ATNP/WG 3

WG3/14-DP1A

AERONAUTICAL TELECOMMUNICATIONS NETWORK (ATN)

WG3 - (ATN Applications and Upper Layers) Fourteenth Meeting

Bordeaux, France

29 September - 2 October 1998

Agenda Item 9: AOB - Review Draft report of the 14th meeting of WG3 (Bordeaux)

Draft Report - Working Group 3

(Presented by M J Asbury)

1. INTRODUCTION

1.1 The 14th meeting of the ICAO Aeronautical Telecommunications Network Panel Working Group 3 was held in the Holiday Inn, Bordeaux, from 29 September to 2 October 1998. 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 report was reviewed by the Working Group.

2. RECOMMENDATION

2.1 Members are recommended to review the report and pass any corrections to the Rapporteur by e-mail. The final draft will be reviewed for correctness at the 15th meeting in Honolulu.

REPORT OF THE 14TH MEETING OF THE AERONAUTICAL TELECOMMUNICATIONS NETWORK (ATN) WG3 - (ATN APPLICATIONS AND UPPER LAYERS), BORDEAUX, FRANCE, 29 SEPTEMBER - 2 OCTOBER 1998

1. INTRODUCTION

1.1 The 14th meeting of the ICAO Aeronautical Telecommunications Network Panel Working Group 3 was held in the Holiday Inn, Bordeaux, France from 29 September until 2 October 1998. The meeting was chaired by the WG3 Rapporteur, Mike Asbury, and was attended by some 33 Members from 11 States and 4 International Organisations. 26 Working Papers (WP), 6 Information Papers (IP) and 1 Flimsy were presented. A copy of the Agenda for the meeting is at Appendix A, the list of attendees is at Appendix B, and the list of Working Papers is attached at Appendix C.

1.2 The meeting was welcomed to Bordeaux by Arnaud Dedryvere, DNA, France. He indicated that there would be an opportunity for WG3 participants to visit the Bordeaux En-Route Air Traffic Control Centre later in the week. His offer was gratefully accepted, and 14 members took advantage of his offer.

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

WP-01 - Agenda

2.1 Mike Asbury stated that, in addition to the agenda presented, a combined meeting with WG2 would take place on the second day of WG3 meeting, covering some of points of agenda item 3.

2.2 The Agenda was approved by the meeting.

3. AGENDA ITEM 2 - REVIEW THE REPORT OF THE 13TH MEETING

WP-04 - Draft Report of the 13th Meeting

3.1 The 13th meeting had been held in Utrecht, from 29 June to 2 July 1998. It was chaired by the WG3 Rapporteur, Mike Asbury and was attended by some 33 Members. The report had been circulated via the CENA server and had been available for comment for more than four weeks; no comments had been received. Mike gave a summary of the report. This summary is at Appendix D.

3.2 Two changes were made to the report: Para 5.3.2 was clarified by replacing the expression "roundness" (4th line) by “completeness”. Para 7.4.5, 7th line was amended to read: “…and that it was not *only* proposed as an application as such.”.

3.3 The meeting approved the Report of the 13th Meeting

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

4.1 Item 3.1 - ADSP WG A & B Meetings

4.1.1 Mike Asbury, the UK ADSP Member, stated that there had not been any further ADSP WGs meetings since his last report in Utrecht. However, two Drafting Groups had met to draft proposals for the ICAO Document Doc 4444 (PANS-RAC). Mike gave a description of the Procedure for Air Navigation Service – Rules of the Air and its relationship with respect to ICAO SARPS and Annexes. One DG had met to develop Procedures for ADS whilst the other developed Procedures for CPDLC. These amendments to the PANS-RAC will be proposed to the next ADSP WGs meeting in Madrid at the end of October 1998.

4.1.2 Paul Camus asked whether these procedures were being developed for ATN SARPs Package 1 or for long term operation. Mike confirmed that only long term ATS Data Link operation were being considered in the PANS-RAC, thereby excluding any transitory mode of operation. Likewise, only global applications were considered; any regional differences in implementation usually being covered

in ICAO Regional Supplementary Procedures. Concern was also expressed at the approach of ADSP to consider the Ground segment only of what should be an integrated air-ground system. Mike pointed out that, although PANS-RAC were primarily written for ATS Providers, they also contained reference for the airborne side, and drew attention to specific parts for pilots to read. ADSP had also identified relevant material for the sister PANS-OPS publication, more dedicated for pilot procedures. ADSP did not take into account implementation considerations, whether airborne or ground.

4.1.3 Mike Asbury had prepared brief reports on the work of the Drafting Groups: They are attached as Appendices E and F.

4.2 Item 3.2 - ATN CCB Meetings

WP15 - CCB Chairman's Report

4.2.1 Steven Van Trees presented the report of the ATN CCB Meeting held on 28 September 1998 at Bordeaux. The Paper provided a summary of PDRs by category and dates showing that the total number of RDRs raised to date (151) were distributed according to the classic bell-curve, and that we were now reaching the tail of the distribution with only a very small number of PDR left unresolved. An outstanding point, however, was the lack of control of the CAMAL, both in content and in timing of publication.

4.2.2 Mike remarked that Doc 9705 Chapter 1 contained what appeared to be all of the ATNP Annex 10 SARPs material; Steve van Trees confirmed that although notionally identical, the CCB Procedures allowed changes to be made to Doc 9705 contents more rapidly (within 2 weeks) compared with Annexes changes (two years). Mike commented that the CCB Procedures seemed to be working well and were now stabilised with good visibility.

