AERONAUTICAL TELECOMMUNICATIONS NETWORK (ATN)

WG3 - (ATN Applications and Upper Layers) Fifteenth Meeting

Honolulu, Hawaii, USA

19 - 22 January 1999

Agenda Item 2: Review Draft report of the 14th meeting of WG3 (Bordeaux)

Draft Report - 14th Meeting of 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. Missing Appendices have been added

2. RECOMMENDATION

2.1 Members are recommended to review and accept the report.

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.   27 Working Papers (WP) and 8 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   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.

4.1.4   Danny noted that ADSP is developing global procedures.   There may be Regional differences, for example Europe requires a Logical Acknowledgement in CPDLC procedures, while USA does not. He asked how ADSP would deal with global airborne vs. Regional ground aspects. Mike said that ADSP generrlly looked at global matters, with Regional variations being taken care of through Regional Supplementary Procedures (e.g. Doc 7030).   Danny also queried whether the PANS-RAC procedures are detailed enough for direct application in Regions, and Mike replied that in general some parts need Regional development.

4.1.5   Danny gave an example pertaining to CPDLC message elements, which showed that implementors need to be aware of the contents of ADSP documents, and that there was a potential overlap with the User Requirements chapters of the air-ground application SARPs. Mike agreed that we would expect system designers to take account of all relevant documentation, including Annex 11 and Doc 4444.

4.1.6   Danny observed that we seem to be lacking a process to handle system engineering questions. ATNP standardises up to OSI layer 7, ADSP deals with procedures, and there is no Panel defining standards for FMS and FDPS systems. Mike pointed out that the new ATM Panel may help to fill the gap, and ATNP does not specify implementations. Danny cited the example of PETAL-II specifications. These reference Docs 9705 and 4444, but also found it necessary to develop "service specifications".   They contain operational requirements and refer to SARPs but also contain additional requirements which are not globally defined by ICAO.   There are gaps in the standards. Mike suggested that the relevant parts of PETAL-II or similar specifications should be brought before the Working Group as examples. Jane agreed that if there are global, long-term requirements in the PETAL-II specifications then these should be added to the ADSP documents.

4.1.7   Danny emphasised that systems are being built right now.   Aircraft will soon be flying operational systems. He agreed to take an action to liase with his ADSP member to ensure that global, long-term procedures are presented to ADSP. Long-term was clarified as meaning 10 years or longer.

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 PDRs 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 of the CONOPS 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 B 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 seemed 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, 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, but would be meeting the following week.

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 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 and ATS routing domain. 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 servers for the 22 en-Route ARTCCs. 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 other operational domains 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 could 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 (PICS) 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 8 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 highlight 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 were too generic. 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 4 (ASN.1), 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 technically decode 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 technical as distinct from operational processing. 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 identical voice/data link message contents.

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 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, and the protocol (SARPs chapter 5) is identical, interoperability was assured. Thus 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 the use of version numbers, 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 and the message formats 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 Designation 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 the CM server update service when no dialogue existed. Greg confirmed that only the Logon function performed version negotiation; so, unless the aircraft knew the ground CM version à priori, a normal 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. In addition, Greg was asked, and agreed, to present an updated version of this paper to the next meeting of the Working Group.

WP14 - Data link Application Servers in Europe

5.4.15 Danny Van Roosbroek presented this paper, which had been presented previously to both the working group at the Rio meeting, and to SG2 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.

5.4.16 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 to specify a facility in the CPDLC start user data 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. Jean Yves was against the concept of changing the SARPs for this purpose - 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 suit an implementation - he felt it was adding flexibility. But he was keen to see how the concept could be met using present technical capability - 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.

5.4.17 Paul Camus said that 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.

5.4.18 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

5.4.19 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 keep technical changes to CM to a minimum, there might be no need for some time. A PDR on this topic would be presented to the CCB at its next meeting.

