The meeting was arranged by the FAA, and Hoang Tran welcomed the members to Honolulu. MA thanked the FAA for their organisation on behalf of the WG members. He also thanked members for their early application for WP numbers – this had greatly facilitated the early issue of papers.

1.4 In addition, Ron Jones, FAA and Chairman of WG 2, had made available a CD with a compendium of ATNP information on them, including SARPs, the CAMAL, meeting reports and papers. He presented copies of this CD to everyone at the meeting.

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

2.1 There was an error on the Agenda, there being two Item 8s. The second was retitled ‘8a’, and the agenda was approved. Th joint meeting with WG 2 would be held on the afternoon of 19/1/99, and would include agenda items 3.3, 3.4 and 3.5 from the WG 3 agenda. Masoud Paydar would not be here until next week, but he had sent a Secretariat report (WP 32), which MA would present.

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

WP 2 – Review of the Draft Report of 14th 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. (Thomas Belitz reported that he had been unable to retrieve the report from the server, but no-one else had indicated a problem – perhaps no-one else had tried!)

3.2 The Report was reviewed on a page-by-page basis. There was only one minor change - JMV noted that on page 10, para 6.2, in the last sentence ‘AFTN’ should be changed to ‘ATFM’. The draft notes were approved – since the only change was minor, MA did not propose to re-post the notes on the server – but he would check that they were retrievable.

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

Agenda Item 3.1 - ADSP WG A & B Meetings

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

4.1 MA presented this paper, which contained brief reports of the two meetings - ADSP WG A and WG B – both of which were held in Madrid just after last ATNP meetings in Bordeaux. Generally WG A dealt with ADS and ADS-B, and WG B dealt with all other air/ground and ground/ground matters.

4.2 WG A, chaired by Don MacLean of Canada, primarily concerned itself with ADS-B and proposed changes to ICAO PANS/RAC (Doc 4444) to include procedures developed for ADS. (MA would skip any reference to ADS-B since it was not yet of concern to ATNP WG 3.) MA noted that Doc 4444 procedures had very strong grandfather rights in ICAO, which often meant that if there was a tendency for SARPs and Doc 4444 to differ, it was usually the SARPs which had to be pulled into line with Doc 4444. There had been a WG A drafting group, which had prepared material for inclusion, but much was re-opened at the meeting and re-negotiated. However, the result was that there was now a chapter in Doc 4444 relating to ADS. (A copy of this draft chapter would be presented to WG 3 at the Naples meeting.) Issues discussed by WG A which could affect WG3 and its subgroups included threshold issues in ADS event contracts, and lexicon changes resulting from a closer ADSP/ATNP mapping. MA would attach brief notes of the ADSP WG A meeting to these notes (Appendix D), but copies of main report were available from ICAO (Chris Dalton – ADSP Secretariat) or from Don MacLean in Ottawa.

4.3 WG-B, chaired by Jean Francois Grout of France, also principally concerned itself with the preparation of a CPDLC chapter for Doc 4444, but in addition dealt with several items, which affected WG 3. These included METARS, the IA5 alphabet, the definition of Data Authorities, D ATIS and aspects of CPDLC operation.

4.4 The problems of the development of a D-FIS METAR service were discussed, particularly the form of the information, its ranges and resolution, and the need to expedite information from the ICAO METLINK study group. The need for a contract service was also discussed, and the WG agreed that this was not required. In addition, the point was made that if we have a METAR service, should we also have a SPECI data link service (Special Met Reports which could affect the safety of aircraft). Both ADSP and this WG were keen to see that both METAR and ATIS should use the same parameter ranges and resolutions, but the World Met Organisation, although agreeing that 90-95% would be the same, has not yet achieved agreement on the other 5%. FP would report further on this under Agenda Item 4.4.

4.5 It had also been proposed to WG B that there was no need to use or specify the use of the lower case letters in the IA5 alphabet. The ADSP could see no need for this, and agreed that there should be no need to include it in any requirements. MA asked WG 3 members if they could identify if any operational need for lower case as opposed to just upper case letters.

4.6 WG B had also reviewed the definitions of ‘Data Authority’ and its associated ‘Current’, ‘Next’ and ‘Downstream’, to indicate the technical, rather than the operational constraints. (However, JH reported that the ICAO Secretariat had changed the definitions back again without further consultation – this led MA to question whether was any need for WG meetings at all, and to the value of their work, since anything they produced could be changed by the Secretariat regardless of any international consensus.)

4.7 The ADSP WG B has also looked at the use of the ‘Service Unavailable’ and other system messages, particularly with regard to the use of the Logical Acknowledgement message in combination. The question was if a system message denying service is sent, was there any need for a LACK at all? (This has had a significant effect on Chapter 7 of the CPDLC SARPs, and resulted in the generation of a large PDR by SG2 and the CPDLC editor.)

4.8 There had also been some discussion as to whether D-ATIS should be available world-wide. WG B agreed that this should be so, since it would be difficult to put artificial constraints on its reception.

4.9 Finally, MA reported that ADSP WG B was responsible for the development of Required Communication Performance (RCP) criteria - this was being done through a subgroup being chaired by Roy Oishi, of ARINC. RCP work would not affect us yet - may be in Package 2, but perhaps not even then.

4.10 JYP was unhappy about the world wide reception of D-ATIS. He was unaware of the operational requirement, and the use to which ATIS information could be put. He could understand the need for ATIS information for all airports on flight plan, but why any others? MA pointed out that one doesn't actually know when a pilot may ask for information; for example on a New York to Paris or Madrid flight in a B777 twin engine, the airline is subject to extended twin operations with a maximum time from en-route diversion. If this happened to be Keflavik, the Iceland ATIS there may indicate passage of a weather front, wind direction, etc. MA agreed with the ADSP WG B that there were beneficial operational requirements.

4.11 JYP accepted the explanation, but was particularly worried about the potential for Subnetwork overload, if significant numbers of aircraft were requesting ATIS from hundreds, perhaps thousands, of miles away, and the problem of scoping the requirement. He would bring this to the attention of WG 3 for further discussion at its next meeting.

Agenda Item 3.2 - CCB Report

WP 15 – CCB Chairman's Report

4.12 SVT gave a verbal presentation on the CCB activities (WP 15 was still in final stages of preparation, since the meeting had only been held the previous day.) The 8th meeting had been held on 18 January. SVT's fax number had changed (see attendance list, Appendix C), and the CENA Toulouse e-mail address had also changed. The general policy of the CCB was to expedite treatment of the PDRs, so that they were not held up in the CCB system overlong. However, there had been a flood of PDRs submitted in December, from ATNSI – most of these have been referred to the SG, but there were still some to be resolved – SG 2 would be holding an ad hoc meeting to help solve some of the problems. In addition, there have been some Internet PDRs, resulting from interesting protocol interactions – for example if there is loss of IDRP but subnetworks are not lost, what would be the effect on the system? These are being looked at by WG 2. Since the publication of Doc 9705 there has been 51 changes, ranging from editorial to interoperability, and TK has prepared a taxonomy paper on this.

4.13 The major unresolved PDR, which the CCB felt should be brought to the WG, was the problem of Doc 9705 and Doc 4444 compatibility and alignment, and the question of retention of the CPDLC message set tables in both documents. FP presented a PDR to the CCB meeting giving two options - to do the alignment, or to remove message set from chapter 7 of 9705. The CCB decided first and foremost that Doc 9705 must be in alignment with Doc 4444, since this was now stable. The CCB therefore decided to maintain the alignment, keep the message set in chapter seven and delete the precedence note. This is PDR 52, still proposed, but on its way to being resolved after FP derives an agreed position during his presentation as SME of SV2.

4.14 The CCB will produce, out of CCB 9 to be held on the first day of the Naples round of meetings, a compendium for Masoud which will give all the change pages for Amendment 1 to Doc 9705. Masoud has tentatively agreed to an annual amendment cycle, provided there is not too much of a work overload. The CAMAL has been returned to our purview, having been with the CCB since Christmas. The CCB is currently assessing the effect of ICAO editing, while accepting that the configuration control will be less rigorous than for the SARPs. There are currently two versions available – one on the CENA server in WordPerfect (three zipped files), and on the FANS-IS web site, in .pdf format, on four zip files. There is no guarantee of compatibility.

4.15 WG 2 are currently struggling with problems with the air/ground compression algorithm, and this has left a number of PDRs open – as a result of this and the review by SG2, there will be another session of the 8th CCB meeting which will be held on Thursday evening (21/1/99).

Agenda Items 3.3, 3.4 and 3.5

4.16 MA said that Agenda Items 3.3, 3.4 and 3.5 would be discussed at the joint meeting with WG 2 on the afternoon of 19/1/99. This was done, and brief notes of this meeting are attached at Appendix F.

3.6 Other ATNP WGs

4.17 PH reported that the 13th Meeting of ATNP WG 1 was held in the Holiday Inn, Bordeaux, from 5 - 6 October 1998. The meeting was chaired by himself and was attended by some 33 representatives from 10 States and 4 International Organisations.

4.18 MP, in his ICAO progress report, noted that, in the ICAO 32nd triennial meeting session had just finished, there had been much discussion on SARPs. They should be limited to broadly mature material, covering high-level system issues. Technical SARPs should be contained in a new form of document - a Manual not the best place for highly detailed technical provisions. The USA had made a proposal to rationalise Panels; both the ANC and the Council will look at it in more detail. Contrary to what most people here thought, the dates for ATNP/3 not yet firm - it will not now be February 2000, but it may be March. There was an ICAO sponsored South Pacific ATN awareness and education meeting in Bangkok - ICAO soliciting speakers, but in true ICAO fashion, attendees came free, but presenters had to pay.

4.19 Ongoing work reported by States included the USA AIDC and CPDLC work, Spanish ATSMHS operational trials and Italian work on the data linking of NOTAMs

4.20 Within the Working Group, major new work on both Security and System management was reported, with draft SARPs and Guidance material being made available for review. This important work on enhancements to the ATN will be available for presentation to ATNP/3 and ICAO adoption thereafter.

4.21 Significant problems considered by the Working Group included version control, development and implementation of enhancements and traceability of documentation change, and work in response to questions from the FLIREC Panel. SVT noted that there were hidden operational requirements in Annex 6 and there was a need for further liaison with the FLIREC Panel. These have yet to be fully resolved, and work is ongoing in the Working Group and Subgroups, but there is a shortage of State provided effort and resources, and the preparation of associated SARPs material will be delayed. In addition, a significant amount of WG work is dependent on input from other panels, and timescales for the provision of this information are not firm.

4.22 MP had emphasised that since there may not be an ATNP/4 (a perennial, unconfirmed and unsubstantiated threat), there should be no over-run of SARPs work, and it should be done by ATNP/3. It was firmly pointed out that this was not possible - there was not the time/effort available to do this. New work is needed and resources and funding is required.

4.23 There was a proposal to disband the Joint Working Group, and redistributing its tasks to WG 1. This was agreed, and the WG supported the disbanding of the JWG.

4.23 PH said that the draft minutes were on the server, and will be approved next Monday. He expected a mid-1999 publication date for the CAMAL. SARPs and guidance for multicast would not be ready for ATNP/3 - at best we could have architecture for proceeding. Other business and meetings beyond ATNP/3 will be discussed next week. Finally, WG1 needed agenda items from WG3 for ATNP/3.

5. AGENDA ITEM 4 - AIR-GROUND APPLICATIONS

Agenda Item 4 - Subgroup 2 report

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

5.1 The 19th Meeting of the ATNP WG3/SG2 (Air/Ground communications) was held in Albuquerque, from 8-11 December 1998. Tim Maude, ADSP SARPs editor was withdrawing from WG3/SG2 activities, due to

involvement in other work. Ian Valentine had joined the SG principally for work related to the development of conformance Protocol Implementation Conformance Statements – PICS.

5.2 There were two Potential Defect Reports outstanding in ADS, one for CPDLC and two for FIS. In CPDLC there were differences between the CPDLC descriptions and message set tables in ICAO Docs 4444 and 9705. ICAO seemed to find it extremely difficult to standardise between supposedly the same material appearing in the two documents. A solution could be to delete the CPDLC the message table from Doc 9705. This would be a WG 3 decision.

5.3 As currently specified, a Version 2 of Context Management will never be backwards compatible with a Version 1. A possible solution to allow compatibility was accepted, and would be presented to WG 3.

5.4 The SG has been tasked with investigating the problem of blocked messages and the knock-on effect, particularly in CPDLC which could result in significant delays far in excess of what was operationally permissible for ATC. SG 2 members noted the problem, but were reluctant to take drastic action until the problem had been properly scoped. However, the problem itself required wider operational publicity, and a paper would be prepared for ADSP WG A/B. This problem was a design feature of the OSI. JH had discussed the problem with Ron Jones, and it would be discussed in WG 2

5.5 The D-FIS editor was preparing the METAR service for implementation in the D-FIS application. It appeared that some information was not stable - the request for information on the ranges and resolutions for METAR had had to be passed to the ICAO METLINK Study Group for clarification. On this basis the editor was reluctant to do further work on this application, since we seemed bound by delivery from METLINK.