4.3 Item 3.3 - ICAO/ANCP Activities

4.3.1 Unfortunately Masoud Paydar was not present, and provided no paper giving any update on ICAO matters related to ATNP activities. It is to be hoped that the February 2000 dates for the ATNP/3 meeting will be confirmed. Mike Asbury agreed to ask Masoud about Guidance Material progress, and report to the WG as soon as possible.

4.4 Item 3.4- Joint System Management (SM) SG

Joint WG2/WG3 Meeting

4.4.1 As WG2 was meeting at the same location during the same week, a short joint session was organised to enable participants of both Working Groups to exchange information and clarify any relevant issues. These included System Management and Security

IP6 - Report of the Joint Sub-Group on System Management (JSG) Status

WP13 - Draft of the JSG Concept of Operations (CONOPS) Document

4.4.2 Jim Moulton presented his report. He noted that the JSG was in the process of formalising their Terms of Reference (to be finalised at their next meeting). There was a need to focus on what was needed for Systems Management (SM) techniques. A first draft of the CONOPS had now been prepared, and he would welcome verbal or written comment on the document before the next JSG meeting (7-8 October). The JSG were working on the concept of both a full MIB and a summary MIB - both would be defined in SARPS SV VI. There were two levels of management - local management - i.e. within your domain - and that information you were prepared to share with others. This sharing information could be limited to a limited number of general attributes, and the definition and derivation of these was definitely future work. He thought that it would only be the summary MIB, or agreed exportable information, which would/should be SARPed.

4.4.3 Mike Asbury thought that the question of shared information was a very political hot potato - there may be some information which you may wish to share with your immediate operating

neighbours, but you would not wish the rest of the world to know about. Perhaps indeed there was very little information which would be generally shared at all. Jim Moulton agreed - but States and administrations should be encouraged to show what their ATN performance was, perhaps in terms of successful message rates etc.

4.4.4 Paul Camus said that implementation of system Management into aircraft avionics was critical, and there was a strong need to define aircraft requirements as soon as possible. These could include the management of real time air/ground operations and connections. Jim Moulton agreed that there would be airborne managers on the aircraft, but the airborne Summary MIB would be different from the ground MIB.

4.4.5 Mike Asbury asked about the timescales for the work. Jim Moulton said that the work would be completed before ATNP/3. There would be a good draft available for the Honolulu meeting.

4.5 Item 3.5 - Security SG

WP25 - WG1/SG2 (Security) Chairman's Report

4.5.1 Mike Bigelow gave a presentation on the work of the Security Subgroup to a combined meeting of WG3 and WG2.

4.5.2 Significant progress has been made against the work plan proposed at the Langen meeting in 1997. There has been liaison with the ADSP, although the results are not as good as hoped for. Work has proceeded on the cryptographic algorithm, but more information has been requested from WG 1. Revisions to proposed draft SARPs have also been made, and a version 1.0 has been proposed to WG 1. Mike gave an expanded presentation to WG3, reported below.

WP08 - Selection of ATN Cryptographic Algorithm

4.5.3 Steve Van Trees, in his position as WG3 security expert, gave a verbal report saying that WG3/SG3 had identified a number of high level security requirements for users authentication. There appeared to be no requirement for message data encryption, therefore security would be carried out at the Upper Layers level. Secondary, but essential, requirements included the need to have minimum disturbance to the applications themselves, and to have backward compatibility.

4.5.4 Mike agreed that user authentication rather than encryption was in line with ADSP view. He posed the scenario of a legitimate user "losing" his public/private key when about to log on. Mike Bigelow confirmed that having the public and private security keys in a secure aviation environment would be mandatory. However, Mike said that fall back procedures would indeed need to be put into place in the event of any sort of failure.

4.5.5 Following a request for clarification, it was confirmed that the security requirement for users authentication did not come from ICAO. The ADSP operational requirement (OR) was simply for *positive identification* of the end users; authentication was an ATNP proposed solution to the ADSP OR. Paul Camus wanted to know whether this proposed solution was acceptable to the airlines. The formal position of IATA was sought by the chairman, and Paul Hennig confirmed that IATA agreed with the ATNP proposal which was considered reasonable but he emphasised again that there was a need for backward compatibility. AEEC was also reported working along similar lines, and Jean Yves Piram noted that the Ground-Ground Applications Sub Group shared the activities on security.

4.5.6 Mike Asbury had been tasked with preparing a WP for ADSP on security; provided Mike Bigelow had no strong objection, he proposed to base it on WP 8, and this was agreed.

WP24 - Secured ATN Dialogue Service

4.5.7 Gerard Mittaux-Biron presented the above paper under this Agenda Item. ICAO was in the process of standardising the requirements for ATN security, and this Paper proposed a security mechanism in the ATN Upper Layers. Both the document and the presentation were very comprehensive. The security strategy was based on peer entity authentication, which meant that the security policy would guarantee that the communicating entities are really what they pretend to be, Data authentication and detection of replayed messages needs also to be taken care of. The paper

indicated that the preferred security option was end-use authentication through the medium of the Upper Layer, with asymmetric security key and one “public” key and one “private” key. Gerard stated that the technical implementation was not considered as being complex - there need be no system management involved, just upper layers implementable mechanisms. The aim was to cause minimum interference to the applications, and for backward compatibility ton be maintained. But the legislation could well be a difficult issue.