5.4.20 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 thought 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 CCB activities. The main points on AIDC were the resolution of FAA submitted PDRs. There had been work on backward compatibility issues on Extended ATS Message Service, two-level System Management and ATSMHS Security. AIDC version negotiation is not really an issue as this was typically dealt via bilateral agreement between ATSUs. On the CIDIN/ATN Gateway side, progress was reported, and also on the Directory. Finally, the Monitoring of Validation and Implementation has been continued. 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 Roosbroek 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 IATA-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 ATSMHS basic ATS message services. He added that new major requirements such as AFTN would be better submitted in Panel meetings, for inclusion in a further work programme.

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. 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 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 its 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 five 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 Roosbroek'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 previously submitted PDRs or CCB based matters relating to the Upper Layers. However, a U/L PDR had been submitted at short notice, and the CCB had dealt with it completely at its meeting on the 28th September.

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. Jean Yves Piram pointed out that two ground message transfer standards have already been defined in existing ATSMHS SARPs.

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, where the changes involved adding new services, 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 the current version numbering scheme could achieve the same thing. Frederic said that there was no guidance from the ADSP to say whether operational/technical capability should be exchanged: he 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 about the idea. 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 addressed 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 noted 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 there 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 Ching 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 an earlier version of the demonstration about four weeks previously.

IP8 - AIDC Test effort

10.7   John Antonucci, 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, the agreed WG1/2/3 full schedule of meetings is set out below -

WG 1 -	25 -27 January	WG1/2/3 Co-ord Mtg	27 January (am)
WG 1/SG2	27(pm) - 29 (am) January		
JSG (SM)	27 (pm) January - 28 January		
CCB	18 January (pm)		
WG 2	19 - 22 January	Combined WG2/WG3	19 January (1400 - 1530)
WG 3	**19 - 22 January**	**Combined WG2/WG3**	**19 January (1400 - 1530)**
WG3/SG1	25 - 27 (am) January		

M J A Asbury
Rapporteur, WG 3

2 October 1998

ATNP WORKING GROUP 3 - FOURTEENTH MEETING

29 September - 2 October 1998

Bordeaux, France

AGENDA

1. Review/approve meeting agenda

2. Review report of the 13th meeting of WG3 (Utrecht)

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 Joint System Management SG (J Moulton)
   3.5 Security SG (S van Tree/M Bigelow)
   3.6 Other ATNP WGs

4. Air-Ground Applications

   4.1 Subgroup 2 report (M J Asbury)
   4.2 Review Trials and Implementation Activities
   4.3 Briefing on Package 1 maintenance, 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. Document Tracking/Version Control (PLEASE NOTE THE ACTIONS FOR THIS ITEM ARISING FROM WP3/13_08 AT UTRECHT)

