AERONAUTICAL TELECOMMUNICATIONS NETWORK PANEL
Toulouse , France
13.3.95-17.3.95

ATN Internet Working Group 2 (WG2)

Third Meeting Report

Issue 1.0

1. Agenda Item 0 Meeting Organisational Issues

At the initial ATNP-1 meeting held in Montreal 8-21 June 94, three working groups were created in order to further the work of the panel. This is a report of the third meeting of Working Group 2 (WG2) of the ATNP which took place in Toulouse, France in the period 13th - 17th March 1995.

25 experts from 9 countries and 4 international organisations attended the meeting. The list of attendees is attached to this report as Appendix A. The list of papers submitted for WG2 consideration at this meeting is attached to this report as Appendix B.

2. Agenda Item 1 Approval of Agenda and Objectives

Mr. Sharma, Rapporteur of WG2 opened the meeting and drew the participants attention to the working papers that had been prepared for the meeting and, in particular, to WP/73 comprising the agenda, a list of all working papers, their assignment to agenda items, a list of meeting objectives, and a proposed schedule for the meeting. This had been prepared by Mr. Sharma in advance of the meeting.

The agenda and schedule were approved with some minor re-organisation with respect to WP allocation to Agenda Items and is at Appendic C.

The report of the Melbourne WG2 meeting was accepted without comment.

3. Agenda Item 2 - Report on Progress on WG2 Deliverables/Actions

The update on progress on assigned deliverables/actions is documented in the table in Appendix I.

4. Report of the Joint WG2/WG3 Informal Meeting of Monday Afternoon

As a result of Flimsy#2 produced at the Melbourne meeting, which was discussed at a Eurocontrol coordination meeting it became apparent that a joint WG2/WG3 coordination meeting on QOS/Security/Priority issue was needed. The opportunity to hold some initial discussions (at CENA) between members of WGs 2 & 3 on Monday afternoon arose due to the fact that the conference facilities were not available for that time in the Hotel. Discussion was based on WP/81 which was developed and presented by Eurocontrol. *(The notes of this meeting were subsequently made available as WP/114).*

The main conclusion of this informal joint session was that a) WG2 need to describe the type of service it can provide to its transport service users, and b) document the type of requirements it expects from WG3. Mr. Sharma proposed to set up a small group in charge of discussing these matters with the interested WG3 participants and report back later during the meeting.

5. Agenda 3 - Review of WG2 Work Plan

WP/74 was presented by Mr. Sharma. This Working Paper contained a proposal to expedite the development of the CNS/ATM-1 Package SARPs and Guidance Material. The paper noted that potentially a significant number of changes were necessary to the baseline SARPs (CNS/ATM-1 Package requirements to be agreed at this meeting, changes to exclude CNS/ATM- 1 requirements and editorial changes). The paper questioned the viability of implementing these changes via the CCB process in a timely manner and consequently proposed the creation of an "CNS/ATM-1 Internet SARPs Editorial Committee" (CISEC) which would be tasked with developing an overall CP implementing all the changes referred to above for submission to the CCB in October.

The Working Group generally supported the proposals in WP/74. The initial proposed date in WP/74 (October) was considered to be too late to meet the objectives of the Panel. A closer

date (June) was proposed although not agreed before clear decision is taken with respect to the scope of the work to be done.

Concerns were raised about the level of changes that will result from the proposed editorial committee. Mr. Sharma indicated that this work was not meant to invent new requirements but to perform the necessary editorial work required to reach the acceptable level for SARPs publication. It was therefore agreed that, contrary to the proposal in WP/74, the CCB should not be 'suspended' since any technical changes may arise which would be required to be submitted to the CCB.

The Working Group agreed to revisit the proposals contained in WP/74 following completion of Agenda Items 5 & 6 and to make a decision about further progression of the work taking into account the results of discussion on CNS/ATM-1 architectural issues which were to be dealt with by these Agenda Items.

WP/110 was presented by Mr. W. Link. The Defect Report contained in that WP was submitted in order to formally scope the changes required for progression of the CNS/ATM-1 Package SARPs and Guidance Material from the current baseline 'end-state' draft SARPs. It was noted that this DR was initially agreed to be a Change Request at the Melbourne WG. The Working Group agreed to revisit the WP together with WP/74.