5.6 Major topics of concern to the SG were interoperability problems. For partial implementations to be successfully interoperable, the same options have to be chosen, all resulting in the same expected operational effect. The means of achieving this interoperability at a technical/functional level is through the development of Protocol Implementation Conformance Statements (PICS) which indicate the behaviour of the individual PDUs and the results, and then to compare the PICS for the partial implementations. The main PICS work is at the functional level. There are also implementation conformance requirements and problems at the higher, operational, level. One of the advantages of having PICS in a given format was that it allowed automatic comparison. Sample PICS tables were presented and reviewed. Manufacturers were very concerned that an aircraft performance will not need the full range of all parameters, and they were most reluctant to implement code they could/would not use.

5.7 Ian Valentine and FP had both prepared PICS for SG review – both had come up with the idea, and the SG accepted, that what was really needed was a two level PICS – syntactic and semantic (technical and operational). The SG agreed that it should be responsible for establishing the PICS template, and this should be established and prepared for full compliance. MA apologised to DVR for not bring PICS-related papers to this meeting, but the SG felt that the material would not be mature enough to bring to this meeting, and would present it in Naples. DVR was aware of the work of the SG related to PICS, and concurred.

5.8 The SG reviewed the question of security. There were still questions to be answered - for example, is there a need to for CM to exchange security data, and what is the nature of it. US crypto experts were querying the public/private key methodology. Although it was not proposed to encrypt ATS messages, commercial confidentiality may require AOC messages to be encrypted. There had to be co-ordination between SG 2 and the Security SG.

5.9 The SG was concerned about version control for the Air/ground applications. They were presented with a clarification of technical and operational system co-operation. ‘Interoperability’ and ‘Compatibility’ were defined. The SG argued that the rational for change was basically technical, and should be proposed by the SG, approved by WG 3 and authorised by the Panel.

5.10 The SG was made aware of the work of the AMCP Subgroup preparing the VDL Mode 4 SARPs. They did not seem to be taking note of any operational requirements from ICAO Operational Panels – e.g. ADSP – and had no operational participation. They were intent on separating surveillance position reporting from

systems navigating the aircraft, contrary to ADSP and ATNP requirements. Members were asked to review this with their AMCP members.

5.11 Discussion at the last ADSP WG3 meeting in Bordeaux highlighted concerns from Eurocontrol concerning 'Service Unavailable' and other system messages. It was implied that any system generated response could be generated prior to the Logical Acknowledgement and section 2.3.7 should be modified to take account of the fact that a LACK should not be sent if there was a system interrupt, and the message was never going to be presented to the end user anyway, due to, say, ERROR or Service Unavailable.

5.12 Paul Camus has submitted a paper on Version Control issues – this had been reviewed in depth, and a revised version would be presented to this meeting.

5.13 The next meeting of ATNP WG3/SG2 will be held in the Eurocontrol Headquarters, Brussels, from 1- 5 March 1999.

5.14 HT commented on the SG's concern over the work of the VDL Mode 4 group – he thought that there was a case for technology driving requirements. MA agreed, but pointed out that where possible, there should be consistency, and this seemed to be a case where there was scope for a fairly massive inconsistency.

5.15 SVT had two comments – he welcomed the move into PICS, but thought that we must be careful that ICAO didn't think it increased our remit to co-ordinate regional implementation – perhaps treading on the PIRG toes. In addition, he felt the WG needed to be very careful when looking at standards being developed by AEEC because it was a non-public industry and airline organisation with it's own agenda – we must not get competing documents. ICAO documents must have priority. MA was not aware AEEC was not recognised by FAA – SVT said that they were recognised, but not as a standard setting body for the purposes of certification. GS said that the AEEC wanted to define requirements beyond SARPs – i.e. at the level of implementation. He agreed that there may be 'competition' between RTCA and AEEC – he would discuss this later when presenting his paper (WP 28) under Agenda Item 4.4

Agenda Item 4.2 - Trials and Implementation Activities

WP 18 – Eurocontrol Trials End System (TES) Status

5.16 DVR presented an update on the Eurocontrol ATN Trials End System Status. He had given several updates and expected this to be the last one. The TES software is now at release C, with a protocol compatible with Doc 9705, but is generally not compatible with earlier versions. TES provided several Application Programming Interfaces (APIs), and these interfaces were shown in the paper. TES also shows compatibility with other projects, including ATNSI and ProATN. The TES software has been supplied to several Eurocontrol Member States to assist in their ATN evaluation and trials activities. Future evolution of TES has now been phased out, as the transition to ProATN deployment takes place. It is now in the maintenance phase, and will continue to be supported, and to be used for airborne flight trials into the foreseeable future.

5.17 MA thanked DVR for the reports, and said that the work had been very useful, particularly in the early validation of the SARPs, and he was glad that it could still be used for current work.

WP 19 - The European Link 2000+ Programme

5.18 DVR presented this paper, based on a slide presentation given previously in Eurocontrol. The Eurocontrol ATM2000+ strategy has identified the introduction of data link services and the supporting communications infrastructure as a key enabler for the necessary evolution of ATM in Europe to increase capacity and improve levels of safety. There was now a clear opportunity to implement seamless and consistent mobile data link services, supported by a mobile communications infrastructure in the European region in close co-ordination with the USA, which has decided to deploy ATN-based data link services for their en-route centres from 2002 on. Eurocontrol will establish a drafting group to define a programme (Link 2000+) which will contain the necessary elements for the stakeholders concerned to commit to the programme in well defined and affordable steps. Programme definition will start in early 1999.

5.19 DVR identified several key strategies in the programme. These included basing the work on ADSP and ODIAC operational requirements, the need to migrate from ACARS to ATN AOC work and the commitment to the PETAL IIE programme with American Airlines. Operational systems are to be built, in the context of the Link 2000+ programme transition from validation to trials to operational systems. Full definition and justification of the programme is going ahead, anticipating formal full approval and commitment for end of 1999. The programme runs through to 2007 and beyond, will incorporate both ATS and AOC and is expected to cover the core area of Europe. It was essential for the wider benefits that the programme remained co-ordinated with the US work.

5.20 GS noted that RTCA was one of the involved organisations and he asked what the RTCA output would be. DVR said that they would be responsible for documentation containing all interoperability requirements based on input from implementers and users pertaining to avionics and ground equipment – he guessed it would almost amount to a MOPS. SVT said that RTCA had created a new committee (SC 194?) responsible for consolidating all domains - not just en-route, but terminal and oceanic as well.

5.21 MA said he would like similar paper showing US co-ordination for the next meeting. SVT said that it might be possible to make information available to this meeting some time later. (See IP 07)

WP 20 - PETAL- II End-End Trials Specification V2.6

5.22 DVR reported that this paper was a result of an action place on him at the last meeting to make these specifications available if possible. They were now available on the PETAL II web site at http://www.eurocontrol.be/projects/eatchip/petal2 where the information could be obtained in soft copy. Soft copy was also available at this meeting on the archive server, and on the CENA server. MA thanked DVR for his actions.

WP 22 - Implementation of an experimental NOTAM Service as a new Air-Ground FIS

5.23 This paper was presented by Francesco Cecere (FC), and will also be presented to the ADSP WB B meeting in February. SICTA (the Italian research centre in ATC) had implemented an experimental FIS/NOTAM air-ground data link application, global in coverage and ICAO compliant. The services provided included NOTAMs on request and a PIB (Pre-flight information bulletin), now rename as Route Bulletin (RB) because the service can be provided en-route. The pilot can request multiple reports, which will be made available using the update FIS contract mode, or a new, yet to be defined 'multi-report demand' contract mode, that would act like the update contract mode with the only difference that timeouts between reports would be handled. The original programme used a VDL Mode 1 combination, but this has now been extended to introduce ATN DFIS. FP asked why contract mode rather than demand. FC replied that one needed a contract mode since the number of reports was not known – a demand would get you only one and you needed them. Also you never know how long the reply message would be.

WP23 - Italy Experience on AIS Automation

5.24 FC said that this paper just presented the present operational AIS Automated System (AISAS) in more detail, together with the previous experience of an experimental mobile NOTAM service using VDL Mode 1 data link. PC asked if the VDL mode 1 was being used in the trials, and if it was then an ACARS implementation. FC confirmed that VDL Mode 1 was being used for experiments outside the ATN, but that it was being used as an ICAO standardised VDL application. PC wanted to know if there was any information on transit delay statistics - FC confirmed that these were available, but not here; the focus of this work had not been the VDL performance, but rather the integrating of a NOTAM FIS ATN framework.

IP 06 – Japanese ATN Development and Implementation Plan

5.25 Ken Itano presented this paper, which reviewed the ATN work going ahead in Japan. Japan plans to carry out full scale ATN implementation starting in 2005. In preparation for this, much work is going ahead at the Ministry of Transport's Electronic Navigation Research Institute (ENRI). This paper introduced the ATN

development and implementation plans, the EAST (ENRI ATN Simulation Testbed) programme, the joint Eurocontrol interconnection trials and the results of router connection trials. The first connections were carried out with Eurocontrol in December 1998, and all experiments were completed satisfactorily. MA asked if the trials used the Eurocontrol software, but KI emphasised that all the software had been developed in Japan. DVR said that the Eurocontol element of the trials had been carried out at Bretigny. PH noted that the Japanese would have CPDLC up and running by 2005 – this was encouraging. He asked if it meant that he could have aircraft fitted and benefiting from an operational service by then. KI said that, like all dates, this was when they hoped to be able to plan to operate - details for operations were not yet fixed. DVR said that Japan would be continuing trials with Eurocontrol, and were looking at the next step, which was interoperability with CPDLC. Teams are exchanging generic PICS, with testing being carried out in the Q4/99.

IP 07 – FAA CPDLC Presentation

5.26 SVT reported on the FAA work in response to a request from MA. This was a slide presentation that had been given by the FAA earlier. SVT gave history up to the present day, which included ATN applications in-line with PETAL II. A detailed schedule was presented as well for each of the different CPDLC builds, up to Build III. It was also shown how ATN fitted into the overall NAS concept. Build II will be the point where Oceanic and Domestic program offices merged for the US. The FAA now has fully funded, nationally deployed ATN data link, and believes risks can be overcome in the schedules defined.

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

WP16 - SME 2 Status report

5.27 FP reviewed the outcome of the CCB presentation he had made the previous day. There had been a rush of PDRs, largely from ATNSI work, at the beginning of December, too late for consideration at the last SG2 meeting. He expected that there would be an ad-hoc meeting of SG2 to discuss these, with the objective of clearing them at the second part of the CCB meeting on 21 January. As SVT had reported earlier, the main outstanding PDR (98100001) related to the compatibility between Doc 4444 and Doc 9705, particularly concerning the message tables in CPDLC. Alignment of Doc 9705 to Doc 4444 resulted in 25 changes to chapter 4, mostly changes to attributes in ASN.1 comments; this did not impact interoperability, nor affect bits on the line. In addition there were changes to chapter 7, and 69 differences in the message intents

5.28 FP had consulted widely, and had prepared a PDR with two choices – basically align and retain the tables, or remove the tables from Doc 9705, and rely on inter ICAO notification when there were changes to DOC 4444. FP said that the CCB preferred to keep the tables in chapter 7 – the members felt that they could not rely on maintenance of another document. They would prefer a consistent self contained single volume. The SG2 in Albuquerque had very reluctantly proposed that the Tables be removed from Doc 9705. But the CCB had agreed that they needed WG consensus on a final decision. MA said that to retain consistency between Doc 9705 Chapter 7 and Doc 4444 we would have to track changes anyway.

5.29 SVT said that the first question must be the retention of alignment and how do we track changes. As a certification authority, he would ask for implementations to be based on certain editions of documents, but if the edition changed, this would not generally affect the certification. JYP said this was trying to solve a permanent problem; maintenance will always be a problem between 2 documents, particularly if we have a precedence indication. In that case any implementers would always have to go by Doc 4444, regardless of what was in Doc 9705.

5.30 TK was fully in agreement with the CCB in that we should retain the tables and remove the precedence note. JYP would like to keep note on precedence. SVT said that at one stage the tables were the same – the precedence note was superfluous at that time and should have been deleted. JH said that whatever the choice, there would still be a maintenance function for editors. She thought that implementers preferred one basic document for reference. SVT pointed out that it would be up to the CCB and its officers to track changes anyway

5.31 MA strongly feels this is an issue of lack of document control; industry demands close document controls which ICAO does not provide. Much of the work in cross checking could have been avoided if ICAO had had one data base, and significant elements had been store on this, applicable to documents throughout the organisation. However, this was not the case, and we should not have to continue to rectify inconsistencies generated elsewhere.