4.5.8 It appeared that clock synchronisation was essential to security operation. Mike Asbury asked what was the accuracy needed, and how would it be achieved. Gerard was not sure of synchronisation required - possibly to the nearest ten seconds. This was greater than the anticipated level of timing accuracy being proposed by ICAO. This WP provided technical means to provide secured dialogue, but also raised several questions as to who was to decide which application, which context, message types or services were to use which level of protection. The subject will be left to ATNP future work.

4.6 Item 3.6 - Other ATNP WGs

4.6.1 Paul Hennig said that WG1 have not met since the Utrecht WG3 meeting.

5. AGENDA ITEM 4 - AIR-GROUND APPLICATIONS

5.1 Item 4.1 - Subgroup 2 Report

WP06 - Report of the 18th Meeting of WG3/SG2

5.1.1 The Report was presented by Mike Asbury (also Chairman of SG2). He pointed out that, as he had to make a one-page report of meeting for his management, he would attach this to the to the more formal and detailed meeting reports in future - members could use this mini-report as they wished.

5.1.2 SG2 had had one meeting in Toulouse since the last WG3 meeting. A number of points and actions of relevant interest on air-ground applications were highlighted. Some of these would be presented later in the form of papers. The still vexed question of 4+1 ADS connections to an aircraft was raised; there was still no way, however, of differentiating between an ATS connection and an AOC connection with an ATS-type address. A summary of the Report is at Appendix G.

5.1.3 A query was raised as to the fate of the ADSP generated CNS/ATM Transition document. Mike confirmed that this point was still outstanding - the paper should have gone out as a State Letter, but was probably held up in the ICAO machinery. He would check with the ADSP Secretary, and report back as soon as possible.

5.2 Item 4.2 - Review Trials and Implementation Activities

5.2.1 Danny Van Roosbroek gave a verbal report of the Eurocontrol Project PETAL II. He specifically reported a successful meeting at Brussels and Maastricht of the PETAL Integration Team (PIT), composed of ATCs, airlines, FAA, ARINC and vendors representatives to agree on common operational specifications. Danny intended to report more fully at the next WG3 meeting, where a paper would be presented.

IP4 - US ATN Implementation Status

5.2.2 Jane Hamelink presented this IP on the FAA’s initial implementation of CPDLC in the USA. This was based on the File server concept with only two CM file servers for the 22 en-Route ATCCs. This initial system will not allow air initiation of the CPDLC application and will generate an abort where this is attempted. A limited set of four operational messages, supported by 12 CPDLC system messages will be used; the plan is to expand the system to oceanic operation with more CPDLC transactions at a later stage. The target start date is 2001.

5.2.3 Much discussion followed, with comparisons between the FAA and PETAL II implementations; Concerns were expressed on the subject of compatibility, SARPs compliance and Sub-setting rules. Whilst ground systems may choose a limited set of data link operations, the avionics community felt that they would have to bear the burden of carrying the complete installation from day one, with many of the messages not implemented for many years, perhaps.

5.2.4 However, the consensus of the meeting was that members welcomed both the PETAL II and the FAA implementations, agreeing with Paul Hennig that means had to be found to encourage airlines to fit the ATN equipment, and to develop benefits which would accrue to fitted aircraft.

IP3 - The IATA view of ATN Implementation Status

5.2.5 Paul Hennig presented this IP on the global ATN implementation status. The Paper was an advance copy of a presentation to be made to Global NavCom in Berlin later this month. The ATN implementation was to deal with the two main business issues: ACARS saturation and ATC major hub gridlock by 2005. Close co-operation between ATNSI of US and the Eurocontrol with PETAL II programme was evident. Detailed RRI (Router Reference Implementation) services interfaces and Programme schedule were also given.

5.2.6 The ATN implementation would be based on Doc 9705, as published. The aviation industry questioned the fact that not all airlines are going for ATN and how would the switching between ATN and ACARS be effected (bilingual aircraft?). This problem was recognised and that gateway for data link processing would be set in place such as ARINC Gateway Server.

5.2.7 Paul also indicated that although some of the work is being done under government or near-government contract, much of the work is self-funded, with the manufacturers expecting to sell ATN-related tools and software to participating airlines and ATC providers.

5.3 Item 4.3 - Briefing on Package 1 Maintenance, Potential Defect Reports and CCB Working

WP16 - SME 2 (Air/Ground Applications) Status Report

5.3.1 Frederic Picard presented this paper, providing a summary status of PDRs raised against Sub-Volume 2 (Air-Ground Applications) ATN SARPs after the CCB-7 meeting on Monday 28th September 1998. There were no unresolved PDRs outstanding. All PDRs are documented in the WP and are available on the CENA Server.

5.4 Post Package 1 Work

WP12 - Interoperability Issues for Air-Ground Data link Applications

5.4.1 This paper was presented by Danny Van Roosbroek. It summarised an investigation carried out by Eurocontrol into the issue of interworking between independently developed implementations of CNS/ATN-1 SARPs, highlighting the point that the multiple options available within the SARPs could cause major interoperability problems. The paper recommended, *inter alia*, that ATNP should develop a Protocol Implementation Conformance Statement proforma for each application. The paper gave examples. Extensive discussion followed, mainly due to the flexibility given in the SARPs with optional field and the consequential openness to “local” interpretation.