6. Agenda 4 - Review of CCB Recommendations

WP/109 was presented by Mr. W. Link. This paper reported on the CCB work achieved since WG2/2 meeting. DR51 and CP15 were summarised by Mr. Whyman and Mr. Crenais for the purpose of the discussion. Based on these, the Working Group accepted the WP/109 recommendation to endorse the CCB decisions.

DR51 was submitted in response to Action 2/48. Mr. Sharma invited the Working Group to consider the proposed Change Proposal attached to this DR (in reference to Action 2/49). The Working Group agreed to wait for simulation results before giving an ACCEPTED status to this Change Proposal and agreed that the CCB should assign a PENDING status in the mean time. It was noted that the US were validating the change proposed and that Eurocontrol also planned to do so. These results should be available in the June timeframe. It was noted that this CP would require a change to the NSAP address content.

It was agreed that the Change Proposal should be submitted and progressed by the CCB to a PENDING state.

ACTION 3/1 - EUROCONTROL - SUBMIT CHANGE PROPOSAL BASED ON DRAFT PROPOSAL ATTACHED TO DR95010051

Mr. Sharma requested an update on current CCB membership. It was noted that Mr. Crocker and Mr. Oliveau have withdrawn from the CCB. Mr. Sharma has suspended his membership until end of April. The current membership of the CCB is as follows: US, France(2), EUROCONTROL, SITA, Germany.

WP/91, the ATNP CCB Procedures document, was presented by Mr. Link. This document resulted from the Melbourne decision to have a separation between CCB general procedures and the Configuration Management procedures. The latter document was initially foreseen as WP/99 but will be available at a later date (action 2/37).

Mr. Crenais reported on the status of the CM automation work. The automation of CCB procedures on the Validation Archive has been implemented and is currently under test. The new procedures as described in WP/91 will be in effect after this meeting. A message will be sent on atn-internet-technical list to announce it.

ACTION 3/2 - FRANCE - SEND MESSAGE TO TECHNICAL LIST ANNOUNCING OPERATION OF NEW PROCEDURES

7. Agenda 5 - Development of Internet SARPs and Guidance Material for CNS/ATM-1 Package - Agenda 5.1 - CNS/ATM-1 Internet Operational Requirements

WP/77 was presented by Mr. Crocker. The US Operational Requirements contained in the document were reviewed by the Working Group:

1 Agreed
2 Agreed
This resulted in a discussion about the meaning of this requirement for implementors (i.e. does priority come into play as soon as queue size > 1?).

ACTION 3/3 - US - CHECK CURRENT STATUS OF ATN MANUAL REQUIREMENTS RELATED TO CLNP PRIORITY HANDLING

3 The requirement was agreed with the clarification that "connectivity" in this context refers to "application connectivity".

4 The Working Group noted US requirement and invited other States/Organisations to submit similar requirements so that they can be consolidated as Working Group Requirements.

ACTION 3/4 - ALL - SUBMIT OPERATIONAL REQUIREMENTS

WP/87 was presented by Mr. Hof. Due to the significant number of requirements contained in this WP, the meeting agreed to review these requirements offline and submit comments directly to the author. It was noted that the document needed to be aligned to the terminology being developed by WG1. The meeting agreed to rename the document "ATN Internet Operational Requirements". It was further agreed that such a document was needed and that it should become a repository for the User/Operational requirements.

ACTION 3/5 - ALL - PROVIDE COMMENTS ON WP/87

ACTION 3/6 - EUROCONTROL - INCORPORATE COMMENTS ON WP/87 AND CONSOLIDATE REQUIREMENTS FROM OTHER INPUT WORKING PAPERS

Mr. Graf presented WP/80 which resulted from task WG2-16. Attention was drawn to requirements 9, 10 and 11 which are seen as longer term requirements (Package 2 and after) related to multicasting at the network layer. Except for these, Mr Graf was of the opinion that the requirements stated in WP/80 would be satisfied by the provisions defined in the current draft ANT SARPs. It was noted that the requirements from WP/80 were already incorporated into WP/87. Comments on WP/80 are requested in the scope of previous request for comments on WP/87.

WP/60 originally presented at Melbourne WG was presented by Mr. Sharma. Mr. Calow stated that he believed the output resulting from the joint WG2/WG3 activity on QOS/Priority/Security would probabaly satisfy the WG1 requirement.