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

9. Any other business

10. Date and Place of Next Meeting (Honolulu)

ATNP WG3 - Fourteenth Meeting - Bordeaux, France - 29 September - 2 October 1998

LIST OF WORKING, INFORMATION and DISCUSSION PAPERS

Paper Number	Agenda Item	Presenter	Title
W3/14-WP1	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 13th Meeting, Utrecht
05	5	J Y Piram	Report of WG3 SG1 (Ground/Ground Applications)
06	4	M Asbury	Report of WG3 SG2 (Air/Ground Applications)
07	6	S Van Tree	Report of WG3 SG3 (Upper Layers Architecture)
08		P Hennig	Selection of ATN Cryptographic Algorithm
09	9	T. Belitz	Proposed Amendment to the ATN Lexicon
10	6	T Kerr	Specification for Generic ATN Communication Service (SG3)
11	6	T Kerr	Proposed ATN Upper Layer Naming and Addressing Extensions (SG3)
12	4	D. Van Roosbroek	Interoperability/Issues for Air Ground Data Link Applications
13		J. Moulton	Preliminary Draft version 1.0 ATN System Management Concepts of Operations
14	4	D. Van Roosbroek	Data Link Application Services in Europe
15		S. Van Trees	CCB Chairman's Report
16	4.3	F Picard	SME2 (Air-Ground ATN Applications) Status Report
17	4.4	F. Picard	Adding the METAR Service to the CNS/ATM-1 FIS Application
18	4.3	G. Saccone	Proposed CM Guidance Redlines
19	4.4	G. Saccone	Proposed PDUs for Package 2 CM Server Considerations
20	4.4	G. Saccone	Backwards Compatibility Considerations
21	5.4	P. Hennig	IATA Ground-Ground Requirements
22	5.3	J.-M. Vacher	Status of Sub Volume III PDRs
23	10	R. Jones	Honolulu Arrangement
24	3.5	G. Mittaux-Biron	Secured ATN Dialogue Service
25	7	M. Bigelow	WG1 SG2 Chairman Report
26		S. Van Trees	ITU-T SG7 Report
27		S. Van Trees	Connectionless Upper Layer Communication Service
W3/14-IP01		R Jones	Development of the ATN SARP Electronic Library
02	4.3	F. Picard	Proposed change pages for ICAO 9705/Am1 SV2
03	4.2	P. Hennig	ATN Implementation Status
04	4.2	J Hamelink	US ATN Implementation Status
05	5.2	J. Moulton	US FAA AIDC Implementation Status Report
06		J. Moulton	Joint Sub Group on System Management Status Report
07		T. Belitz	Proposal with respect to Systems Management
08		USA	AIDC Test Effort
W3/14-DP1	9		Draft WG3 14th Meeting Report from Bordeaux

Appendix C

ATNP WG3 FOURTEENTH MEETING - Bordeaux, 29 September - 2 Oct. 1998

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

1.   The 13th meeting of the ICAO ATNP Working Group 3 was held in the Holiday Inn, Utrecht, Holland, from 29 June until 2 July 1998. The meeting was chaired by the WG3 Rapporteur, Mike Asbury, and was attended by some 33 Members from 14 States and 5 International Organisations. 23 Working papers and 7 Information Papers were presented.

2.   Members were briefed on the work of relevant meetings. The notes of the 12th meeting were approved, and are available on the CENA server.

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

4   ICAO Update. The Manual of Technical Provisions for ATN (Doc 9705) would be published at the end of August, in time for the issue of Amendment 73 to ICAO Annex 10. A hard or soft copy was now available for internal ATNP usage only, as ICAO intended to make it a saleable document, and so would not want it to be made openly available, e.g. displayed on a 'Web' Site. The Guidance Material (GM) was being processed, but was being fully editorialised according to ICAO practice rather than being accepted almost directly from a panel working group, as was Doc 9705. ATNP/3 would now be held in February 2000.

5.   System Management (SM).   A subgroup of the Joint Working Group of the ATNP (JWG) had been created at the Rio de Janeiro series of meetings. The Chairman of the new SM joint subgroup (JSG) outlined their 'concept of operations' (CONOPS) meeting prior to the next Bordeaux meeting in September. There was a need to decide whether their output would be SARPS or GM.

6.   Security. Core material on security was being developed for Annex 10 and Doc 9705 and consolidated material would be entered into the GM, repeated as necessary in other documentation.

7.   Subgroups 1, 2 and 3 reported on work done and work in progress. SG1 had worked on their two main ground/ground communication applications. State tables had been updated for inclusion in Doc 9705. SM had been investigated for cross-domain only, and SARPs will be provided for a minimum set of management functionality.   SG1 was addressing issues regarding AFTN for connections to Service Provider Networks. SG2 had identified the need for a formal GM amendment process. There needed to be clarification with ADSP regarding operational requirements, and had commenced work on SM issues. Future work would include assessment of CPDLC activities with regard to message capability, how to deal with redundant messages and development of new procedures. SG3 was working on specialised applications functions, post the Doc 9705 era, covering security, SM, multicast and a generic ATN communications service (GACS). In addition there was ongoing maintenance of SARPs including enhancements, i.e. secure dialogue, connectionless multicastand the Data Dictionary Compendium. SG3 submitted a draft ATN SM provision for inclusion as Subvolume 6 of the SARPs.