5.4.2 The paper referred to ‘subsets’, and Jane Hamelink pointed out that these were subsets of functionality, rather than subsets in the sense of Chapter eight of the SARPs. Mike Asbury also felt that more reference to the yet-to-be-published-but-commonly-available Guidance Material may have resolved some of the problems drawn out in the paper. Greg Saccone agreed that the development of a suitable PICS was a positive step towards interoperability - even transferring ASN.1 to a PICS format could be helpful. Pam Tupitza argued that PICS were useful to high differences between implementations. But Frederic Picard said that the paper was actually looking to the development of an Operational Service Implementation Conformance Service.

5.4.3 Danny thought that this was a second step - he thought that the technical PICS should be developed first. Regions could then take the high level PICS, and develop smaller PICS for specific

implementations to suite the Regions. Jane felt that more high level work would be needed, to define the subsets of functionality, and then the appropriate PICS could be developed. Paul Camus broadly agreed with Jane, but thought that this paper was most important. The procedures/services listed in the paper had been developed by the Eurocontrol ODIAC subgroup, and should be brought to ADSP at the earliest opportunity. He explained that aircraft have to form the 'bridge' between different regional operational implementations. He was brusquely dismissive of the ORs developed by ADSP, remarking that they were good for neither Europe or USA as they stood. This group should concentrate on the technical aspects - this would be the implementation in a real operational world.

5.4.4 Mike Asbury pointed out that the ADSP ORs had formed the foundation for the SARPs, and although these did not suite everybody, they were broadly accepted by the community. Danny said that ODIAC had already brought services to ADSP, some of which had been accepted, other having been sent back for amplification to a global environment or for clarification. He agreed with earlier speakers that Operational Requirements/Procedures came before the technical solutions. He thought that there were three levels to be considered in any interoperabilty problem - Procedures, Functions and Communications - this paper looked at cross-border Communications.

5.4.5 Jane thought that with reference to CPDLC specially, she could write PICS to chapter four, but she questioned whether this was really necessary. The paper had cited examples of uplink messages - it would have been better if downlink messages had been used as exemplars. In general an aircraft will have to process any message sent to it - but one needed to know whether a given ground installation actually processed a message, as distinct from merely replying to it. There had to be different levels of 'Mandatory', indicating 'Reply' or 'Processing and Replying'. A viable PICS needed an operational slant, not just a technical one which would mimic SARPs Chapter 4. Tony Kerr agreed totally with Jane - this was a good example of Static versus Dynamic conformance, in OSI terms.

5.4.6 Mike Asbury concluded the discussion on the paper by proposing that the Subgroups should look at possible means of developing PICS for their applications, what work would be needed, what benefits there would be from the development, and how there may be a need to break down operational versus technical functionality/subsets. Danny agreed that this would be a major step forward, and would provide appropriate effort for SG2 at their next meeting for this task. Mike also noted that there seemed to be an opinion that this paper, or a derivative of it, should be presented to ADSP - Danny agreed to consider this for the next but one ADSP round of meetings.

WP17 - Adding the METAR Service to the CNS/ATM-1 FIS Application

5.4.7 Frederic Picard presented this paper, which commented on the current description of the METAR service and identified the areas where further details were required to allow ATNP to start upgrading the FIS Application to support the METAR service. Some information was required from ADSP, including whether there was a strict METAR presentation format, and the need for accurate voice/data link compatibility.

5.4.8 Changes to the FIS SARPs to support the METAR service were also identified. The FIS application is such that major changes are limited to eight lines of the ASN.1, provided that the ATIS parameter range and resolution values are the same as that for ATIS

5.4.9 Frederic said that, since the changes involved using the effects of the extensibility markers, interoperability was assured, and the version number need not be changed to add the METAR functionality. This was questioned, and, although the meeting agreed that this might be true in the context of FIS (rather than ADS or CPDLC), the concept provoked considerable discussion on version compatibility, reported in some detail under Agenda Item 7.

5.4.10 Before taking the work any further, Frederic would have the paper presented at the next ADSP meeting, either by Mike Asbury or Jean Francois Grout. He wished to be sure that the operational requirements were tightly stipulated in order to avoid the multiple revisions that were needed for the ATIS service.

WP18 - Proposed CM Guidance Redlines

5.4.11 This paper, presented by Greg Saccone, clarified the changes to the Guidance Material arising from the acceptance of PDR 98090005 - (CM - Facility Designator User Requirements

Correction, see WP 16). The paper was straightforward, informative and was accepted without comment.

5.4.12 Since the Guidance Material had not been published yet, and the PDR would not be implemented until November 1999, this material would not be forwarded to ICAO just yet, since it could cause confusion. It would be passed to the CCB for co-ordination with the appropriate PDR.

WP19 - Proposed PDUs for Package-1 CM Server Considerations

5.4.13 Greg Saccone presented this paper. This discussed some options for additional PDUs to accommodate a more advanced CM server concept. In order to ensure standardisation of terms, he had offered definitions of 'CM Server' and 'Application Information'. Greg proposed this as a 'Package 2' implementation, since any attempt to achieve this using the current application could result in significant changes which could lead to accusations of destabilisation of the SARPs. However, full advantage would be taken of ASN.1 extensibility marker operation to preserve backward compatibility. Ahmed Alomari queried why there was a restriction on the use of update or server CM service when no dialogue existed. Gregg confirmed that only the Logon function performed version negotiation; so, unless the aircraft knew the ground CM version à priori, a regular Logon should be performed first before an update or CM server Logon were to be performed. For this reason version negotiation was not included in the CMServer procedures.