WP/101 and WP/100 were presented by Mr. Hennig (IATA). WP/101 states the airlines position on the need for ATN in support for non-ATC communications. The statement was made that the airlines expect to share the same mobile subnetworks facilities as ATC. It was agreed that the requirements in WP/101 should be inserted as operational requirements in WP/87 and noted that the draft SARPs should satisfy these requirements.

WP/100 restates the importance of deadlines in the definition of CNS/ATM-1 package. June 1995 is considered to be the starting date for a one year validation period in order to allow operational ATN based implementations over North Atlantic before July 1997. The WP stated that it is therefore essential that CNS/ATM-1 package definition is finalised before June 1995. Current plans in some avionics development were presented and raised the issue

of the use of IDRP over the air-ground link because of costs incurred. The issue was left for further discussion under agenda item 5.2.

Mr. Hennig informed the meeting about the recent establishment of the IATA CNS/ATM Implementation Group (CAIG). Mr. Hof requested that information relating to the activities of this group be made available to the Working Group. Mr Hennig proposed to make information available via an internet mailing list. This was welcomed by the meeting.

WP/75 was presented by Mr. Sharma on behalf of the Rapporteur of the NATSPG Data Link Trials Co-Ordination Sub-Group (February 1995). The WP stated that several ADS/CPDLC based trials activities are underway in Europe and the North Atlantic with implementations based on the perceived CNS/ATM-1 defintion. The WP requested the WG to take note of this significant validation and requested that the CNS/ATM-1 definition be based on these trials to the maximum extent possible. This was noted.

8. Agenda 5.2 - Use of IDRP over the Air-Ground link for CNS/ATM-1

Mr. Snively presented WP/112 which proposed not to use IDRP over the air-ground link for CNS/ATM-1 from the airline perspective. It was noted that adoption of this approach raises the question of traffic type/mobile subnetwork selection and the operational consequences of not exchanging reachability (e.g. via IDRP) information over the air/ground link.

WP/93 was presented by Mr. Mabe. The main question raised was that, in his opinion, no apparent requirement was available that justifies for the use of IDRP over the air-ground link at this point in time. The US proposed that the WG review WP/71 which documented US concerns (which include issues related to the exchange of reachability information over the air/groiund link) over the optional non-use of IDRP proposal when it was first tabled at the San Diego WG2 meeting. This was agreed.

WP/71 was presented by Mr. Crocker. This paper expresses the operational requirement for exchange of reachability information over the air/ground link and was sumarised for the purpose of the discussion. It was noted that adoption of a solution which excluded the exchange of reachability information over the air-ground link would result in increased ground network reliability/availability requirements, this being due to the fact that the aircraft will not be made aware of any loss of ground-ground connectivity due to the lack of reachability information being exchanged over the air-ground link. Furthermore, it was noted that implementation of this requirement without IDRP or functionally equivalent routing exchange protocol would impose the maintenance of a priori routing information in the aircraft.

Mr. Hennig expressed the view that such a priori knowledge had been used up to now by airlines for a number of years, and that it would remain an acceptable solution in the CNS/ATM-1 Package timeframe to satisfy the operational requirement. Mssrs. Link, Crocker, Snively and Henning agreed to discuss the issue off-line with the US Panel Member and report their conclusions back to the WG.

Following this off-line discussion Mr. Link stated that, given the expected near term topologies, the FAA accepts the optional non-use of IDRP for CNS/ATM-1 provided that a recommendation is added to the SARPs recommending the implementation of IDRP in avionics by mid 1999. This was agreed. Mr. Link continued by inviting States and Organisation to evaluate the optional non-use solution in the context of their foreseen operational environments.

The Working Group agreed that the CNS/ATM-1 SARPs should include requirements for both the use and the optional non-use of IDRP over the mobile link.

In response to Mr. Sharma, Mr. Link indicated that the 'RIP' proposal (originally tabled at the Melbourne WG) will be reconsidered again in case shortcomings are identified as the result of the validation of the optional non-use of IDRP solution and/or if it transpires that it is not possible to achieve the level of validation necessary within the required time-frame.

The Working Group agreed that the SARPs should include standards for a profiled and, when possible, a simplified IDRP.

ACTION 3/7 - CISEC -TO DEFINE THE MECHANISMS NECESSARY TO SUPPORT THE OPTIONAL NON-USE OF IDRP.

Mr. Crocker agreed to document the WG decision on the support of the optional non-use of IDRP in CNS/ATM-1 in a Flimsy (Flimsy #3 - Appendix F).