8.   The members considered Version Control issues. This whole topic warranted an agenda item at the next WG3 meeting to enable even fuller discussion on the 'whens, wheres and hows' of version/edition numbers. The meeting was warned that ICAO have 'tried and trusted' methods for documentation control despite what members may desire to be the case.

9.   The next meeting will take place in Bordeaux from Tuesday 29 September to Friday 2 October inclusive.

M J A Asbury Chairman, ATNP WG3

BRIEF REPORT OF THE ADSP WORKING GROUP (WG) A TASK FORCE (TF), WASHINGTON, 17 - 21 SEPTEMBER 1998

1.   The ADSP Working Group A Task Force (TF) met in Washington DC, the main objectives of the meeting being the preparation of papers proposing amendments to PANS/RAC (Doc 4444) and Annex 11 relating to ADS, taking into account input to the previous London and Atlanta WG A meetings. These papers were to be available for the next WG A meeting in Madrid in September.

2.   UK, USA, Australia, Canada and IFATCA were represented on the TF, which was chaired by Mike Asbury, UK NATS. Apologies were received from EUROCONTROL, IATA, Spain and France. Although this was basically an ADSP WG meeting, it was supported by RGCSP members, who had provided major input.

3.   It was agreed that there would be two target deliverables - proposed amendments for PANS/RAC (Doc 4444), and proposed amendments for Annex 11 - and that these should be consistent. The TF would look to Secretariat support from ICAO as the means to make the information available to the other panels.

4.   TF members were unhappy about scattering ADS procedures throughout the document. ADS should form a separate Part in PANS/RAC - Part XII.   RGCSP, in their submission to the TF, had chosen to model the ADS format on Part VI - Radar Services: although several members of the TF felt that this whole part required severe editing, they agreed that in order to help the Secretariat and facilitate acceptance of the amendments, replication of an existing format, however inappropriate, would be more acceptable than initiating a new look to the information presented. The proposed new Part XII would take the overall form of Part VI.

5.   This report will not detail all the discussion which took place - suffice to say that there was robust and healthy discussion on all aspects, and, with some compromise, consensus was achieved on all points. As a guiding principle, the TF agreed that ADS information would be expected to be displayed to the controller on some form of situational display, with textual display capability, and a note to this effect was inserted at the beginning of the Part.

6.   Although the RGCSP paper was the basis of the work, significant other material had been submitted to the TF for consideration, and this was also taken into account during the preparation of the final proposed amendment to PANS/RAC. This included a revised version of Appendix D to the Report of the WG A London meeting, prepared in revised tabular form by the FAA, and material extracted from the South Pacific Operations Manual.

7.   IFATCA emphasised that there were many countries which only use PANS/RAC as their ATC Manual. Some members were very surprised at the concept of States implementing ADS with no documentation at all other than PANS/RAC to provide guidance. This meant that much material would have to be included may well be superfluous, outmoded and outdated, thus over-ruling any chance for Part XII to be seen as restyled and updated material. This would allow PANS./RAC to continue to be the basic level ATC primary document for global use.

8.   The updated and amended version of Annex 11, applicable as of 5th November 1998, had been scanned into soft copy by NATS at the last WG A meeting in London. An initial pass through this indicated that there was only one small change to be done relating to ADS.

9.   Concluding, the TF agreed that the final outcome of this meeting would be a report of the meeting (to be circulated to TF members, the ICAO Secretariat and all other interested parties), a paper outlining proposed amendments to PANS/RAC (PANS/RAC), and a note from the Chairman regarding Annex 11 amendments.