5.32 Reflecting his perceived outcome of the discussion, MA therefore proposed that the tables should be retained in Doc 9705, and that the PDR should reflect this. Further changes would be the subject of other PDRs. The precedence note would be removed – FP would generate the appropriate addition to the PDR. This was unanimously agreed by the Working Group.

5.33 FP noted that there were some inconsistencies in the referencing of the ISO documents in SV 1. JM agreed to clean these up.

[Secretarial Note: JM has completed this action, and prepared a Flimsy for the second part of the CCB meeting.]

5.34 FP continued his overview of the other PDRs. He had instigated a new PDR which would allow editorial changes to be included right up to the implementation of the amendment – this would mean that there was no need to generate a separate PDR for each set of editorials. He also presented the new PDRs in outline – these would be discussed by SG 2 later.

IP 02 – Proposed Change Pages for ICAO Doc 9705 Amendment 1 – SV2 (Soft Copy only)

5.35 FP noted that several PDRs have been raised since the publication of Doc 9705 in August 1998. Change pages resulting from resolved PDRs are available in soft copy – this is effectively a living document ATNP SV2 archive.

IP 03 – CPDLC Messages

5.36 PC had prepared this IP as part of the case for retention of the message tables in Doc 9705. The desired results had been achieved.

Agenda Item 4.4 - Post Package 1 Work

WP 25 – CM Server Service in Package 2

5.37 GS, in presenting this paper, noted that as a result of trials and implementations, there was an identifiable operational need to request information from multiple addresses. The CM server Logon changes, which he had proposed as an enhancement to the current CM procedures, would be able to explicitly request four addresses. However, there would be no version negotiation – this would have been done during an earlier simple basic logon. He was therefore querying whether this could truly be called a Logon, or whether it should be renamed. There were extensive changes to almost all parts of the SARPs, but the ASN.1 could be modified through the use of extensibility markers, resulting in backward compatibility. However, a regular logon would always have to be done first to prevent a Package 2 air user trying to talk to a Package 1 ground system.

5.38 This work had not yet been discussed in detail by SG2, but was being presented here as a result of an action arising from the Bordeaux meeting, to give an indication of CM future development.

WP26 - CM Package 2 Backwards Compatibility Enhancements

5.39 Any future CM version change would currently allow the ground, but not the air-user to be backward compatible. At the Bordeaux meeting, GS had proposed new state, “degraded”, to be entered into by the CM-air-ASE for dealing with version number incompatibility. This would allow backward compatibility of a sort which is currently not available to the air user. In addition, checks would have to be built in against using service not available in degraded mode.

5.40 This paper had been reviewed in a previous version by SG2, but further work was required. Presentation of this paper was by way of being a progress report on the work being done.

WP27 - Commentary on Data Link Server Presented at Bordeaux by Eurocontrol

5.41 The Eurocontrol paper had indicated that, where CPDLC and Downstream Clearance to a server were concerned, the SARPs as currently written constrained a server implementation. This was not the case, and GS explained why in this short paper. Methods were given which would allow the current SARPs to be used in a server environment, although care would have to be taken that integrity was not compromised. GS pointed out that this was a data link server, not a CM server, and so was different to the concepts given in WP25 and WP26.

5.42 DVR thanked GS for his analysis, and was pleased to see that the SARPs could be used in server mode. He asked if there had actually been an identifiable user operational requirement for this capability. GS confirmed that there were user requirements – for example an aircraft may have to be logged on to different sources of information, such as FIS which may come from a different source than, say, downstream CPDLC and local CPDLC.

5.43 TK asked what was going to be done with papers such as those of GS - would they go forward as change pages for ATNP/3, and who would carry out the validation. GS agreed that validation was certainly needed. MA looked to the WG to tacitly support these papers and the work they indicated. Even if there were no more than a paper validation by the time of ATNP/3, there would be an indication of future work

5.44 PC asked if the enhancement were backwards compatible, and GS confirmed that they were. PC thought that these were new services, and if implemented, then the version numbers ought to be changed. PC also wanted a definition of Package 2, versus the Doc 9705 amendment 1. GS had indicated a version number change in his red -line version number, although it was rather discretely concealed in the middle of the paper. TK wanted to know where it was – GS pointed it out in page 2 of WP 25 redlines, paragraph 2.1.2.1.1. TK observed that this was a minor change with profound consequences. MA did not have a definition of Package 2 – SG 2 was doing Package 2 work, but we did not have a written definition. SVT had a picture of what was in Package 2 for each application; for example SV4 Package 2 would include security, connectionless protocols, naming enhancements and the Eurocontrol generic ATN communications service. There was a definition – he would produce a short paper for the next meeting.

5.45 SVT said that fixes are all that is allowed to Doc 9705 through the CCB – all care has been taken not to bring in new functionalities. Nevertheless GS was quite correct to prepare his papers as if they were enhancements to 9705. PC seems satisfied with SVT's answers.

WP28 - Update on AEEC Activities

5.46 GS explained that the Airline Electronics Engineering Committee – AEEC - was currently developing specifications for the implementation of the ATN. There will be two documents that will be prepared initially: AEEC Specification 637A covering data Link Internetworking Services, and 638A, covering Data Link Applications. The former will cover the implementation of the Internet SARPs, while the latter will cover implementation of upper layers and applications. These documents will not be a copy of SARPs, but will use the Guidance Material to explain the operation of the SARPs, referencing SARPs directly where applicable, and will also include requirements that go beyond SARPs. For 638A, and specifically for CM, the requirements will include how the initial CM address is input, the storage requirements of application information on an aircraft, aircrew interactions etc. 638A in planned to be completed in September, to the level of a final working draft.

5.47 The most significant issue to surface during the preparation of these documents relates to the role and relationship between documents produced by the ATN Panel, AEEC and RTCA. The AEEC produced very detailed documents relating to avionics implementation, and RTCA produced MOPS – there had to be some means of ensuring that these documents were consistent where they dealt with common topics. MA considered this a somewhat worrying paper, since it indicated that several standards were being developed. He accepted that there needed to be something beyond SARPs for detailed implementation, but he still felt that SARPs

should be seen as the base document. GS agreed, but wanted to make sure that any interpretation was SARPs compatible. GS pointed out that the FAA certificate to MOPS, and not to AEEC standards – this was confirmed by SVT.

5.48 SVT said that the FAA was bound by USA public law, and can be, and has been, sued if it appears to favour companies by procedures that are not completely open. RTCA is a public rule making committee for the FAA; it can't have committee without a FAA representative, as a tacit witness of FAA monitoring. Every RTCA document has a caveat, drawing attention to FAA responsibility. But AEEC is an industry group, set up between airlines and their avionics vendors, and any committee work is done under airline and vendor control. FAA does not in theory legally recognise grey cover documents. FAA has a legal relationship with RTCA, but not with AEEC.

5.49 PC, commenting on AEEC current work on the ATN service, said the main goal was to satisfy airlines, and this meant how to accommodate AOC over the ATN stack. But AOC was character based, and thus AEEC must define convergence functions. PC although thought that the FAA was guilty of double standards, since the FANS-1/A system standard work relied on both RTCA and AEEC documents. SVT agreed, but said that the point to remember about this was that it demonstrated much work remained above and beyond 622 and 623. This has resulted in a whole raft of RTCA work being required to converge divergent implementations.

5.50 MA said that the current draft of 638A was on the archive for members, at 317k zipped. He thanked GS for the paper, and was grateful that he had highlighted potential traps for interoperability, which would have to be taken into account at implementation level.

WP29 – Use of X.500 Protocols in ATM Data Link Technology: ATN Directory Approach

5.51 GS introduced this paper. There is a need for an application information data base, which can be used in the ATN both to support address dissemination and security. A centralised data base would be too complex, and a distributed data base would provide the flexibility of operation required. The CCITT X.500 series of documents are a published and widely recognised set of appropriate specifications. This paper shows how the X.500 directory can be applied to the ATN, but it should not be considered as a X.500 schema. This was essentially a ground-based directory – the aircraft would not have X.500 software on board, but still should have access to the information in the data base. In addition, this paper does not include any reference to X.509 security information – this would have to be added. Nevertheless this paper outlines an approach to the development of SV 7 – an X.500 directory.

5.52 JYP thanked GS for the preparation of this paper. For some time SG 1 had required a directory document, and now they have one, for which he was grateful. However, JM had presented an outline document earlier, and what was the relationship between the two documents. GS said that this document did not contradict the JM document – rather there would be a merging of information. Ultimately a schema would be a merging of both papers. TK thought that the title was misleading – this was not truly a protocol model, but more an information model. There was a question of whether this would actually need the implementation of X.500 protocols at all, or could a State ignore this and store the information locally. He questioned what was the level of SARPs required.

5.53 GS expected that this would use standard x.500 protocols. He had assumed this would be the case, but hadn't stressed it in the paper – he would do so in the revised subsequent version of document. SVT agreed with TK; the security specification required X.509 certificates – traditionally this has required the availability of X.500, but he accepted that this was not actually essential. MA was worried that the directory will not make ATNP/3 and security may be wedded to it. Did we in fact have to keep them together?

5.54 JYP agreed that production of the directory was not a minor task. WG3 SG3 was responsible for SV7, but he was not happy about the size and of the task and the volume of effort available. He asked SVT if \it was possible for SVT to give an idea of the structure of SV 7 by the next meeting. In addition, could he provide information as to what parts may be considered mature – GS had provided ASN.1 in support of the directory, so some element should be considered firm. SVT recognised the time and effort criticality of the SV7 development, and was willing to devote the whole of the next SG3 meeting to its development.

5.55 JMV wished to emphasise most strongly the need for a directory by ATNP/3. Package 2 developments will include systems management, security, and, in ground/ground, the extended ATS message service. All of these rely on a directory service. If this was not ready, the whole reason for having an ATNP/3 could be jeopardised. He would rather see ATNP/3 postponed, than arrive there without a directory. SVT appreciated this, and would show up in Naples with more than just a skeleton of SV7.

5.56 TK sought to draw a distinction between the Directory Schema, and Directory Protocols. He would expect the schema to be finished by ATNP/3 – the combination of GS's current and JM's earlier work should allow that – but he saw no work going on the protocols anywhere. He had another question – were we going to make it mandatory that States would have to implement the X.500 protocols if they wished to implement security – for example to support key distribution? We should define what information is going to be needed in the directory. DVR asked what was the operational need for the directory – was there an operational need for an exchange of directory information in a standard way. He thought the definition of a 'technical' operational requirement was a WG1 responsibility, but we had not had any indication from them.

5.57 SVT said that there were two points, which should allay TK's concerns - ITU-T has issued a profile for use of the directory over TCP/IP. It would be possible to write this to run over the ULA, this but would require work. In addition, he knew of at least one running directory implementation, at MITRE. TK said again that SV 7 would only contain the schema, and not the profiles for the protocols. He thought that we were lacking a concept of a unified directory system, and this should be investigated.

5.58 JYP pointed out that the meeting seemed to agree that the presentation of the directory to ATNP/3 was important – he proposed that SG3 should address the topic with the highest priority. He did not want all the effort on Enhanced AMHS lost at the panel meeting because of dependence on a non-existent X.500 directory. JMV said that although we needed the directory for the storage of information, we needed a protocol of some sort to allow retrieval of the information. JYP was firmly of then opinion that WG3 should present a directory to the Panel. He did not see any problem with air/ground or AIDC, but if we were not in a position to present the directory, we should, as a last resort, consider submitting a separate AMHS.

5.59 MA would like to see the overall requirements from all groups in place in order to produce a proper SV7 for presentation by ATNP/3 – he would be most reluctant to sanction a separate AMHS. JYP agreed with MA, but the ideas coming from brainstorming are presented only in a situation of last resort, and JY wanted to make sure this situation did not occur.

5.60 MA thought that we had discussed as much as we can at present in this meeting. He welcomed all the points, and thanked GS for the presentation of his paper. The actions resulting from the discussion were that SG3 should prepare a significant draft (more than just a skeleton) of SV7 for the next meeting, and for TK to look at some of the protocol issues that were raised as opposed to only schema point of view. Also, JMV and JYP should investigate and confirm through presentation of a paper that they do not have any need for the X.500 protocol at this stage for ATNP/3 but require directory schema alone. JMV said that, at first glance, it seemed to be the case, but would be further analysed for the next meeting. JYP promised that, when this paper was available, it would be passed to SVT for comment before official submission.