WP/107 was presented by Mr. Koetter. The paper points out the need for a migration path to IDRP in the air-ground data link. The Working Group took note of the contents.

WP/89 was introduced by Mr. Link. The paper introduces the U.S. CNS/ATM-1 operational requirements and evaluates the various options for routing information exchange over the mobile link against these requirements. The Working Group noted that the paper has been overtaken by the agreed approach for IDRP in CNS/ATM-1.

WP/108 was presented by Mr. Crocker. The paper presents a recommended IDRP protocol requirements list for a mobile router in the end state, and in a configuration for CNS/ATM-1. The Working Group agreed to consider the APRLs proposed in the paper together with the proposed IDRP APRLs in WP/95 and WP/96.

WP/96 was presented by Mr. Whyman. The paper includes APRLs for a minimum ATN Manual compliant asymmetric IDRP implementation for the mobile link. Furthermore, the paper proposes CNS/ATM-1 optimisation in 5 areas. Mr. Mabe commented on the simplification 5 (single FIB, security label replaced by addressing convention) by saying that the current solution and the proposed optimisation may still require full development of certified CLNP software in avionics. In response Mr. Whyman explained that the security label is currently not implemented in COTS and that the address solution would in the best case reduce the number of advertised routes between ground and airborne BIS from 15 to 1 thereby resulting in a significant reduction in the use of the air-ground link.

Mr. Hof raised the question to which extent use can be made of COTS in operational avionics. In response Mr. Mabe stated that COTS can be used for trials systems but due to certification requirements, the use of COTS for operational avionics is very unlikely. Mr. Crocker expressed his concern that he had been lead to believe that certified avionics ATN software was planned to be available in the short term or was currently available and that it was on this belief that he had supported the US position to relax operational requirements with respect to allowing the optional non-use of IDRP solution that had been adopted by the WG. Several questions were raised as to whether operational ATN avionics can be implemented before July 1997 (FAA/IATA planned date for CNS/ATM-1 operational implementation). Mr. Hof proposed to continue with the agreed CNS/ATM-1 definition as clear information on certification requirements is not available and certification requirements will equally impact any CNS/ATM-1 definition. This was agreed. Mr. Henning stated that he had not been told that the 1997 deadline cannot be achieved for whatever reason.

In response to several questions on the impact of the addressing convention “security” proposal on the NSAP addressing plan, Mr. Whyman agreed to produce Flimsy #4 (Appendix E).

The Working Group continued the discussion on the single FIB proposal (optimisation 5 in WP/96) and agreed with the optimisation providing that WG 3 had no requirements that would preclude the optimisation. The Working Group noted that as a result there will be an implication on the current addressing provisions defined in the current draft SARPs. EUROCONTROL accepted an action to issue a Defect Report on the agreed optimisation.

ACTION 3/8 - EUROCONTROL - ISSUE DEFECT REPORT ON OPTIMISATION 5 IN WP/96

9. Review of Flimsy 2 - QoS, Priority and Routing Policy Issues

As a result of the informal joint WG2/WG3 session on Monday afternoon Mr. Whyman presented Flimsy #2 (QOS, Priority and Routing Policy issues) which he had developed taking into account the notes of that informal session (WP/114) . Mr. Pierce identified the need to inform applications about the actual QOS. The Working Group took note of this requirement and agreed that the definition of mechanisms for providing this information to application is a local matter. The Working Group agreed the Flimsy which was amended to include the new requirement. It was further agreed that Mr. Whyman present the amended Flimsy to WG3. The final version of Flimsy #2 is at Appendix D.

10. Agenda 5.2 - Use of IDRP over the Air-Ground link for CNS/ATM-1 (continued)

The Working Group continued the discussion on WP/96 and agreed with optimisations 1 and 2. Optimisation 3 proposes to delete DIST-LIST-INCL and DIST-LIST-EXCL. Ms. Thulin proposed to keep DIST-LIST-INCL . This was agreed. The Working Group rejected optimisation 4 pending validation results.

Mr. Graf raised the question whether the optimisations apply to both mobile and fixed communication. The Working Group agreed that until requirements require the opposite the optimisations apply to both mobile and fixed communication.