M J A Asbury, Chairman, ADSP WG A TF - 22 August 1998

BRIEF NOTES OF THE MEETING OF THE AUTOMATIC DEPENDENT SURVEILLANCE PANEL WORKING GROUP B DRAFTING GROUP, WASHINGTON, 21 - 24 SEPTEMBER 1998

1.   The meeting of the WG A Drafting Group (DG) was organised by the FAA, and was held in the offices of the Crown Communications Corporation, Washington DC. The meeting was chaired by Jean Francois Grout, and attended by representatives from USA, UK, France, IATA, and IFATCA. The IATA representative was an ex-ATCO, and contributed very usefully to the ground service provider element of the discussions.

2.   The objective of the meeting was to agree a draft of a new chapter to the ICAO Doc 4444 (Procedures for Air Navigation - Rules of the Air (PANS/RAC)) relating to Controller Pilot Data Link Communication (CPDLC). This draft had to be prepared before the next meeting of the ADSP WG B (Madrid, October 1998), so as to allow adequate time for the proposed amendment to Doc 4444 to go through the full ICAO machinery prior to being presented at the 5th Meeting of the ADS Panel (ADSP/5) in November 1999.

3.   A working draft, outlining the proposed structure, format and content of the document had been prepared by the Chairman during and after the last ADSP WG B meeting (London, June 1998, reported earlier), and had been circulated for comment. Some six other Working Papers were submitted to the meeting, largely consisting of written comment to the proposed draft. These were taken into account during the discussion.

4.   The general line taken by the DG was to ensure that only appropriate rules and procedures should be included, that in general any CPDLC procedures developed by/on behalf of ICAO should not countermand established international operating principles, and that any proposed new procedures should not enforce a *modus operandi* on States or International Organisations in the future which may be counter to any proposed plan.

5.   The data link procedures developed had also to be consistent with the current voice communications procedures already described in PANS-RAC - this did not mean that procedures had to be duplicated, but that if voice had to be used in the event of sudden data link failure, or to clarify a situation, reversion to voice at any stage would not cause either the pilot or controller to have to materially change their line of thought.

6.   Descriptive material was kept to a minimum, since much of this was available in the Manual of ATS Data Link Applications, Doc 9694. However, the DG was made aware most strongly that there were many States where additional explanatory material was not available to the controllers, and that Doc 4444 was their bible and sole ATC reference. Consequently some outline descriptions of modes of operation were included, mostly as notes. In addition, where it was seen to be necessary, examples were included.

7.   To help members of ADSP WG B who were not at the DG meeting, reference notes were added to virtually all paragraphs indicating why they had been included, and whether they were new text, or sourced from another ICAO document, e.g. Annex 10 or 11. Reference notes will be removed when the paper is published as a proposed amendment to Doc 4444, and presented to ADSP/5.

8.   In addition, material for incorporation into Procedures for Air Navigation - Aircraft Operations (PANS-OPS), Doc xxxxx was also prepared. Since CPDLC is a two-way communications system, it was very important that both sets of pilot and controller communications operations were consistent to the extent possible, bearing in mind their separate tasks and responsibilities.

9.   The final output of the DG meeting will be presented to the ADSP WG B by the Chairman, who will then be responsible for noting the comments of the WG, amending the draft accordingly, and preparing in a suitable format for presentation to the next WG B meeting (February '99) for approval. *M J A Asbury , UK Delegate to ADSP*

BRIEF NOTES OF THE 18TH MEETING OF ATNP WG3/SG2, TOULOUSE, 1-4 SEPTEMBER 1998

1.   The 18th Meeting of the ATNP WG3/SG2 (Air/Ground Applications) was held in the headquarters of STNA, Toulouse from 1-4 September 1998, chaired by the UK member. Five members attended, and 10 papers were presented. Apologies were received from two members.