5.4.14 Some discussion followed as to the philosophy of this approach and to the actual beneficiaries; Danny Van Roosbroek reminded the meeting of his previous Papers on applying the same principle at application level (CPDLC); Danny was invited to re-submit his Papers (see below). Steve Van Trees advised the meeting to monitor the Security Group activities due to its potential effect on this topic. As no major comment was received, SG2 will proceed with its development and submit a proposal to the CCB to be followed by trials and validation.

WP14 - Data link Application Servers in Europe

5.4.6 Danny Van Roosebroek presented this paper, which had been presented previously to both the working group at the Rio meeting, and to the SG at its Lansing meeting. Copies of the relevant extracts of the notes of these meetings is attached at Appendix H for reference. The paper explored the concept of operating data link services through the use of data link application servers within Europe. The paper looked at the concept from a number of viewpoints, including technical, operational and financial. Mike Asbury apologised to Danny for not remembering the outcome of the earlier debates, and was grateful for his second presentation.

5.4.7 Greg Saccone said that any changes introduced in line with page 9 of the paper would change the whole way in which the dialogue service worked, and furthermore, the capability already existed, if that was what was required. Jane agreed, saying in addition that the proposed changes to D-START would not achieve what was wanted anyway. JY was against the concept in principle - this could lead to the development of SARPs for specific implementations, instead of the normal way, where specific implementations were based on generalised SARPs. He thought that the standards had been accepted, and they should not be changed to suit a particular implementation - what if another State or Organisation wanted a different implementation - this could become ridiculous, and lead to de-stabilisation of the SARPs. Danny disagreed that this was adapting SARPs to suite an implementation - he felt it was adding flexibility. But he was keen to see how the concept could be met using present procedures - he would take this off line with Greg. Hoang Tran asked that Greg's solution be put down on paper, and be presented to the next meeting. Greg agreed to produce a short paper for the Honolulu meeting.

5.4.8 Paul Camus said that for one thing there would need to be a redefinition of 'Facility designation'. In addition, we would need to look at the transfer of communications - and this would force the CAAs to revisit the concept of 'end-to-end' integrity - if the transport entity was in the server, there would be a sort of 'intermediate end'. Steve van Trees said that from the point of view of a certification, there was only one 'end-to-end' concept, and that was from the human finger at one end to the human eyeball at the other, however many paths/switching centres were involved.

5.4.9 Danny thanked the meeting for the wide-ranging discussion on the paper, and the views presented. He recognised the feeling of the meeting, but said that in the future, when possible

alternatives may be considered, he could dust the paper off, and say that it had been discussed thoroughly, and these were the opinions expressed.

WP20 - Backwards Compatibility Considerations

5.4.5 In this paper, prepared by Greg Saccone, an approach to modifying the CM protocol and user requirements in order to facilitate backward compatibility was mooted. This was to reduce the need for aircraft to carry multiple versions of CM. There was a good general discussion, but the general conclusion was that there would be no need for this to be implemented until there was a version 2 of CM flying, and since a maximum effort was being made to reduce technical changes to CM to a minimum, there might be no need for some time. This provoked some discussion on the role of the CCB - if it could be used as a repository for future requirements, or package 2 enhancements. Steve van Trees though that it could, but Tony Kerr pointed out that he would expect future enhancements to have to be approved by the ATNP/3 - he would not expect enhancements to go through the system in the same way as repairs and fixes. This was generally agreed - a better system would have to be found for coping with enhancements. This would be considered later under Agenda Item 7.

6. AGENDA ITEM 5 - GROUND-GROUND APPLICATIONS

6.1 Item 5.1 - Subgroup 1 Report

WP5 - WG3/SG1 Chairman Report

6.1.1 This paper was presented by Jean-Yves Piram who reported on the progress achieved by WG3/SG1 in its work programme since the 13th WG3 Meeting in Utrecht. There was nothing significant to report on ATSMHS. The main points on AIDC were the resolution of FAA submitted PDRs, backward compatibility issues on Extended ATS Message Service, two-level System Management and ATSMHS Security. Version negotiation is not really an issue as this was often dealt via bilateral agreement between ATSUs. On the CIDIN/ATN Gateway side, progress was reported on the Directory and the Monitoring of Validation and Implementation. Generally speaking this was a positive progress report which was gratefully accepted by the meeting.

6.2 Item 5.2 - Review Trials and Implementation Activities

IP5 - US FAA AIDC Implementation status report

6.2.1 Jim Moulton reported on this AIDC Implementation programme. The FAA is in the process of implementing and testing an AIDC implementation. The implementation of the AIDC protocol machine and of the message set was complete and commissioning was progressing. Testing will be based on the SARPs. The current prototype AIDC system is available for demonstration. The FAA is planning to test the AIDC System with other States, starting with Japan. Other States were welcome to participate.

6.2.2 Mike Asbury asked if Europe (specifically Eurocontrol) had any plans on AIDC work. Danny van Roosebroek said a project was in hand to port AIDC under an OLDI HMI, so that any change was transparent to the users. Lessons learnt with OLDI and applicable to AIDC were presently being assessed. Mike welcomed the sharing of experience on trials and prototyping as the subsequent validation would need a considerable degree of independence.