ACTION 3/9 - EUROCONTROL - ISSUE DEFECT REPORT ON OPTIMISATIONS S 1,2 AND 3 IN WP/96

11. Agenda Item 5.3 CNS\ATM-1 Internet Profile Requirements Lists (PRLs)

WP/95 (Proposed ATN Protocol Requirements Lists (PRLs) for CNS\ATM-1 Package) was briefly presented by Mr. Crenais. He reported that the paper had been produced as a result of the WG2 deliverable (WG2-2) assigned at the San Diego meeting to the WG2-2 'Task Force' the leadership of which had been assigned to France. He pointed out that whilst the paper had included inputs from other members of the Task Force the contents of WP/95 had not been previously been made available to the members of the Task Force and therefore did not represent an agreed position of the Task Force. Given this, Mr. Crenais did not see any significant benefit in the WG conducting a detailed review of the WP.

Noting the above Mr. Sharma proposed that the WG firstly address issues of a 'general' nature and then look at WP/95 on a PRL table by table basis in order to identify any obvious issues that required discussion.. This was agreed.

Mr. Whyman questioned the utility of including the ISO 8208 PRLs, to date the ATN Manual and subsequent versions of draft ATN SARPs have not included such detailed requirements on subnetworks and he believed that the specification of ISO 8208 PRLs was out of scope of the ATN SARPs. Mr. Sharma stated that the ATN SARPs currently specify subnetwork service requirements and that, in his view, is all that is necessary. Mr. Crocker supported this view and proposed that the meeting concentrate on the internetworking issues. This was agreed.

Mr. Briand questioned whether it was necessary to specify the use of the connectionless transport protocol (CLTP), a PRL for which is included in WP/95. Mr. Sharma stated that CLTP should only be standardised for CNS\ATM-1 if WG3 had planned on using its services. Mr. Hennig stated that this was not the case and it was therefore agreed that CNS\ATM-1 Package will not specify the use of and the SARPs for the CLTP. *(Note: refer to section 19 of this report which documents the reasons why this decision was subsequently reversed.)*

Mr. Briand raised a further issue with respect to the fact that certain PRL entries contained were specified as mandatory in the CNS\ATM-1 Package column where the associated text in the SARPs appendix had in fact only recommended the implementation of the feature. The CNS\ATM-1 Package was therefore essentially promoting the status of these features to be a mandatory requirement. Mr. Briand proposed that where a requirement in an appendix

is 'recommended' then its status should be optional in the CNS\ATM-1 Package column. This was agreed. *(CISEC take note !)*

Mr. Briand final concern related to the fact that some of the PRLs contained in the PRLs had already assumed acceptance of defect reports that had been submitted to the CCB process but had yet to be approved by the CCB. This was noted and Mr. Sharma requested that these assumptions be pointed out as the WG reviewed WP/95 on a PRL by PRL basis.

In its review of the second table in WP/95 (i.e. table 3.22) Mr. Callow pointed that items ATN3, ATN4, ATN10, ATN11, ATN12, ATN13, ATN18, ATN19, ATN20, ATN21, ATN28, ATN29 and ATN30 were instances of entries where the ATN Support column specified a status of Optional whilst the CNS\ATM-1 Package columnn specified a status of mandatory.

On reviewing ATN3 (Extended TPDU Numbering) which was specified as having a mandatory status for CNS\ATM-1 Mr. Whyman stated that this was in contradiction with an agreement that had taken place in the Paris (December '94) WG2-2 meeting. Mr. Sharma stated that the table may simply be a duplicated of the ADS Europe Common Technical Specification which is based on the COTS software that is being used in that trial. Mr. Crenais agreed. In order to avoid spending WG time on a WP that may be inconsistent with previous WG2 and WG2-2 Task Force agreements it was agreed to suspend review of the WP until Mr. Whyman had reviewed the meeting reports from previous meetings in order to ascertain status of previous agreements.

WP/94 (Discussion of Different Network Diagnostic Methods) as presented by Mr. Crocker. The paper had been developed as a result of an action (2/27 - "Prepare Defect Report indicating use of CLNP Partial Route Recording and the Benefits of CLNP Echo Request/Response Functions") assigned at the WG2 meeting in Melbourne. The WP noted that whilst the PRR function was mandated for use in the current version of the draft SARPs in the CLNP PRL (Chapter 9) the necessary mechanisms to permit the use of this facaility had not been defined in Chapter/Appendix 12. Given this, the WP proposed the definition of the PING (network reachability function) and trace-route (network connectivity function) in the CNS\ATM-1 internet SARPs. Mr. Crocker explained that the PING function makes direct use of the CLNP echo request/response functions and that the trace-route in turn uses the services of PING and that COTS software that supports these functions is readily available.