2.   Actions from the 17th meeting were reviewed. Potential Defect Report (PDR) actions had been taken, and they had been submitted to the latest Configuration Control Board (CCB) meeting. Discrepancies between ICAO documents material submitted by the SG still continue to arise, with no traceability or explanation from the appropriate ICAO Secretariats. The SG would continue to press for visible document control, with the change sources identified.

3.   At the 13th Meeting of ATNP WG3, Utrecht, the discussion relating to Security seemed to indicate that there was little evidence of a significant operational requirement input from ADSP. ADSP should be consulted, regarding who was responsible for determining how much security was 'enough'.

4.   The ADSP WG A and WG B Meetings held in London had prepared material for ICAO documentation, e.g. Annexes and Doc 4444. A new ADS-related chapter had been drafted for Doc 4444. WG B had considered future DFIS services, such as METAR and TAF.

5.   Regarding the implementation of a possible subset of the CPDLC message set, it was generally reconfirmed that subsetting rules applied to functionality, rather than individual selections from the message set. For a system to be SARPs compliant, all messages had to be recognised, and a least a 'Service not supported' reply should be given. The question of which messages were implemented and the sort of service to be provided was a matter for service end user/providers.

6.   New PDRs were reviewed. The CCB has a changed policy. Previously, the policy was that unresolved PDRs would be forwarded for Package 2 action. Now PDRs can be accepted, with implementation put off until the next amendment.

7.   It was reported that some trials and initial implementations will use the Phuket version of the SARPs - Version 1.1 - while others will use Version 2.3, as published in Doc 9705. This could lead to interoperability problems. The SG generally would make the strongest recommendation that trials and implementations were based on the latest versions of the SARPs - i.e. Doc 9705.

8.   Co-incidentally, the ATNP Joint Subgroup (JSG) dealing with System Management aspects of the SARPs was also meeting in Toulouse An opportunity was taken to have a joint meeting on system management matters. There would be a need for political and bilateral agreements - this could be an input into ATNP/3.

9.   The SG started to review possible updates for a potential CM for Package 2 taking account of the file-server concept, and possibly involving security.   It was suggested that security implement-ation was some way down the line anyway, certainly beyond ATNP/3, although current work indicated that it would be possible to introduce some elements of security between ATNP/3 and 4.

10.   All CPDLC proposed message changes had been implemented - there were probably too many messages already, and any trend in Package 2 should be towards a reduction in messages, rather than any addition. Although it had been proposed that there should be some message priority in CPDLC, the SG would fight any proposed prioritisation most strongly. With regards to future DFIS, the SG did not propose to take any action at all until all parameters, operating requirements and procedures had been formally agreed - and if this meant waiting till after ATNP/3 and or ADSP/5, then so be it.

11.   The next meeting will be held in USA from 8 - 11 December 1998. Ms Hamelink will make arrangements, and notify the SG members as soon as possible

Extracts from Notes of earlier SG2 and WG3 meetings related to WP 14 - 'Data link Application Servers in Europe'

From WG3, 12th Meeting, Rio

WP312-18 - Data Link Application Servers in Europe

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

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

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

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

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From SG2 - 17th Meeting, Lansing

'5.1.1   Tim Maude presented WP 8 (Data link Application Servers in Europe), drawn up in answer to the question posed by Eurocontrol 'What if we put a server in the system'. It was an exploratory paper, investigating whether the server concept would work with existing SARPs and what were the benefits. There were benefits arising from a simpler transfer of control between centres and for the potential to have simple systems. However, there would need to be a higher level of intelligence in the server. Paul Camus said that this concept raised questions relating to key features of the ATN. He felt that the proposal violated the key concept of ATN, which is an end to end integrity - it was almost going back to the ACARS central router concept. A common NSAP for various applications may jeopardise integrity. He felt there needed to be a deeper investigation into this problem. It may be advantageous to small sector European environments, but integrity was the problem.   Tim emphasised that this was not a proposal, but was an investigation, on behalf of Eurocontrol. Jane Hamelink said conceptually it was not a major problem. Tim pointed out that it was analogous to air traffic control centre operations..