6.3 Item 5.3 - Briefing on Package 1 Maintenance, Potential Defect Reports and CCB working

WP22 - Status of Sub-Volume III PDRs since CCB7

6.3.1 This paper was in the standard SG1 reporting format, and was presented by Jean Marc Vacher. Most of PDRs raised against ATSMHS and AIDC had been resolved and for some the outcome will be included in Doc 9705 Amendment 1. Mike Asbury asked about the outstanding "forwarded" PDR. Jean Marc explained that the particular PDR related to a character set check of questionable value and the most reasonable and economical solution was being sought.

6.3.2 Mike was concerned that 'Forwarded' PDRs could well be forgotten. He suggested that all WGs and SGs chairmen should review the Forwarded PDRs pertaining to their area of responsibility as there appeared to be no statutory time limit on holding PDRs in this state.

6.4 Item 5.4 - Post Package 1 Work

WP21 - Operator's need for Ground-Ground Data Exchange between Airline Host Systems and State ATM Facilities

6.4.1 Paul Hennig presented this paper, prepared for another meeting by Kors van den Boogaarde. IATA proposed the development of ATN SARPs and Guidance Material for ATN to support existing data exchanges among ATS Providers and Operators, such as Flight Plan filing, NOTAMs, and AFTN free text. This would also anticipate new applications to enable trajectory negotiations, collaborative decision-making (CDM) and other traffic flow management applications. Whilst in sympathy with the content of the Paper, the Group questioned the appropriateness of such request within ATNP rather than ADSP as a first step to "sanction" the operational requirements.

6.4.2 Mike Asbury felt that to secure ICAO Administration support it was essential to have this task and the resources approved by the appropriate ICAO Operational first - this could be ADSP, or the new ATMCP. Paul said positively that the ICAO Secretariat (Masoud) had decided that identified applications could be brought directly to the ATNP. Concern was also expressed as to the possible dissipation of scarce resources in SG1 to new tasks before completing the ones allocated in the previous Panel meeting on time for the ATNP/3. Jean Yves Piram stated that the initial requirements in the paper were already catered for in the MHS Extended Services.

6.4.3 Mike said that the WG was not against the concept of the paper in principle, but both the ATNP and the ADSP secretariats had recently affirmed the need to adhere to 'proper' ICAO procedures - once clearance had been given by ICAO that ATNP could handle the requirements, WG would be only too glad to take it further. Paul agreed to seek clarification prior to the next meeting.

7. AGENDA ITEM 6 - UPPER LAYER COMMUNICATION SERVICE

7.1 Item 6.1 - Subgroup 3 Report

WP7 - ATNP/WG3/SG3 Progress Report

7.1.1 Steve Van Trees presented this paper, detailing the progress of the Working Group against its work programme, and outlining present and future deliverables. The SG had met once since the last WG 3 meeting - in Toulouse 9-10 September - and the report of this meeting was attached. In general meetings are attended by three or four stalwarts. There had been some revisions to this programme - the systems management work programme, with support from Tony Kerr, had been passed over wholesale to the Joint System Management Subgroup, currently chaired by Jim Moulton. The ASO-ACSE development was complete, and this should significantly reduce the need to develop any more material for the ITU-T. Steve reported that the two final deliverables for promised for this meeting were complete. Work on the Data Dictionary, also being carried out by Jim Moulton, would be presented to WG 1. The recommendation for WG3 to approve SG3 proposed Work Plan was accepted.

7.1.2 Mike Asbury questioned whether SG3 had given total handover of the System Management to Jim Moulton with the SG having no further responsibility. This was confirmed by Steve, who said that they were not now the lead on this topic.

WP26 - ITU-T SG7 Q.22 Activity Report

7.1.3 Steve van Trees presented this paper, which was one of the two final deliverables promised for this meeting (see para 7.1.1 above). Steve reported that this just about closes the need for ITU-T related work for ATN. The path was now clear for Package 2 applications to be developed without further recourse to ITU-T standards. As a point of interest, he noted that the ITU were well ahead of ICAO when it came to the publishing of electronic copies of their documentation. The meeting accepted the deliverable without further discussion.

WP27 - ATN Connectionless Upper Layer Communications Service

7.1.4 This set of proposed SARPs for the ATN Connectionless Upper Layer Communications Service was the latest to be produced by SG3 under its current work programme, and was the second deliverable promised in the SG3 report.

7.1.5 Paul Camus noted that the connectionless protocols seemed to be more AOC applicable than ATS. He asked whether we had the ICAO authority to develop solutions to non-ATS problems. Mike Asbury said that we were developing solutions which would enhance ATS communications flexibility, and if by chance they were of benefit to other members of the aeronautical community, well so be it. Paul protested that when he had indicated that AOC operators may have wanted to have access to ADS information, and when he had proposed a change to accommodate this, he had been rebuffed. Mike explained that an aircraft must have the space for at least four ATS connections at any one time - if Paul could persuade a manufacturer to build an application with more than five access points, then AOC could use the others, but four had to be available for ATS use at all times.

7.2 Item 6.2 - Review Trials and Implementation Activities

7.2.1 No papers had been submitted to WG3 on this agenda item, but the upper layers work was briefly outlined in Danny van Roosebroek's verbal presentation on PETAL II..