Ms. Thulin questioned how frequently would the PING function be used if its use was automated or whether the intent was that it be invoked upon operator command. Mr. Crocker explained that it be the latter based on the need to use it (e.g. in order to assess network performance). Mr. Whyman supported the proposal since the defintion of a network wide System Management solution was not practical in the CNS\ATM-1 tine-frame. Mr. Hennig questioned whether PING packets would be sent to aircraft and if so whether the associated costs could be itemised. It was agreed that such an issue was one to be agreed between the aircraft operator and the service provider. Mr. Sharma questioned whether the PING packets were sent at the highest CLNP priority level. Mr. Crocker's implementation allowed the operator to explicitly set the priority parameter to the level desired.

Based on the above it was agreed to mandate the use of the CLNP echo function in the CNS\ATM-1 internet SARPs and that the defiinition of the associated diagnostic function was considered to be a local implemention issue. Mr. Briand questioned whether it was indeed necessary to mandate both the echo request & response elements of the echo function. It was agreed that only the echo response element of the function be mandated for CNS\ATM-1 and that the echo request be optional.

ACTION 3/10 - US - SUBMIT DEFECT REPORT & CP TO MANDATE SUPPORT OF CLNP ECHO RESPONSE FUNCTION.

12. Review of Flimsy 4 - Addressing Convention for the Controlled Use of ITU Restricted Subnetworks

Following WG2 adoption of Optimisation #5 in WP/96 (Single FIB Operation) Mr. Whyman undertook to document the Addressing Convention proposal in a Flimsy (#4) - Appendix E. In his presentation Mr. Whyman stated that the majority of the text in the Flimsy had been developed following the WG2-2 Task Force meeting in Paris (December '94) and that the new material related to implications on the ATN NSAP Address (Section 6).

With respect to these implications Mr. Hof questioned how a distinction could be made between ATS & AOC communications, both of which fall under the 'Operational Communications' category. Mr. Whyman stated that the proposal could be readily modified to make this distinction.

Mr. Graf stated that the proposed NSAP implications were in conflict with a proposal in WP/78 which he would be shortly presenting. This was noted.

With respect to Section 3 Mr. Brangier asked how, following derivation of the airborne routers NSAP Address Prefix by the ground router, how the ground router derives the remaining NSAPs supported by the aircraft. Mr. Whyman replied that such information could be algorithmically derived.

Mr. Brangier then questioned how a ground ATC Router could advertise to an airborne router that it is not prepared to route APC traffic generated by the aircraft. Mr. Hennig stated that the airborne router should already be aware of such restrictions based on a-priori knowledge. Mr. Callow hypothesised that some ATS providers may chose to route APC traffic on a dynamic basis (i.e. at certain times of a day based on available capacity due to low ATS traffic) that a-priori knowledge would be insufficient. This was noted.

Mr. Crocker proposed that the WG agree on the principles put forward in Flimsy 4 and that the details be defined based on further technical discussion after the WG meeting. This was agreed. Flimsy 4 is at Appendix E.

ACTION 3/11 - EUROCONTROL - FOLLOWING TECHNICAL AGREEMENT SUBMIT CHANGE REQUEST AND DRAFT CHANGE PROPOSAL TO SUPPORT IMPLEMENTATION OF THE ADDRESSING CONVENTION FOR CNS\ATM-1 INTERNET SARPS.

13. Agenda Item 5.4 - Draft Validation Record Configurtion Items (VRCIs)

WP/68 (Proposed Guidance Material in Suport of Route Initiation) was presented by Mr. Hof. The WP was originally presented at the Melbourne meeting with an action (2/47) assigned to all participants at that meeting to provide comments on the paper. Mr. Hof reported that no comments had been recieved. Mr. Hof , in his presentation of the WP, stated that the material be submitted as a Defect Report but, given that it was Guidance Material, considered it reletively lower in priority to the development of the SARPs.