5.1.2   Paul was not happy about this proposed extension to CM. A proper cockpit interface would have to be developed - crew communications were affected by ground communications. He was not opposed to the reductions of effort in the humans - he was more worried about the technical implications. He thought it would affect individual application addressing. He wondered whether ICAO would formally define an objective that Package 2 will be backward compatible. We should warn industry that future functions will impact backward compatibility. Gregg Anderson (FAA) said we should not write a SARP for a Server. He agreed there was an issue concerning routing. Paul asked how other states were doing this? Gregg Anderson and Greg Saccone says that US/Canada are doing it anyway. Pam Tupitza said this was similar to routing plans in system management.

5.1.3   The SG understood the need for a server, but generally thought that this would be Package 2 work. However, they were worried by 'requirements creep', whereby the requirements for so called Package 2 were being suggested for implementation in the current Package 1, under the guise of commercial or technical pressure with operating cost-benefits

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BRIEF REPORT OF THE 14TH MEETING OF THE ATNP WORKING GROUP 3 (WG3) - (APPLI-CATIONS AND UPPER LAYERS), BORDEAUX, FRANCE, 29 SEPTEMBER - 2 OCTOBER 1998

1.   The 14th meeting ATNP WG 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. A total of 35 Working Papers and Information Papers were presented. A half-day combined meeting with WG2 took place, covering elements of system management and secure communications messaging.

2.   All three WG3 Subgroups, with work programmes covering preparation and development of Standards and Recommended Practices (SARPs) for Ground/ground applications, Air/ground applications and Upper Layers protocols, had met once since the last WG3 meeting. Standards were being refined in line with developing implementations   There was a need for the WG and Subgroups to focus on what was needed for Systems Management (SM) techniques. A first draft of the Concept of Operations (CONOPS) had now been prepared. The question of shared management information was very political. Implementation of System Management into aircraft avionics was critical, and there was a strong need to be able to define aircraft requirements as soon as possible.

3.   The WG3 had identified a number of high level security requirements for user authentication. There appeared to be no requirement for message data encryption, but essential requirements included the need to minimise disturbance to the applications themselves, and to maintain backward compatibility. The ICAO operational requirement was for positive identification of the end users; authentication was an ATNP proposed solution. IATA positively agreed with the ATNP proposals.

4.   An investigation carried out by Eurocontrol into the issue of interworking between independently developed implementations of CNS/ATN-1 SARPs, highlighted the point that the multiple options available within the SARPs could cause major interoperability problems. It was recommended that ATNP should develop a Protocol Implementation Conformance Statement (PICS) proforma for each application. WG3 agreed that the Subgroups should look at possible means of developing PICS for their applications

5.   Several proposals for enhancements to the SARPs were proposed. In general the WG would expect future enhancements to have to be approved by the ATNP/3. Overall, the WG agreed that at present enhancements should generally be developed 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 advice from ICAO.

6.   There was extensive discussion on the definition and expected function of the version number in the SARPs and the problem of ensuring backward compatibility in the future. A mechanism to identify the level of both the Operational and Technical capability was essential, such that the user should be able to tell what range of operational services were available. The WG agreed that there should be a way of distinguishing between operational and technical changes. Subgroups would develop version numbering/backward procedures at their next meetings, and come forward with a consolidated position to the next WG3 meeting.

7.   The WG had been made aware of proposed revisions to the procedures for Systems Management work. The WG had voiced strong disapproval of the Joint Systems Subgroup concept at the Rio meeting, believing that the real structure of the working groups should be a WG 1, with a management brief, and WGs 2 and 3 carrying out specific technical work programmes. System Management should be delegated to a properly constituted Subgroup of WG 1. This would be the WG position at the Joint Working Group the follwing week.

8.   The next meeting of WG 3 will be held in Honolulu from 19 - 22 January, hosted by the FAA.