WP 30 – Current Status of the SARPs Development for the METAR Service

5.61 FP presented this paper which gave the current status of the METAR service work. The METAR service could be included quite easily in D-FIS by modifying the ASN.1 and keeping the FIS protocol as it was today. During his work on the subject, FP had detected a number of areas in the ADSP manual where the operational requirements for the METAR service were described that were then seen to need more discussion. A paper containing questions arising had been submitted to ADSP in Madrid, and this paper gave the answers provided. The conclusion was that METAR is acceptable as a functional subset of the current FIS application. However, more information is needed in the definition of the range and resolution.

5.62 MA said we definitely needed to make sure information received from the ICAO METLINK study group was stable; he had spoken with Ollie Turpinnen, the ICAO secretary of the METLINK study group, and he will be

providing the information as a response at the next ADS meeting in Adelaide. FP said that if the responses were satisfactory, he would be able to produce a METAR service description in Naples.

WP 31 – Proposed Modifications to CNS/ATM-1 Applications to support Package 2 Security Services

5.63 FP provided this paper as an indication of work in progress related to security in the Applications. The operational requirements for ADS and CPDLC identify the need for security measures to be taken with respect to information flowing between end systems. The ATN security architecture provided two main security services giving efficient countermeasures to identified threats, namely peer entity strong authentication and data integrity checking. This architecture is a public key cryptosystem based on the use of a pair of keys – one public, one private – by each of the Application Entities. CM is used to exchange the public key, and therefore the applications will be able to check the digital signature. The AE and security ASO functions were described. There is no impact on the dialogue service for this implementation; however it will require the addition of the Security Requirements parameter. Security will be provided to the applications in exactly the same way as QoS is – on a best effort basis. Therefore there is a need for the application users to determine whether or not to continue the dialogue, having been made aware of a security failure.

5.64 GS asked whether the security parameter worked in the same way as QoS, i.e. if QoS fails it was indicated to the user. FP said that in the event of a security failure in the dialogue, the end users would not be informed via the dialogue service itself. There would be a link to the systems management, which would take appropriate action. SVT appreciated the paper, and has talked to the systems management group and they were willing to provide whatever security needs were required in the systems management application.

5.65 PC said that, to avoid situations similar to the CM issues where there were no procedures to acquire the initial address, he would like the group to think about the details of the security functions. Also, there was the mention earlier that a directory service is mandatory for the security function. Would the aircraft get the CM address to initiate the logon from that directory? Also he did not understand fully the procedure related to retrieving the public key of the aircraft. He believed we should first look at the way the system would correlate the system identity with the aircraft (e.g. Flight Plan) and only then could the system retrieve the public key. Before the system can get the public key, he should first authenticate himself to the directory.

5.66 MA thought this sounded like a catch-22 situation; i.e. one cannot authenticate the aircraft without the key and one cannot get the key without authentication. FP said that the Ground user had two things to do - firstly identify the aircraft by existing information in logon request (e.g. flight id, departure airport) and secondly with this information be able to access the public key of the aircraft. He agreed with PC that public key infrastructure would need to be addressed by the working group. As for the use of the directory, it does not explicitly imply that this directory is X.500; it could be a data base, local means, etc. X.500 is only one alternative. PC thought that if we need to identify the aircraft first, we needed to ensure that the aircraft was the proper one to request the contact. MA said that if there was a misidentification of the aircraft, a dialogue would not be able to be set up. FP agreed, but noted that this was not a new problem, and the security subgroup is looking into this on an on-going basis.

5.67 GM-B said that the key management problem is still not completely solved. The way the keys get renewed or are managed is yet to be decided. But he agreed with MA in that if you don't have the proper ACID, then it won't have the right private key so it won't be able to be authenticated. However, it can still establish a dialogue, but there is a higher probability that it might not be the right aircraft. TK said we should note that this is one of the high risk efforts of Package 2 that may not being completed in time for ATNP/3 despite the best efforts of the SG3. WG1 SG2 needs to come to a satisfactory conclusion concerning the key infrastructure by next week, or there will be a very high risk of not finishing the security for ATNP/3. MA noted that the question of key management was really the main issue that needed to be solved at a practical level in order to make the whole system work.

5.68 Saleh al-Ghamdi thought that security was a very important issue. He wanted to know if the incorporation of security would affect any of the operational parameters such as transit delay. FP replied that there will be an effect on the overhead of establishment of dialogues, and the size of the messages will increase, but by how much is up in the air because it depends on the size of the security information to be sent.

So transit delay may occur. Also, there may be a delay from the retrieval from a directory of security information, so that would need to be taken into account. MA thought that this would all occur at the initial set up, on a once and for all exercise at the start of a dialogue. FP agreed that would probably be the case, but the user may request that security be performed on each data sent, so that will affect the total operation.

5.69 Saleh was concerned that even if we lose security, the dialogue would carry on. What would happen if we missed critical messages? Security should not have any adverse affect on these critical messages. Part of the risk analysis should include the performance analysis to see how security will affect the delays. GS said that until we knew the size of the security information that has to be passed, so we could not really do that study yet. PC didn't see the need for continued security after initial authentication – MA personally agreed, but accepted that there was a valid option if someone chose to use it. FP emphasised that authentication was only done at dialogue establishment. However, during dialogue transfer, the integrity of the information can be checked by digital signature. But a new authentication during data transfer is not performed. MA said that this should help to keep the overhead low once the dialogue has been established. He thanked FP for the papers, noting yet again that the pressure was on the appropriate subgroups to come up with the necessary information.

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 Bordeaux, and outside the meeting he had tried to address and solve the subjects relevant to co-ordination with other subgroups. Work progress included maintenance of the SARPs, but no questions were raised since there weren't any PDRs on AIDC or AMHS. There was discussion on receive notifications and distribution lists. On the present AFTN, there were messages in Annex 10 which made use of receive notification (SS priority messages). The receiver of such a message must send an acknowledgement to the originator of this message. Further, the AMHS makes use of X.400 standard, which makes use of distribution lists. If you make use of distribution lists, however, any receive notifications will not be sent. So the question that is being worked on by SG1 was whether or not we could use distribution lists for emergency messages. There needed to be an analysis in existing AFTN centres to see if there was currently use of distribution lists for distress messages. JYP had got in touch with operational people to discuss this, and certainly in France he was told that from an operational point of view it made no sense to use distribution lists with a distress message. This meant that there would be no problem for SG1 if this view was generally accepted. Therefore, a recommendation would be proposed to say that distribution lists should not be used for distress messages.

6.2 JYP then went on to discuss the extended AMHS service. A key problem was to ensure backwards compatibility with package 1. The SG concluded that there were no problems with the approach, which was to combine the directory with Business Class extensions, where the directory would be used as the repository of which version is supported by a given AMHS user. Another subject that was addressed was system management, both the managed objects and the CONOPS. SG1's role in this domain was considered, and it was determined that there needs to be a continued participation in this area. Comments on the system management will be presented to the appropriate subgroups. In terms of security, an analysis of the threats has been made and been reported. Based on these threats, countermeasures were developed, and what security classes could be used was identified. The conclusion of the group was that for the ground-ground data exchange the class used would be S0. S2 had been rejected, since it is deemed as overkill in expense and capability. S1 is also overspecified, and there could be some compatibility issues if S1 was chosen. Hence the S0 choice. All of this has been presented to WG1/SG2 by JMV, and the response of WG1/SG2 was enthusiastic.

6.3 There is also the need to look at CIDIN gateways. The first specification was started, and the planning of the creation of the specification will be discussed next week. It is intended to give the CIDIN gateway specification first to WG3 for comments. It should be noted that it is the clear intention of SG1 to have this material ready for ATNP/3. JYP mentioned a difficulty on this subject. The discussion at ATNP/2 with the Russian Federation revolved around needing input from the Russian Federation for the development of CIDIN

information. This would hopefully prevent excessive discussion at ATNP/3, since all issues could have been resolved before then. However, JYP had not been able to get in touch with the Russian Federation – he would like MA to pass this on to Masoud Paydar, in that he may be able to contact the Russian Federation in order to make the discussions in Montreal more helpful.

6.4 SG 1 had also been concerned about the directory specification. It was critical to the Extended AMHS, and needed to be specified. Another issue was the specification of the GACS; many of the SG1 experts felt they were not able to review it properly during the meeting. JYP's impression of GACS was that it was for AOC applications. SG1 members were surprised to see many messages that deal with AMHS, and the conclusion of the group was that JYP should get in touch with DVR for further explanation. There was a useful discussion, and it appears that there was a misunderstanding between GACS and AMHS. JYP proposed to meet after the main meeting to iron out the understanding of the relationships between GACS and AMHS.

6.5 The next SG1 meeting will be held 25/1 to 27/1 in Honolulu. Referring to the paper presented in Langen, the work program progress was brought up to date. It is felt that the extended AMHS will be ready by ATNP/3. System management work will continue, with contributions to the appropriate subgroup. The directory service analysis will be completed for the next WG3 meeting in May. It is hoped that the CIDIN/AFTN gateway next draft will be presented at the next WG3 meeting as well. Therefore, it seems reasonable to say that the work program will be completed in time for ATNP/3.

6.6 MA thanked JYP for the presentation. He thought it seemed that SG 1 was asking for approval on the security side for the choosing of S0 security level. JYP agreed, noting that there was a detailed WP on the subject, which will be presented later that will explain the technical details, so the discussion would pick up then.

Agenda Item 5.2 – Review Trials and Implementation Activities

IP 05 – Inventory of Current AMHS related activities

6.7 JYP presented this paper. In the meeting at Utrecht, JYP introduced an outline of the SPACE program (planning and study of AMHS in Europe). This study is aimed at the developing the master plan for deploying AMHS in Europe. AMHS will remove many of the current AFTN limits, and the question that results is how will this then be implemented over Europe. Therefore this WP make a query for information that needs to be gathered (and the parties to be gathered from) in order to progress on the implementation plan for AMHS. One point that was made was that AOC needs to be accommodated (e.g. IATA) since AMHS profiles will be published. In addition, all of the implementations will still need to be interoperable (e.g. civil to defence). Note that this document was approved in Nov 98, and the partners do not have any intention to update the document—it is snapshot at that point in time (for example, Airservices has moved ahead in its plans to acquire an AFTN-AMSH gateway). JYP then briefly went over the various states of implementations along with their intended direction. In conclusion, this document has been completed and approved by the project management board, and the future will include more work packages, including an inventory of potential AMHS users.

6.8 Looking briefly at timescales, JYP said that Eurocontrol will mandate AMHS in all 36(+) States for 2005. Claude Leclerc said that this was the date approved by the European States themselves. At this point AFTN will start to be phased out. The goal of the SPACE programme was to advance implementation times

IP 04 – Current Status of AMHS Implementation Activities between US and Japan

6.9 Naoto Sakaue presented IP4. JCAB is working on implementation of AMHS, and plan to have it by 2000. The technical specifications have been agreed, and the AFTN/AMHS gateway will be implemented using BIS ATN routers, which are compliant with Doc 9705. The JCAB has chosen the gateway because of the transition benefits. The system configuration was displayed. JCAB has specified the system design and the contract has been awarded. Development and installation will be completed by 4Q99, and connection tests with US by March 2000. AMHS service will start in October 2000. There are still some operational rules that need to be defined. Final shifting from AFTN to AMHS is planned for 2005. Co-ordination work with states will be started in February 1999.

6.10 JMc said that the co-operation and association with Japan has resulted in an excellent working relationship, with many valuable outputs. JYP commented that nobody believed the objective would be reached at the outset. "The problem for a lot of people is that the SARPs were completed in time." To hear experts report commitment to dates and see planning information is a very positive point for our job, and it is hoped that ICAO (read: Masoud) takes note of this. JMc added that the AFTN-ATN transition meeting would take place next month in Canberra. This should result in more commitment to unified goals, so these trends in AMHS that have been reported should continue.

IP 01 – European Flight Data Exchange Validation Programme

6.11 CL presented IP1, which was a brief report on a validation program at Eurocontrol in relation to AIDC. The idea was to verify whether the state machine from OLDI could be ported over various protocol levels (in particular, the FDE ICD). This would help Eurocontrol states commit to AIDC implementation and transition, e.g. what does a state do with its OLDI stuff when the ATN comes? The major constraint was to try not to change the OLDI application and make maximum use of COTS. A prototype was produced, and it was found that the FDE ICD could be supported either by TP4 or TCP. It also demonstrated the feasibility and co-existence of three underlying protocol stacks (X.25, TP4, and TCP). Also, current applications will be able to be used over these different protocols - a major benefit. However, there were issues with the co-existence of multiple transport protocols as well as the absence of a proper address encoding scheme between the transport protocols. It was also noted that no performance issues were investigated. This prototype will be demonstrated in Brussels to a number of European states.