7.3 Item 6.3 - Briefing on Package 1 Maintenance, Potential Defect Reports and CCB Working

7.3.1 No papers had been submitted to WG3 on this agenda item, because, as Tony Kerr reported, there had been no PDRs or CCB based matters relating to the Upper Layers.

7.4 Item 6.4 - Post Package 1 Work

WP11 - Proposed ATN Upper Layer Naming and Addressing Extensions

7.4.1 Tony Kerr presented this paper, which described a number of proposed extensions to the Upper Layer naming and addressing provisions, to overcome some limitations identified for Package 2. This was a revision and updating of an earlier paper, presented at the 13th meeting of the WG. The proposed changes add flexibility to the ATN naming and addressing, allowing non ICAO users access, particularly to system management addresses, while still retaining backward compatibility.

7.4.2 There was some small confusion over the apparent different paths to the same 'Sys-id', arc, but Tony explained that this was the differentiation which allowed backward compatibility. The WG accepted the U/L enhancements to the naming tree for Package 2.

WP10: Specification for Generic ATN Communication Service (GACS)

7.4.3 Tony Kerr also presented this paper, which provided a specification and draft Guidance Material for a Generic ATN Communication Service (GACS). This was an update of the earlier paper presented at the 13th meeting. The GACS is seen as a simple open pipe communications service, allowing the use of connectionless or connection oriented protocols. It was developed to meet the need for a message transfer service which would support the requirements of various applications, regardless of the transfer characteristics of the messages. The intention of the document was to define a message transfer standard which would accommodate most aeronautical message applications (i.e. not just ATS). Tony pointed out that there were still some minor questions to be answered, but the specification was complete in all but name.

7.4.4 Paul Hennig enthused over the paper, which, he said, could greatly simplify multiple aeronautical communications requirements, including AOC. Mike Asbury asked what the current status of the work was. Danny Van Roosbroek said that Eurocontrol are going to validate the proposed specifications; they would be beneficial as part of the PHARE programme. They are in the process of selecting a contractor for the development of GACS software. The time scale are: Start of contract by end of October 98, Software delivery by February/March 99 and trials by August/September 99 hopefully for ATNP/3. Mike Asbury pointed out that, in view of the need to have

results for the Working Group of the Whole (at least 5 months prior to a formal ICAO Panel meeting), the proposed Eurocontrol timescale appeared somewhat optimistic. Also, whilst these proposal could be advantageous in catering for both AOC and ATC, it was unlikely that ICAO would extend their remit to non-ATS development.

7.4.5 Danny said that as far as ICAO were concerned, the GACS would be validated for ATS communications - validation for AOC could be done through Industry. Paul Hennig said that there was already precedent for an application to be validated by a Working Group of the Whole after a Panel Meeting (viz. Phuket) He appreciated the tight timescale and would welcome results as soon as practicable. He would look into the provision of support from IATA for the validation work.

7.4.6 The WG welcomed the rapid advances made by Eurocontrol in the preparation of this work, and looked forward to presentation of early results, commensurate with the proposed timescales.

8. AGENDA ITEM 7 – DOCUMENT TRACKING/VERSION CONTROL

8.1 There was extensive discussion on the definition and expected function of the version number in the SARPs and the problem of ensuring backward compatibility, particularly arising from Frederic Picard's comments relating to implementation of the METAR service in the future. Although it might be technically possible to implement a new service retaining backward compatibility, Paul Camus argued that a mechanism to identify the level of both the Operational and Technical capability was essential. The user should be able to tell what range of operational services were available. Jane Hamelink said that the construction of the FIS allowed identification of different operational capabilities by different names, but this was not the case in CPDLC or ADS, unless different operational capabilities were given different names, e.g. CP1, AD1. This would allow a name change to indicate a different operational capability, but if the version number remained the same, then they would be technically compatible.

8.2 Frederic agreed that there should be a change of version number with a change of technical capability. Steve van Trees suggested that if version numbers of the 'x.y' scheme was acceptable, then the 'x' could be the technical version, while the 'y' could indicate the operational status. Greg said that version numbers were integers in this build, and a change would be dramatic. Frederic said that there was no guidance from the ADSP to say whether operational/technical capability should be exchanged. Greg Saccone proposed that there should be no version number change if there was no ASE change, but he agreed that any change in service should be promulgated.

8.3 Mike Asbury said that this could be discussed all day, but there were a few points of agreement, namely that there should be a way of distinguishing between operational and technical changes, and technical intricacies were not necessarily a let out from a justifiable change of version numbers. He would ask Subgroup members to put version numbering/backward compatibility high on the list for their next meetings, and to try and come forward with a consolidated position - this might reduce 30 options to three.

WP4 - Report of the 13th Meeting of WG3 (Utrecht)

8.4 Mike Asbury said that the real reason for having this agenda item was to review the thoughts and actions arising from the report of Tony Kerr's paper to the Utrecht meeting. Tony had identified a problem with Package 1/Package 2 implementations and control. The meeting had also highlighted the problem concerning the handling of enhancements. Tony pointed out that enhancements were not the prerogative of the applications - the Upper Layers and the Internet also had potential upgrades being prepared. Mike pointed out that at the last Panel meeting, papers were focused through the Rapporteurs of the appropriate working groups, and since enhancements would be notified through papers presented to the Panel, perhaps this would be the best method for the next Panel meeting. Jean Yves Piram said that we would be unwise to come to any firm conclusion without seeking advice from Masoud, regarding the latest ICAO procedures. Mike agreed, saying that one of the `biggest disadvantages at this meeting has been the lack of Masoud's expertise. He would have to be consulted at the earliest opportunity.