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

WP 36 – SME 3 CCB Report

6.12 JMV presented the SME 3 report. Since there were no PDRs, there was not a lot of CCB activity. One change for AMHS was the inclusion of Y2K dependency, the wording of which was lifted from the proper ISO documentation. For AIDC, the activity was a PDR that has been withdrawn.

Agenda item 5.4 – Post Package 1 Work

WP 38 – AMHS Security Operations Using Security Class S0

6.13 JYP had alluded to this paper in his presentation of the report of SG1 above. JMV, introducing the paper, said that it was an expansion of a paper presented at Bordeaux, which discussed the selection of S0 for the security level. This paper was also discussed by the security subgroup in Bordeaux, and further discussed in the Phoenix security subgroup. This approach has subsequently been endorsed by the security subgroup since 1) there were no comments by the SG, and 2) compatibility was ensured by the approach. If additional requirements (say for a more secure way of working with AMHS) surfaced, then these requirements would be re-analysed and the decision reconsidered. However, if this decision had to be reconsidered, it should be borne in mind that there were deadlines if this material was to be presented at ANTP/3. The security concept makes use of a Public Key Infrastructure (PKI), which included the need to use something like X.500 for support. S0 met the requirements for the perceived threats, fitted within the ATN security concept, was backwards compatible, and therefore, was being submitted to WG3 for final endorsement.

6.14 PC asked whether there were high-level requirements to provide strong security mechanisms to meet authentication. JYP pointed out that what was proposed here was a strict minimum; if we didn't do that there was no security. The security problem for ground-ground was very different than for air-ground, and we didn't need the same protection. MA explained that all the ADSP had dictated was that end users must be positively identified to each other. A comprehensive paper on message encryption was presented by IV and DF a few years ago, and it was the overheads of these methods that resulted in the authentication methods used by the ATNP today. Therefore, there aren't specific ADSP requirements for strong authentication. PC felt that this security concept would add significant complexity to the avionics, and would introduce many problems, such as key distribution. He wanted a statement included to indicate that the ATNP view was that that cryptosystem based methods were the only way to perform this level of authentication. MA said that this was not the case –

this was only one way that security could be carried out, and it was the way that the ATNP had chosen. Also, the S0 is the least cost solution that meets the requirements.

6.15 PC, as a member of WG 3 wanted to propose a password-only mechanism to meet the ADSP requirements, and invited dissenters to disprove it. Also, a dialogue service already provided this mechanism. MA said that it was too late to accept such a proposal. Security had been being considered at least since Ian Valentine and Dirk Fieldhouse had submitted an over all view of security ramifications at a meeting in Toulouse about four years ago. The use of passwords had been analysed in that paper, and the concept had been rejected then because it did not significantly improve the security. JYP felt that this discussion has gone beyond ground-ground and into global security for ATN. He accepted this, but thoughts that discussion on the WP at hand should be closed before further security discussions were entertained. TK agreed with J-Y about getting off subject. He pointed out that the Dialogue Service provided the security requirements parameter, which could be used for a password, although currently it is planned to be used for security for integrity.

6.16 MA, canvassing the opinions of the members, accepted that the working group generally approved the level of security proposed by JMV in his paper.

7. AGENDA ITEM 6 – UPPER LAYER COMMUNICATIONS SERVICE

Agenda Item 6.1 – Subgroup 3 Report

WP 07 – Report of WG3 SG3 (Upper Layers Architecture)

7.1 SVT briefed the meeting on the current work of SG3. Security has really passed the draft form and is much more being actioned at SARPs level. The naming and address has been done for Honolulu, as has connectionless dialogue and the GACS (e.g. they are draft SARPs). The ASO-ACSE guidance material and the X.500 schema will be done for the next WG3 meeting in Naples. SVT noted that validation was an issue, and validators should step forward and be identified for secure dialogue service, connectionless dialogue and GACS. (TK noted that Eurocontrol will validate naming, connectionless and GACS.) The three major SG 3 issues are responsibility for the X.500 directory, key distribution (X.509 certificates), and the use of system management by security. The next meeting will be held during the third week of April in San Francisco.

Agenda Item 6.2 – Review Trials and Implementation Activities

7.2 There were no papers for this Agenda Item.

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

WP 09 – SME 4 (ATN Upper Layers) Status Report

7.3 TK reported that since the Bordeaux meeting there have been four PDR submitted. Two of these – 98100010 and 980900007 – are new AE-qualifier addresses for new applications, SV 4 being the register for these addresses. There were two open PDRs as of the SG3 meeting in Toulouse last week. One had to do with inhibiting issuing a D-END while in the END state, the other with inconsistencies within a table. These have been resolved by the CCB at its current meeting. In addition, there was a late-breaking PDR concerning the re-use of Transport connections. This was proposed to be rejected by the SG, but the originator of the PDR did not agree with this, and it would be revisited at the second session of the CCB, to be held on 21/1/99.

Agenda Item 6.4 – Post Package 1 Work

WP 10 – ATN Upper Layer Naming and Addressing – Change Pages and Examples

7.4 TK said that this paper expanded on his paper to the Bordeaux meeting which will allow multiple application invocations of the same type (e.g. system management) to be explicitly addressed. These changes have been reviewed in detail, and TK expressed his thanks in particular to FP for his work in this area. The changes proposed to the naming tree would require a change to CM, albeit only a name change (AEQualifier to

App-Type – FP volunteered to make these changes). These changes would also be backwards compatible. Example scenarios were also given. Eurocontrol has a program in place to validate these changes being made, and expect to be done in time for ATNP/3. Therefore the group was invited to note and endorse these modifications for inclusion for ATNP/3.

7.5 JYP asked, bearing in mind the timescales, would the validation reported on by TK be presented prior to ATNP/3. DVR said that as in the past, the validation report would be presented first to the SG, then to the WG, and finally to ATNP/3. He said that presentations to all of the relevant working groups and subgroups should be completed by the September WG3 meeting at the latest. PC had a minor comment on paragraph 3.2 of the paper. He suggested that AOC applications would also need to make use of the new naming scheme, and that the IATA branch of the naming tree should (and will, as confirmed by PH) be modified in the same way. Since this is not under the remit of the ATN working group per se, it will not be reflected in the SARPs; however, IATA will have these same capabilities for airline applications.

WP 11 – Sub-Volume 6 of the ATNP Manual

7.6 TK presented this new, slimmed down version of SV6. Since this topic was no longer discussed within SG3 (work on this had been re-assigned to the Joint SG on System Management), this paper is for information only, and has not been approved by the JSG (it is the input to its meeting next week). The document has slimmed down since its first presentation at Utrecht, since detailed management information has been moved into Guidance Material. Also, the last edition of SV 6 contained Guidance Material anyway, and that has also been split from SV6 into a separate document. SV6 does include the cross-domain MIB, formerly the summary MIB, which will give all the required information needed for system management across domains. Again, these will be reviewed at the JSG next week, and TK invited anyone with input to attend the JSG meeting.

7.7 MA asked if the size of SV6 would increase to its expected 100-200 pages as indicated by JM at his System Management briefing. TK confirmed that the size will be very large, since there are 100+ pages on managed objects alone. TK also noted that the cross-domain MIB is still immature, and timescales are tight for it to be ready by ATNP/3.

WP 35 – ATN Connectionless Upper Layers Communications Service

7.8 SVT presented this revised and updated version of the proposed SARPs for the Connectionless Dialogue Service. The various stages of development of this material have been presented earlier. FP and TK had seen this in draft, and made constructive comments, and hence the whole paper has been worked line-by-line. It is now in PDR format, as an enhancement to the SARPs, and has been written as a plug-in to Doc 9705, Second Edition. WG2, long ago, provided a connectionless transport service in order to aid in performance for critical messages. This paper represents the upper layers on top of that transport service, and includes the naming and addressing updates by TK (and is therefore consistent with WP 10). This work reflects two ISO base standards – connectionless session and connectionless presentation efficiency enhanced protocols. FP has gone through the standards and profiled out the options not needed, and SVT has brought these forward to ITU, which should have the revised profile ratified by June 1999.

7.9 TK would expect this paper to be submitted for approval at ATNP/3. Also Eurocontrol is validating in this area as well. Initial validation includes a thorough review – this has been done, with mainly editorial faults found and corrected, and the final version of this paper should be presented at the next meeting of SG3. MA asked if will the potential use of Connectionless Upper Layers dialogue would allow for removal of some delays. SVT confirmed that it would, if speed of delivery is more important than ordered delivery, and if you're willing to have your own user-level schemes to mitigate ordering problems. An example would be in the terminal area, where you don't have time for an elaborate retransmission scheme.

7.10 PC noted that ARINC was looking at the integration of VDL mode 2 for AOC applications, and they have a solution where connectionless transport protocol service would be used. Did the ULC connectionless protocol affect the connectionless transport protocol given in Doc 9705? SVT replied that, from the point of an OSI purist's aspect, a stack is generally connectionless or connection oriented, and the only legal split is at transport. Therefore, from a purist's aspect you should match connectionless transport with connectionless ULA. So if you

want to do connectionless ATN, you should do this. PH could see nothing that precludes non-ATC applications from using connection oriented upper layers or connectionless transport – it was their choice. This was agreed by SVT and TK. MA said that we could expect to see an updated copy at the next WG3 meeting.

WP 17 – Eurocontrol GACS implementation and Validation

7.11 DVR presented this update on progress towards the Generic ATN Communications Service (GACS) implementation and validation. This paper described the project that has been started to validate not only the GACS SARPs but also the naming and addressing enhancements and connectionless upper layers. GACS could be looked at as a building block for new applications and/or a vehicle to migrate existing applications to the ATN. DVR said this should prove valuable for the handling the evolving ADSP requirements for new applications. GACS also allows both AOC and ATC traffic to share the same networks. However, it should be noted that applications using GACS in AE configuration are not considered fully integrated ATN applications, since they have no distinct ATN names and addresses. Also, CM is not used to negotiate versions. The contract for GACS development was signed in November 98, and is scheduled for completion by May 99. The GACS software would be made available free of charge to Eurocontrol member states. Based on the results of the project, a validation report will be produced for September 99 WG 3 meeting. The next phase of the project after May 99 will include integration of GACS in future applications, for example with PHARE EFMS, and the next step could include possible flight trials. MA said that comments to this paper would be taken after presentation of WP 13

WP 13 – Specification for the Generic ATN Communications System (GACS)

7.12 TK presented this paper which provided an updated Specification and Draft Guidance Material for the GACS – in effect draft SARPs. There has been a thorough review held since the last meeting. A major change is that there is now a tabular expansion of each of the primitive parameters. Also, previous editor's notes and the issues list have been removed. It should be noted that GACS assumes that the naming and addressing extensions and connectionless ULA have been incorporated (see earlier WPs above). This current draft SARPs is not compatible with the previous version, since a new ASN.1 field has been added to convey sender identification. Chapter 1 of the document is the SARPs and Chapter 2 is the Guidance Material. More emphasis have been placed on the technical development of the SARPs (e.g. Chapter 1), so Chapter 2 is slightly lagging in development, and does not fully reflect Chapter 1. Another editing round is needed, and the final version should be ready for the Naples WG3 meeting. This will include re-number as a Doc 9705 Plug-in (4.9), and stripping off the guidance material for update and eventual inclusion into the CAMAL. Finally, the document must be converted to WordPerfect. Also, it should be noted that if the validation activities underway uncover any defects, appropriate rectification would be included (under local change control, not involving the CCB).

7.13 JYP was happy to hear of the revised wording to avoid confusion with AMHS. Also, the introduction to the GACS programme made by DVR gave no indication of its use in the ground/ground environment, but this might indeed be the case. JYP invited DVR to keep SG1 aware of any issues in this area. JYP also asked about how version negotiation might work, since the paper notes CM is not used for version negotiation. TK said that there were two different ways of using GACS. One way was the AE approach, where the use of GACS is outside the ATN ULA, so it is up to the user to handle user application version negotiation. An example would be for using ACARS applications over the ATN. GS asked if any specific applications are foreseen to be used with the GACS AE. DVR said that a few candidates had been identified, e.g. pilot preference downlink and dynamic route availability. These will be brought to the ADSP, and are possible candidates for use of GACS.
PH wanted to know whether GACS could be used without CM, in either AE or ASE mode. TK replied that the GACS would probably require CM in order to exchange version and addressing information for GACS itself. So there was no difference in the envisaged use of CM. PH understood from this that ATS would need CM. IATA was assuming that CM would not need to be used. TK agree with that aspect, that CM would not be needed for AOC applications.

7.14 JYP assumed that all this would mean was that ATNP WG3 will have new tools with which to develop applications, provided by GACS. DVR agreed – he saw GACS as part of infrastructure, so although we may not have specific applications identified by ATNP/3, at least we have a building block that can be used to facilitate

future application development. MA thought that, post ATNP/3, subgroups tasked with developing new applications would be tasked with seeing the applicability of GACS for these new applications. DVR stated that it would be the responsibility of WG3 SG 1 to select the use or non use of GACS for ground/ground applications. However, MA was not sure how enthusiastically ADSP would develop new applications. PH said that IATA was very grateful to Eurocontrol for advancing this work. ACI had had an industry day, and was presented with the GACS draft SARPs to consider using them as the interface to the ATN for AOC applications. IATA would be able to do some validation, but probably not before ATNP/3. However, he expressed the hope that nothing would preclude having GACS proposed to ATNP/3 for adoption.

WP 42 – Secured ATN Dialogue Service
WP 43 – Upper Layers Security SARPs – Version 1

7.15 GMB gave a verbal presentation of WP42 and 43 (the papers were not available due to a breakdown in the copying process). WP42 was (hopefully) the last version of the document that was originally presented at Rio. The security paper also took into account the connectionless upper layers. The document is mainly based on the work of WG1/SG2, conforming to the use of X.509 certificates. Two basic mechanisms have been chosen: peer entity authentication during dialogue establishment, and integrity during the dialogue. The architecture is based on the OSI architecture.

7.16 WP43 was a first draft of enhancement plug-in chapter 4.8 of the second edition of Doc 9705. This defined a new service exchange to be used by the dialogue CF. The services provided to the CF are mainly connectionless services. One service is a confirmed service and will be used for authentication, one service will be used for computing signatures, and one service will be used to terminate an in progress security service. These would be done without affecting the ATN ASEs. It should be noted that system management would be needed to detect and act on security compromises. In addition, there was the need for a directory service, although not necessarily X.500. There was also the possibility of a modification of CM as well.

7.17 MA said it was likely that copies of both papers would be available prior to the consideration of the report of the meeting, and he would encourage comments at that time.

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

WP 37 – Definition of PICS for AMHS

8.1 JMV presented this paper, which was aimed at scoping the size of the effort for creating PICS for AMHS. The approach is based on the use of International Standardised Profile Implementation Conformance Statement (ISPICS) proformas. These have been augmented by additional requirements necessary for the AMHS, and filled out. The work has been defined for each of the three parts of AMHS. For the ATS Message User Agent part, only the MHS P2 protocol is proposed to be put through the process. For the ATS Message Server, the approach would be to combine all applicable standard PICS proformas with a slight addition for the Basic ATS Message Service requirements. For the AFTN/AMHS gateway, a slight expansion on the MTCU PICS proforma would probably be sufficient. There is a concern about copying documents, i.e. is it better to copy or refer to documents, how will changes be handled, and which document takes precedence? However, developing PICS for some aspects of AMHS (i.e. NOT the upper layers) could be useful, and would not require a lot of effort. There was a question about who was the intended audience for these PICS, the need for standardising how we handle ISO standardised profiles that are used in ATN, and where these PICS will go (what document).

8.2 PC said that from an implementer's perspective, one would use the PICS to design the system and they were a key to successful interoperability. From a certification perspective, the FAA would consider essentially MOPS for certification. He asked if it was therefore appropriate to have PICS in Doc 9705 or the CAMAL, or would it be better to have (dedicated) RTCA/Eurocae documents that contain the PICS? SVT thought that Doc 9705 containing the PICS would probably be sufficient, and that would be his recommendation. DVR said that the PICS proposals have also been made to the RTCA meeting as of last week, and RTCA has seen them as valid tools to help implementers define choices made in the SARPs. So there should be no problem to have

them in both places, with the ATN guidance material containing generic PICS, and the RTCA documents providing PICS specific to implementations.

8.3 MA asked if we were sure we wanted to see all the variations of PICS in Doc 9705? It could be a fairly large insert into 9705, and was that the proper place for it? Also, there are two levels of PICS, as DVR alluded to. We might consider putting in a PICS template in 9705, but whether or no we'll be specific in our PICS for Doc 9705 remains to be seen. The problem would probably need to be scoped. He would be unhappy about the two-document solution. FP was likewise not sure of the PICS final destination. For each application, there will be 40-60 pages of PICS, and we don't want to have this material in CCB process – the maintenance would be a problem. GS suggested that perhaps putting it into the guidance would help the maintenance problems.

8.4 PC was extremely disappointed by how things were going. He did not want more than one set of PICS - there would be potential conflicts, as operational PICS will be done for different environments. At Aerospatiale, they didn't want to be faced with the development of different architectures, so they don't see much of a need for generic PICS. JYP didn't have a real opinion about PICS or no PICS. He agreed they may be useful, but beyond that, if we were in a situation to publish PICS, the ICAO process would make things extremely difficult. Maybe ICAO is not in the position to do this maintenance. Do we know in this group if ICAO has already published PICS in a standard? FP said that of course ICAO had, because SV5 contains PICS, so we already have this kind of material in the SARPs. JYP felt that that meant the question of where to publish PICS has an answer, i.e. in Doc 9705. But he wished good luck to the CCB if a PDR occurred.

8.5 DVR thought that the dangers raised by PC would be somewhat mitigated by RTCA recognising certain completed PICS—technically and operationally (via the SG 2 proposed Operational Implementation Conformance Standards - OICS). The RTCA would develop an operational set of functions that would be a subset of the all the present members, freeze these, and make these the operational constraints (through the OICS). That way there was not a high risk of non-interoperability. MA also thought PC was being unnecessarily pessimistic, as the OICS should solve those problems. He restated that he would not like to say definitively where the PICS should go, regardless of precedent set by SV5. However, we need to give thought to it, without giving a categorical statement at this meeting. It is noted that Doc 9705 has been suggested as repository for the PICS, but final location was still to be decided.

8.6 JMV reiterated his request for WG3 guidance on whether to copy or reference ISO documents in the AMHS PICS development. DVR pointed out that there was already precedence; ISPs are already referenced by AMHS, so the same approach should be used. MA agreed – authors should reference where possible. This was the general view of the meeting, and accepted by JMV.

9. AGENDA ITEM 8 – IATA RELATED APPLICATIONS

9.1 There were no papers presented under this Agenda Item

10. AGENDA ITEM 8(a) – DOCUMENT TRACKING/VERSON CONTROL

WP 34 – Version Control for ATN Air/Ground Applications

10.1 PC presented this paper, which was a revised version of that presented at the last SG 2 meeting. Version control is a major issue. To permit end systems to communicate in the way expected/predicted by the operator, protocols have to be appropriately defined and the application entities must be able to recognise and understand each other. The implications were both technical (interoperability) and operational (compatibility), and the paper proposed definitions for these terms. Implemetor had to know what was the effect of PDRs, and how they would affect version changes. MA asked PC what was this paper asking the WG to do? PC said we should understand that there was a need to distinguish differences between changes that impacted technical interoperability or operational interoperability. He believed that it was much more important to consider operational impacts resulting from changes.

10.2 MA asked SVT if changes being considered by the CCB were being considered mainly from an operational or technical incompatibility. SVT said that this differention was covered in a TK paper, yet to be

presented, which differentiated and classified the various types of PDR. MA noted that this paper was originally going to be presented under Agenda Item 11, but should be taken here, as it would help alleviate some of PC's concerns.

WP 12 – Proposed PDR Classification Scheme

10.3 TK – presented this paper, which proposed categories of PDRs. Having observed problems where some implementations were getting a deluge of PDRs, they need to determine which PDRs are critical to their implementations. Therefore this paper is a description of the classification scheme of severity that has been proposed. There were some comments by the CCB on how the actual categorisation could be improved, but the principle remained the same. These categories will be further discussed, and any additional input would be helpful. MA thought this was a very practical paper, as there were many questions as to how severe the effect of a PDR could be. PC was afraid that by allowing users to choose which PDRs to implement, there would be a move towards incompatibility problems. However, the proposed paper contains a good approach. MA said that unless a change was made mandatory, some would choose not to implement. Therefore what PDR classification will do is at least give implementers a perceived severity of PDRs, if nothing else. This was similar to the issue of aircraft directives – unless they were mandatory, aircraft operators could choose not to implement them.

WP 40 – ATN SARPs Electronic Library
WP 41 – Acronyms for SARPs documents

10.4 JMc presented both papers simultaneously. WP40 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. There were concerns with improvement of the content of the material and the human machine interface. These include case sensitive search, spelling checker, side-by-side comparison, a list of acronyms, and an improved search header for the user. This tool will continue to be evolved. WP41 gave an acronym list – this was a dynamic document, and JMc would welcome additions and corrections. The group was thanked for all the input the group has given during the tool's development.

10.5 MA thanked JMc for the work that has been done, and asked if the tool would be distributed for general use. JMc confirmed that the FAA wanted to make it available. They haven't worked out all the mechanisms yet - the plan was for a six month free access to the tool over the internet, but there was a fair amount of work to be done to figure out how to protect the software, and get the cost acceptable. This was major hurdle, but they should be getting very close to solving this problem, and hopefully will be available by the Naples meeting. There will be a presentation of the improvements at the Naples meeting, where it is hoped to demonstrate a capability of using a hub for multiple PC connections for multiple random access. This should be available in Naples as well, so that WG members could hook up their PCs at the meeting to use the tool. A revised version of the Acronym List will also be presented at Naples.

11. AGENDA ITEM 9 – CNS/ATM –1 AND FANS 1/A ACCOMMODATION

11.1 There were no papers presented under this agenda item.

12. AGENDA ITEM 10 – ANTP LEXICON

WP 39 – Proposed Amendment to the ATNP Lexicon

12.1 TB presented this update to the ATN Lexicon; This continued work which was initiated at the Utrecht meeting. The terms and explanations are listed, with an indication on how stable their definitions are. TB asked for comments from the group. These definitions will eventually be put on the CENA server. Future papers presented will only have the changes included.

12.2 MA thanked TB for the work, which, taken with WP41, will provide us with very useful definitions and acronyms library for reference. TK wondered if there was any intention to compare these papers with the

material in the Annex 10 core SARPs, and to update any SV1 definitions. TB said not - in fact many of the SV1 definitions were lifted for the lexicon.

13. AGENDA ITEM 11 – AOB

WP 24 – Internet SARPs Modifications to Mitigate Mobile Subnetwork Connectivity

13.1 This paper, prepared by JM, in his absence was presented by TK. The ADSP had developed some conflicting requirements, whereby message elements shall be delivered in sequence. However, if a message was delayed, because of this requirement all subsequent messages would also be delayed. In case there was a problem with a failure of a node, TPDUs going down a dead end would have to be retransmitted. JM had proposed an enhancement to prevent unnecessary retransmissions. It made an optional feature of the transport protocol mandatory. This paper was presented here to say that the change has been proposed, and to see if there was an impact on SV4. It was reviewed in SG3, and it was determined there would be no impact on SV4. This paper is being discussed in WG2, but the outcomes of those discussions are unknown. MA appreciated the paper, and took it as an indication that the problem identified in ADSP is being actively investigated, and will note from the report of WG2 as to whether or not they will incorporate it. He would also inform the ADSP of the work in progress.

DP 01 – Draft report of the 15th meeting, Honolulu

13.2 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.

13.3 MA thanked JH and GS for their support in the preparation of the report – he was extremely grateful for the notes they had taken – without their help, this report would not have been completed in time for a full review by the members. However, any errors, omissions, bad grammar, spelling and indecipherable statements were MA's responsibility.

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

WP 21 – Meeting Arrangements for the 16th Meeting.

14.1 FC presented this paper, detailing arrangements for the 16th meeting of WG 3, which will be jointly hosted in Naples by ENAV and SICTA in May 1999. The paper gave full arrangements for booking accommodation, which must be done by 23/3/99. FC also said that it was hoped to arrange a Eurocontol/SICTA demonstration, possibly live, for one afternoon, probably in the second week.