8.5 Steve van Trees said that he saw enhancements as evolutionary - there was unlikely to be a new edition of Doc 9705 for some considerable time. He still saw the CCB as a control for enhancements - but this would depend on the workload of the SMEs, who as a bloc did not seem

wildly enthusiastic. There were basically two classes of deliverables for the Panel meeting - amendments to Doc 9705, and enhancements to the ATN operations. Paul Camus was not too keen on 'evolutionary' bit - he wanted to revert to the 'Package' concept, and there seemed to be a general consensus round the table for this. Jean Marc Vacher thought that there would be two non-coincidental cycles of Doc 9705 amendments - one for PDRs, controlled by the CCB and` the Secretariat, and one for enhancements, controlled by the Secretariat and the ANC.

8.6 Mike proposed that at present enhancements should be discussed in Subgroups, presented to the WG for discussion, amended as required, and stored within the Subgroups for final presentation and adoption by the WG at the final meeting prior to the Panel in 2000. The WG accepted this as a reasonable idea for the time being, pending future discussion with Masoud.

8.7 Since Tony Kerr has drawn attention an assortment of document problems in the first instance, Mike checked with him if he felt that at least some of his worries were being addressed. Tony agreed, but added that there were still some major problems outstanding, which he hoped would be addresses in the near future.

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

9.1 No papers were submitted under this agenda item

10. AGENDA ITEM 8 - ANY OTHER BUSINESS

WP9 - Proposed Amendments to the ATN Lexicon

10.1 Thomas Belitz presented this paper, in response to an action pressed upon him by the Chairman at the last meeting. The paper emphasised the need for clarification in the use of specific technical and operational terms. It was notes that the CAMAL contained a moderate lexicon, but there was a need for a more comprehensive and portable source of reference. Thomas felt that nothing would be lost by applying the principles already developed for the mature ADSP lexicon, not coincidentally also prepared by a German colleague. He outline the three proposed stages of maturity of a definition, with approval by default. Much of the discussion could be done by e-mail, and only the latest changes/additions would be brought to the attention of WG3.

10.2 The WG welcomed this well thought out paper - Thomas received strong encouragement to continue with the work, which was accepted as being extremely useful.

IP7 - Proposal With Respect To System Management

10.3 Thomas Schade of WG2, speaking on behalf of Klaus Platz, gave a very brief presentation to the combined WG2/WG3 meeting proposing a revision to the procedures for Systems Management work. The IP suggested that system management should revert to the responsibility of WG 1, and their should be a systems management task force, (whatever that meant), responsible to WG1; WG1 will seek to review the Utrecht decision on this topic.

10.4 In a subsequent short discussion, Mike Asbury thought that the real structure of the working groups should be a WG 1, with a management brief, and WGs 2 and 3 doing the majority of the work. He could not see the need for a Joint Working Group at all, and System Management should be delegated to a properly constituted Subgroup of WG 1. Jean Yves Piram generally agreed, and, since there was no dissent, this would be the WG3 position at the JWG meeting on 7th October.

IP1 - Development of the ATN SARP Electronic Library

10.5 Jack McConnell presented this paper, and associated demonstration to the WG. The demonstration was of a complex computer-based data base access exercise, funded by the FAA, allowing reference to any part of the SARPs very easily and rapidly. This was a very impressive tool, well demonstrated, and the WG were impressed. Several constructive suggestions were made as to how the tool could be improved in detail, taking account of the complexities of the ICAO documentation and editing. Hoang Tran said that at present the tool was for the use of the CAA, but

could be made available, depending on the ICAO intellectual Property Rights Rules, to other members of the WG, when it had been suitably refined.

10.6 Jack promised that an updated version of the tool would be available at the next meeting. Dr Cheng and his wife Cathy, who had in fact developed the programme, both warned of the law of diminishing returns regarding enhancements, although Jean Yves Piram said that there had been a quantum improvement since he had seen it about four weeks previously.

IP8 - AIDC Test effort

10.7 John X, normally attending WG2, presented this short information paper on the AIDC programme being developed by the FAA. The paper referred to a PC demonstration which was given by Jim Moulton after the paper presentation. This demonstration had been refined since it was last seen in Toulouse in September, and indicated the use of a specially designed graphical interface to display the messages. This was a proof of concept demonstration, which was welcomed by the WG.

DP1 - Draft Report of the 14th Meeting

10.5 The full draft report of the meeting will be made available on the CENA server by 31st October 1998.

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

WP23 - ATNP Working Groups' Meeting Honolulu

11.1 The next meeting of WG 3 will take place in Honolulu at the kind invitation of the FAA. The meeting will take place during the period 18 - 29 January 1999. The exact timetable for meetings will be published after the JWG meeting.

11.2 For the convenience of members, a possible full schedule of meetings is set out below -

WG 1 -	25 -27 January		
WG 1/SG2	25 - 27 January(am)		
WG 2	20 - 22 January	Joint WG2/WG3	20 January (1400 - 1530)
WG 3	19 - 22 January		
JWG	27 January (am only)		
JSG (SA)	27 January (pm) - 28 January		
CCB	18 January (pm)		

M J A Asbury
Rapporteur, WG 3

2 October 1998