14.2 The proposed timetable for the meetings will be agreed by WG 1, but MA would propose a timescale covering the two week period (17 – 28 May 1999) similar to that of both the Bordeaux and Honolulu meetings. A draft schedule could be -

WG 1 -	24 -26 May	WG1/2/3 Co-ord Mtg	24 May (pm)
WG 1/SG2	26(pm) - 28 (am) May		
JSG (SM)	26 (pm) May - 27 May		
CCB	17 May (1300 hrs)		
WG 2	18 - 21 May	Combined WG2/WG3	18 May (1400 - 1530)
WG 3	**18 - 21 May**	**Combined WG2/WG3**	**18 May (1400 - 1530)**
WG3/SG1	24 - 26 (am) May		

14.3 MA thanked ENAV and SICTA for their kind offer to host the meeting, and looked forward to meeting members there.

Appendix A

ATNP WORKING GROUP 3 - FIFTEENTH MEETING

19 - 22 January 1999

Honolulu, Hawaii
USA

AGENDA

1. Review/approve meeting agenda

2. Review report of the 14th meeting of WG3 (Bordeaux)

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 1400 - 1530 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

8a. Document Tracking/Version Control

9. CNS/ATM-1 & FANS1/A - Accommodation, Transition and System Compatibility (incorporating input from WG 1 SG Meeting,)

10. ATNP Lexicon

11. Any other business

12. Date and Place of Next Meeting (18-22 May 1999?)

Appendix B

ATNP WG3 FIFTEENTH MEETING - Honolulu, Hawaii, USA, 19 - 22 January 1999

ATTENDANCE LIST

NAME	TITLE/ORGANIZATION NAME	ADDRESS	CITY/STATE/ZIP COUNTRY	PHONE	FAX	E-MAIL
AL-GHAMDI, Saleh H	PCA, Manager Automation Eng Branch	P.O. Box 15441	Jeddah 21444 SAUDI ARABIA	+ 966.2.671 7717 Ext 263/247	+ 966.2.671 7376	
ASBURY, Michael	ATM P&D, UK National Air Traffic Services	Room T804, CAA House, 45-59 Kingsway,	London, WC2B 6TE UK	+44 171 832 5472	+44 171 832 5562	MikeAsbury@aol.com
BATOUK, Abdul Rahman	P.C.A. Communication and Computer Eng.	P.O. Box 4010	Jeddah 21491 SAUDI ARABIA	+ 966-55664381 or 966 26717717	+ 966 2 6717376	UVA3162@KAAU.EDU.SA
BELITZ, Thomas	DFS Deutsche Flugsicherung GmbH	Kaiserleistrasse 29-35	D-63067 Offenbach am Main GERMANY	+49-69-8054-2434	+49-69-8054-2495	TBELITZ@compuserve.com
BIGELOW, Michael	ARINC	2441 Riva Rd	Annapolis, MP 21401 USA	+ 4102664378	+ 410 266 2820	MPB@ARINC.COM
CAMUS, Paul	Aerospatiale	Teuchos 20 Chemin Laporte 31-300	Toulouse FRANCE	33-5-61-30-9046	33-5-61-30-9033	teuchos.mp@wanadoo.fr
CASTRO, Luiz	DEPV-CECATI	AV General Justo S/No	Rio de Janeiro – RJ BRAZIL	+55 21 814 6584	+55 21 814 6692	sdo@novanet.com.br
CECERE, Francesco	SICTA	Via Circum.NE Ester Loc. Pontericcio	80014 Giugliano, ITALY	39 081 8180 278	39 081 8180 795	fcecere@sicta.it
GARCIA, Nelson	FAA, Argentina	Av. Alem 719 P7 Dto 3	Buenos Aires (1001) ARGENTINA	54 11 4317 6316	54 11 4317 6316	ngarcia@faa.mil.ar
GOUARNALUSSE, Omar	FAA, Argentina	Farias 1327	San Miguel (1663) ARGENTINA	54 11 4664 5542	54 11 4317 6322	OGOUARNA@faa.mil.ar
HAMELINK, Jane	Adsystech	8401 Colesville Rd. Suite 450	Silver Spring, MD 20910, USA	+1 301-589-3434 extension 114	+1 301-589-9254	jhamelin@adsystech.com
HENNIG, Paul	IATA/United Airlines	WHQKA 1200 Algonquin RD	ELK Grove, IL 60007 USA	+1-874-700-4312		
HORIKOSHI, Takayuki	OKI Electric Industry Co.	10-3, Shibaura 4-chome	Minato-ku Tokyo 108, JAPAN	81-3-3452 2309	81-3-3798 7623	horikoshi133@tkm.sips.oki.co.jp
HRITZ, Michael	FAA/AND 720	800 Independence Ave SW	Washington DC 20591 USA	1 202 493 4910	1.202 493 5022	mike.hritz@faa.gov
ITANO, Ken	ENRI	6-38-1 Shinkawa	Mitaka, Tokyo JAPAN 181	81 422 41 3191	81 422 41 3192	ken200@enri.go.jp
JAMPATHOM, Bhumisathit	AEROTHAI	102 Ngamduplee, Tungmahamek, Sathorn	Bangkok 10120, THAILAND	+ 662 2859006	+ 662 2859100	

LAM Henry	FAA/RMS	600 Maryland Ave SW Suite 305 East	Washington DC 20024 USA	1 202 314 4579	1 202 863 7333	henry.ctr.lam@faa.gov
LECLERC						
LECLERC, Claude	Eurocontrol	Rue de la Fusee 96	1130 Bruxelles BELGIUM	32 2 729 3355	32 2 729 9086	claude.leclerc@eurocontrol.be
KERR, Tony	EUROCONTROL	Ecsoft Uk Ltd, Centennial Ct, Easthampstead Rd	Bracknell RG12 1YQ U.K	+44 1344 867199	+44 1344 868442	tony.kerr@ecsoft.co.uk
McCONNELL, Jack	FAA/Lockheed Martin	600 Maryland Ave SW, Suite 500	Washington DC, 20024, USA	+1 202 651 3906	+1 202 651 3940	john.j.mcconnell@lmco.com
MITTAUX-BIRON, Gerard	CENA	7, Av. E. BELIN - BP4005, f-31055	Toulouse CEDEX FRANCE	+33 5 62 25 96 36	+33 5 62 25 95 99	mittaux-biron_gerard@cenatoulouse.dgac.fr
OKLE, Manfred	Frequentis Network Systems	Bahnhofplatz 1	88004 Friedrichshafen GERMANY	+ 49 7541 282-287	49 7541 282 299	manfred.okle@frqnet.de
PATEL, Vic	FAA/ACT-350	W.J.H. FAA Tech Centre, Atlantic City Airpark,	Atlantic City, New Jersey, 08405 USA	1 609 485 5046	1 609 485 5630	vidyut_patel@faa.gov
(Not Present – Information only) PAYDAR, Masoud	ICAO	999 University ST Montreal, QC	CANADA, H3C 5H7	+1-514-9548210	+1-514-9546759	mpaydar@icao.org
PICARD, Frederic	STNA (Sofreavia)	1 Avenue du Docteur Maurice Grynfogel – BP 1084, 31035	Toulouse Cedex FRANCE	33-5-62-14-55-33	33-5-62-14-54-01	PICARD_Frederic@stna.dgac.fr
PIRAM, Jean-Yves	STNA Chef Subdivision Messagerie Ops	1 Avenue du Docteur Maurice Grynfogel – BP 1084, 31035	Toulouse Cedex FRANCE	33-5-62-14-54-70	33-5-62-14-54-01	piram@cenaath.cena.dgac.fr
PONGLADDA, Pornpen	Aeronautical Radio of Thailand	102 Ngamduplee, Tung Mahamek, sathorn	Bangkok 10120, THAILAND	662-285-9576	662-285-9253	Wichian@mozart.inet.co.th
RONGTHONG, Somnuk	Aerothai	102 Ngamduplee, Tung Mahamek, sathorn	Bangkok 10120, THAILAND	662 285 9246	662 287 3131	rongth@mozart.inet.co.th
SACCONE, Greg	Open Network Solu-tions Inc/FAA	c/o22636 Glenn Drive	Sterling, VA 20164 USA	+1 604 681 5829	+1 604 681 5820	gsaccone@home.com
SAKAUE, Naoto	Mitsubishi Electric	Kamimachiya 325,	Kamakura, Kanagawa JAPAN	+81-467-41-3531	+81-467-41-3508	sakaue@siden.cow.melco.co.jp
SATO, Hidehiko	NEC Corporation	29-33 Shiba-5, Minato-Ku	Tokyo JAPAN	+ 81-3-3456-7742	+ 81-3-3456-7747	satoh@atc.int.nec.co.jp
STEINLEITNER, Jörg	NLR, National Aerospace Lab	A. Fokkerweg 2	1059 CM Amsterdam, THE NETHERLANDS	+31-20-511-3304	+31-20-511-3210	Steinlei@nlr.nl
TRAN, Hoang	FAA, Program Manager, International Comm./AOP-600	800 Independance Av. sw Washington DC 20591	USA	+ 1-202-314-7764	+ 1-202-651-3940	Hoang.Tran@faa.gov
VACHER, Jean-Marc	ON-X Consulting	57, Boulevard de l'Embouchure	31200 Toulouse, FRANCE	33-5-62-14-54-74	33-5-62-14-54-01	jmvacher@on-x.com
VAN ROOSBROEK, Danny	EUROCONTROL	Rue de la Fusée 96	1130 Bruxelles, BELGIUM	32-2-729-3471	32-2-729-9083	danny.van-roosbroek@eurocontrol.be
VAN TREES, Stephen P.	FAA/AIR - 130	800 Independence Ave SW,	Washington, DC 20591, USA	+1.202.267.9567	+1.202.493 5173	stephen.van.trees@faa.gov

Appendix C

ATNP WG3 - Fifteenth Meeting - Honolulu, Hawaii, USA, - 19-22 January 1999

LIST OF WORKING, INFORMATION and DISCUSSION PAPERS

Paper Number	Agenda Item	Presenter	Title
W3/15-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 14th Meeting, Bordeaux
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 Tree	Report of WG3 SG3 (Upper Layers Architecture)
08	3.1	M Asbury	Report of ADSP WG A & B Meetings (Madrid)
09	6.3	A Kerr	CCB - SME4 Report
10	6.4	A Kerr	UL Naming and Addressing
11	6.4	A Kerr	Sub-Volume 6 Update
12	11 (8a)	A Kerr	CCB – Categorisation of PDRs.
13	6.4	A Kerr	GACS Draft SARPs
14			*Withdrawn*
15	3.2	S. Van Trees	CCB Chairman's Report
16	4.3	F Picard	SME2 (Air-Ground ATN Applications) Status Report
17	6.4	D v Roosbroek	Status of the Eurocontrol GACS Implementation Project
18	4.2	D v Roosbroek	Trials End System Status
19	4.2	D v Roosbroek	Eurocontrol Link 2000+ programme
20	4.2	D v Roosbroek	PETAL II Specifications
21	12	F Cecere	Meeting Arrangements for the 16th Meeting
22	4.2	F Cecere	FIS/NOTAM Briefing Paper (1)
23	4.4	F Cecere	FIS/NOTAM Briefing Paper (2)
24	11	J Moulton	Internet SARPs Modifications
25	4.4	G Saccone	CM Server Service in Package 2
26	4.4	G Saccone	CM Package 2 Backwards Compatibility Enhancements
27	4.4	G Saccone	Commentary on Eurocontrol Data Link Server Paper
28	4.4	G Saccone	AEEC Activities
29	4.4	G Saccone	The Use of X.500 Protocols in ATM Data Link Technology
30	4.4	F Picard	Current Status of SARPs Development - METAR Service
31	4.4	F Picard	Proposed Modifications to CNS/ATM-1 Applications to support Package 2 Security Services
32	3.3	M Paydar	ICAO ATNP Secretariat Report
33	3.5	M Bigelow	Security SG Progress Report
34	8a	P Camus	Version Control for Air/Ground Applications
35	6.4	S Van Trees	Connectionless Dialogue Service
36	5.3	JM Vacher	SME CCB Report
37	7	JM Vacher	Definition of PICS for the AMHS
38	5.4	JM Vacher	AMHS Security Operations
39	10	T Belitz	Lexicon Update
40	8a	J McConnell	ATN SARPS Electronic Library Improvements

41	8a	J McConnell	Acronyms for SARPs Document
42	6.4	G M-Biron	Secured ATN Dialogue Service
43	6.4	G M-Biron	Upper Layer Security SARPs – Version 1
W3/15-IP01	5.2	C Leclerc	European Flight Data Exchange Validation Programme
02	4.3	F Picard	Proposed Change Pages for ICAO Doc 9705 Amendment 1 - SV2 (Soft Copy only)
03	4.3	P Camus	CPDLC Messages
04	5.2	M Akimoto	Current Status of AMHS Implementation Activities between USA and Japan
05	5.2	JV Piram	Inventory of Current AMHS Related Activities
06	4.2	K Itano	Japanese ATN Development and Implementation Plans
07	4.4	S Van Trees	NAS Modernisation Effort – CPDLC Implementation
08			
W3/15-DP1	11	M J Asbury	Draft WG3 15th Meeting Report from Honolulu

Appendix D

BRIEF NOTES OF THE AUTOMATIC DEPENDENT SURVEILLANCE PANEL (ADSP) WORKING GROUP A (WG A) MEETING, MADRID, 26 - 30 OCTOBER 1998

1. The latest meeting of ADSP WG A was held in the Hotel Melia Los Galgos, Madrid, Spain from 26 - 30 October 1998. It was attended by 22 members from 8 states and 5 International Organisations. The meeting was hosted by Toni Galdo, the member for Spain, who delivered a speech of welcome. The meeting was chaired by Don MacLean (NAVCANADA)

2. In reporting work done on topics for which the Working Group was responsible, Germany indicated that ADS-B was a major topic seen as part of the future strategy. There was already extensive work in the area of ADS-B, although they also concluded that ADS-B will not be mature enough before at least 2007/8. But nevertheless, the long-term goal was to move to ADS-B. There was yet more emphasis on the STDMA/VDL Mode 4 work, and the benefits which would accrue from the use of this technology. There was a recognition that there will a need to make a decision between this and the Mode-S extended squitter, but since ADS-B was not exactly ripe for implementation, DFS had decided that there was no need to make the technology decision yet.

3. Published information indicated that the Australians seemed to have developed ADS-B requirements because of revision of Class G airspace, for the times when scheduled aircraft may use this airspace. The Australian member said that this was journalistic hype, more in hope than anticipation, and that ASA had still no fully developed operational requirement for ADS-B.

4. The main focus of work at this meeting was to develop further amendments to, or new material for, ICAO Annexes and PANS-RAC resulting from implementation of ADS. UK had chaired an earlier WG A Task Force, responsible for the preparation of draft material. This draft material had been reviewed by RGCSP also, and their comments were noted. The ADS procedures developed for PANS-RAC virtually have the status of an ICAO Annex, and the treatment of the material had to be very precise if it was to be accepted by the ANC for global dissemination and implementation. The draft material had suggest a level of automation which should be considered when considering ADS procedures, but both ICAO and some of the international organisations felt strongly that this was forcing a level of implementation, which was contrary to ICAO policy.

5. The review of the material was tedious, and took two and a half days. The problem is that the material is needed to form the basis of ATC procedures in an ADS environment, and to ensure global interoperability. PANS-RAC is major source documentation for scores of States, many of whom will be expected to implement ADS fairly soon, if they are not already doing so (e.g. Japan). There is a terrible lack of awareness of oceanic and remote area operations.

7. The next meeting will be held in Adelaide from 1 - 5 February 1999. The next again meeting, a pre-ADSP/5 Working Group of the Whole meeting, is expected to take place in Ottawa from 26 April to 7 May 1999, with the Panel meeting taking place in the October.

Appendix E

BRIEF NOTES OF THE AUTOMATIC DEPENDENT SURVEILLANCE PANEL (ADSP) WORKING GROUP B (WGB) MEETING, MADRID, 19 - 23 OCTOBER 1998

1 The latest meeting of ADSP WGB was held in the Hotel Melia Los Galgos, Madrid, Spain from 19 - 23 October 1998. It was attended by 23 members from 8 states and 4 International Organisations. The meeting was chaired by Jean Francois Grout - 30 work papers and Information papers were presented. Chris Dalton, the ICAO ADSP Secretary was in attendance, providing ICAO advice and policy.

2. The WG reviewed amendment proposals for the AIDC, CPDLC and D-FIS parts of the Manual for ATM Data Link Applications (Doc 9694) for completeness and clarity. The ICAO Met Secretariat had made many comments on parameters, ranges and resolutions relating to Met services, and offered information extracted from the relevant WMO documentation. But in some cases Met notation and operational notation is different for the same occurrence. The WG was looking to progress the addition of the METAR service to D-FIS. The ultimate aim of the ADSP Secretariat was that all Manual material would go to Annex 11 (and other Annexes as appropriate) and PANS-RAC - Doc 4444. But some members would like to see the Manual as a focal point - it was already being used for reference.

3. The WG agreed the UK proposal to use the ITA 2 Alphabet listed in Annex 10 (upper case letter, numbers and a few characters), with the addition of the space character, which would suit current non-case sensitive data link applications. There had been incidents where the size of the font could gave an implication that lower case information was 'second class'. UK proposed definitions relating to Data Authority, as amended by the meeting, were also accepted. UK had also proposed new transition material for the Manual, and this would be actioned at the next meeting.

4. IFATCA highlighted a problem whereby, as a result of the OR that messages should be delivered in the order sent, a vital message could be held up if a previous message was lost. If messages were held up, communication with the aircraft was effectively blocked. The WG needed to know the rate of occurrence, and this problem should be discussed with ATNP members.

5. The WG reviewed amendment proposals for Annexes 2 and 11 and Doc 4444 as they related to the CPDLC and D-FIS parts of the Manual. UK had proposed a change to the ATIS message to allow notification of Approach Type to be optional, but IFALPA wanted even more information than was currently transmitted. UK would revise and resubmit its proposals.

6. Amendments to Doc 4444 had been prepared by a Drafting Group, and were reviewed. There was major serious discussion on the question of voice or data read-back of data linked messages. IFALPA was very unhappy about not reading back a clearance. Uninhibited use of free text was considered likely to cause major problems, if not accidents, but UK noted the need to take account the regular use of pre-formatted free text introduced by States to facilitate normal operations, e.g. routine departure clearances. The problem of aircraft requesting unsupported services e.g. metric flight levels in non metric airspace needed more work. Procedures relating to mixed voice/ data link operations and transfer of communications needed to be refined. Many members did not understand fully the concept of NAT operations and downstream clearances - the traffic flow was totally different from Europe as from Gander - this was essentially a Westbound clearance problem.

7. The WG reviewed progress towards the development of the RCP concept, being developed by a Subgroup. The SG had decided only to develop the RCP concept for known applications - hoping that this would act as guidance for groups with expertise in other areas, e.g. GNSS, AMCP etc. The dialogue must involve the human end user where a human end user would be expected to provide the reply. The WG should learn form the RNP concept, and remember the problems of evaluation, validation and certification - the system should be certifiable.

8. The next meeting of WG B will be held in Adelaide from 8 - 12 February 1999.

Appendix F

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

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

Systems Management

2. Jim Moulton (JM) said that the System Management Subgroup had not met since the last meeting, but will meet next week. The latest version of the CONOPS will be available, along with the first draft of the Protocol Suite, and a draft definition of identified managed objects. A drafting and review group would be meeting on 25/6 January, with the full meeting to follow.

Security

WP 33 – WG1 SG2 (Security) Chairman's Report

3. Mike Bigelow (MB) presented this paper. The SG have had two meetings since the last WG 3 meeting, namely at the end of the WG 1 meeting in Bordeaux, and at Phoenix at the beginning of December. Progress has been made on all parts of the work plan. There is a major issue on the selection of a suitable cryptographic algorithm available for aeronautical environment – the first draft of the requirements have been laid out and submitted to WG1. Subgroup participants from NASA Ames are trying to find a solution – the National Institute of Standards (NIST) have been polled but are not interested. The current target is papers, review and selection of an appropriate algorithm during the next two subgroup meetings, with selection by the May WG 1 meeting.

4. The second big item related to the review of current SARPs, including a break out of details originally in Sub-volume 1, and now planned to be included in a new and separate sub-volume 8, currently at version 0.2. Deliverables will be made to WG 1. MB said also that the SG focus was away from guidance material; this would still have to be done after the SARPs were completed.

5. MA thanked MB for the report: he asked whether we were reasonably looking for validation within the current ATNP/3 timeframe. MB said that they were working on this, more as independent activities than focussed as a group. NASA has a lead, and the FAA is also doing some work. MA said that the timescale implied that WG1 must accept any recommendation in May. MB agreed that the selection of an algorithm was a critical element – selection would be by a mini paper validation. RJ said we should have to select an algorithm already in use in other arenas – then validation would not be so critical. Nevertheless we would need the infrastructure in place to allow us to implement a CM server prototype enhanced to support security. Ideally we should need two independent implementations. In addition the ULA needed enhancement and a CPDLC prototype was needed.

6. RJ explained that, although the US program was not yet written on paper, the FAA were trying to co-ordinate several resources. NASA funding will support ATN aeronautical work, and will also provide X500 servers. In addition, NASA will provide some testbed facilities, although he did not yet know how extensive this programme might be. The FAA Technical Centre was also funded to support work in this area, and will validate IDRP security with prototyping. MITRE were also expected independently to do same as the FAATC. ONS Inc. will also bring up an X500 server. Realistically, therefore, we should have a minimum of two, and maybe as

many as four, X500 servers. Real development work needs to be done to the dialogue service and above (CM and CPDLC). How long will it take to bring all these separate pieces together is still an unknown – the longest element would probably be the application changes. RJ didn't know whether two independent implementations of applications would be possible.

7. GMB said that CENA intended to have intense activity in upper layers starting as soon as we had clear mechanisms. They intend to participate in system management related to security. DVR said that Eurocontrol currently had no plans or programmes which were security related in the ATN area. RJ said that we now had the resources; what was needed now was a co-ordinated effort. Completion was difficult to forecast, but there will probably be co-operative agreements with CENA etc., which will expedite the process.

ICAO

WP 32 – ICAO ATNP Secretariat Report

8. MA was very disappointed that Masoud Paydar (MP) was not here this week. However, he would go over some points that MP had made in his paper. We have a new member, Stephen Hiltz, to replace Tom Calow (Canada). MP had mentioned formal co-ordination and the exchange of communiqués with AMCP and the FLIRECP, but MA felt that there should be more , or even some, co-ordination with ADSP, RGCSP and SICASP. Otherwise how could we maintain any configuration control over documentation and policy MP had reserved space in Montreal to cover the dates of the May meeting, but this had been superseded by the offer from FC (WP 21). MP gave dates of 7-18 Feb 2000 in Montreal for ATNP/3, although these would probably not be formalised by ANC until 3rd quarter of 1999. MA thought that this was too short notice – many States had to organise travel and subsistence budgets up to a year in advance.

9. RJ noted that the CAMAL had been passed back to the CCB. Both he and MP were somewhat worried about the Guidance Material put on the CENA server by ICAO editors supporting the secretariat. If there were any comments on the material, they should be passed to the CCB. The material is on three zip files, and he would put it on the meeting archives called 'CAMAL'.

ATNP/3 Planning

10. MA noted that Masoud proposed dates of 7-18 Feb 2000. With the Naples meeting being held at the end of May, and a further meeting planned for September/October in Spain, there would only be two meetings, followed by gap of 5 months or so before the Panel meeting. We would generally want a Working Group of the Whole (WGW) meeting within 3 months of the Panel so the timings did not look too good. All this presupposed that security, systems management and PICS were all ready for presentation.

11. RJ said that WG2 had discussed this earlier. They saw two approaches. In September we should have reasonable mature (perhaps part validated) new Subvolumes – if so, these could be reviewed and submitted to Masoud for translation. We should recall that we had the Alexandria meeting something like two weeks before last panel and may need to do something like that again. Certainly the proposed new Doc 9705 sub-volumes should have to be ready by November. He thought that we should need a WGW meeting in January to produce addendum for the Panel. If we do not think we shall be at that state of readiness by September, then we must go for a later panel meeting. WG2 were really split on this. Some people think not, but not a consensus. We really need to know the next available slot - a year later would be too late, but a couple of months delay might be OK.

12 SVT felt that we must present a strong unified front to ICAO for having the meeting in February, with no slip at all. JM thought we should be cautious – a fairly significant (large) part of the enhancements can be done by September, but having the bulk of two or three SVs done by then could be asking a lot. MA suggested that we could slip the September meeting to the end of October, but this got no takers.

13. RJ said that another possibility could be that each working group needed to identify a critical list of enhancement for Package 2. JYP remembered a similar discussion of previous panel meeting work, and lasting and unpleasant memories of a lot of pressure right up to the meeting itself, and he didn't want a re-run of this.

He felt there was a need for a WGW meeting between September and February. MA proposed that we should have a WGW meeting in the first week of December, for one week only. RJ reminded the meeting that December has 2 weeks out already. SVT recalled that cover paper were prepared in six languages, but the attachment was in English only – this applied to the SARPs material and some of the validation reports. RJ said that we had obtained an unusual exemption to not translate from the ANC, and they were unlikely to repeat the dispensation. PH said that manuals do get translated, and RJ confirmed that Doc 9705 is in the process of being translated.

14. Regarding the amount of paper being prepared for the Panel, JM thought it would be close to 1000 pages – the three SVs alone could be around 450 – 600 pages, and there were multiple change pages for Doc 9705. MA agreed – there were more change pages than originals in SV 2 alone.

15. MA, concluding the discussion, said that it would seem the meeting agreed that we should accept Masoud's proposed dates and work towards them. We would also need WGW, before the Panel meeting, and the best time for that seemed to be 29 Nov – 3 December. We needed a firm offer for a location, but in the mean time we should ask Masoud to reserve space: if the Alexandria meeting was anything to go by, we would need breakout rooms for ad-hoc meetings.

16. There was general agreement for this arrangement, and the joint session was closed.