ACTION 3/12 - EUROCONTROL - SUBMIT WP/68 AS DEFECT REPORT

WP/76 (ATN SARPs & Guidance Material - Draft Version 1.1 -) was presented by Mr. Crenais. In his presentation Mr. Crenais reported that Draft 1.0 had been created as a result of implememting the Change Proposal necessary to align the draft 0.0 SARPs (based on the November 19th 1993 'Validation Copy') with the Second Edition of the ICAO ATN Manual. Draft 1.1 had been subsequently created following implementation of 6 editorial Change Proposals that had been accepted by the CCB, the change pages were attached to the WP. The WG endorsed the changes made and, based on agreed working procedures, the version will be revised to version 2.0 of the draft SARPs (where n.0 represents a WG2 approved version) and that they would be available on the CENA ATN Validation archive shortly.

Mr. Herber stated that when printing the change pages that he received via the technical mailing list he had error messages on the headers and footers with the consequence that he was unable to quickly determine the pages to be replaced. It was suggested that the problem was probabaly due to variations between the German MSWord version and the US Version. As a simple means to fix the problem Mr. Sharma suggested that any subsequent change

pages that are sent out on the mailing list have the page numbers typed on each page. This ws agreed.

ACTION 3/14 - FRANCE - TO MAKE VERSION 2.0 OF THE DRAFT SARPS AVAILABLE ON THE CENA ATN VALIDATION ARCHIVE

WP/79 (Additional Guidance Material Related to ATN Network Layer and Transport Layer Addressing) was presented by Mr. Graff. The WP was presented as a result of an action assigned to Germany at the San Diego meeting (WG2-12). Mr. Graff stated that he had received a comment from Mr. Briand before the meeting which he will implement. Mr. Crocker proposed a number of editorial changes which were accepted. Mr. Sharma proposed that the material contained in the WP with the agreed editorial amendments be submitted as a Defect Report. This was agreed.

ACTION 3/15 - GERMANY - SUBMIT WP/79 FOLLWING AGREED AMENDMENTS AS A DEFECT REPORT/CHANGE PROPOSAL.

WP/85 (Change Proposal Material related to ATN TSAP Handling) was presented by Mr. Briand as a result of action 2/34 assigned to Eurocontrol at the Melbourne meeting. It was noted that the CCB had accepted the associated Defect Report (23) and that the CP was being presented to the WG for review prior to formal submission to the CCB. Mr. Graff questioned a discrepancy that existed between the introduction and the actual draft CP text. Mr. Briand agreed this was an error. It was agreed to submit the change material contained in this WP as a formal CP to the CCB.

ACTION 3/16 - EUROCONTROL - SUBMIT CHANGE PROPOSAL TO CCB AS PER MATERIAL IN WP/85.

WP/78 (Draft Defect Reports and Change Proposals Related to ATN Addressing) was presented by Mr. Graff. The WP raised three issues, the first related to the issue of the Reference Publication Format (based on experience in the EURATN project), the second to the fact that the current ATN NSAP address format does not allow for 'ATN Island' based addressing and the third related to inconsistencies between Chapter 5 and Chapter 7.

The WG agreed the first of the issues related to the reference Publication Format. With respect to the second issue, which required the removal of the RDF field, the WG noted that this was now the third change to the NSAP address format/plan and that the issue be deferred to an overall action that is responsible for addressing issues related to changes in the NSAP address format and allocation. The other two changes relating to DR51 (routing to all mobiles) and the Addressing Convention as described in Flimsy 4. *(Note: The CISEC was subsequently charged with assessing all potential changes to the NSAP format/content - refer to CISEC Terms of Reference in Flimsy 7).*

The third issue related to alignment with Chapters 5 & 7 was accepted by the WG as a Defect.

ACTION 3/17 - GERMANY - SUBMIT DEFECT REPORT RELATED TO FIRST & THIRD ISSUES IN WP/78.

14. Feedback resulting from presentation of WG2 Flimsy #2 to WG3

Mr. Whyman had presented WG2 Flimsy 2 to WG3 and reported that WG3 had raised issues with respect to QoS parameter specification, upper bound in terms of time that a message can exist in the internet after which it should be discarded and the use of the management Interface for specifying preference rather than dynamic management.

15. Flimsy #3 - Optional Non Use of IDP

Flimsy 3 was presented by Mr. Link. The Flimsy documented the agreements reached by the WG regarding the optional non-use of IDRP. A number of minor editorial changes to the proposed text were agreed. The revised Flimsy is at Appendix F to this report.

16. WP/95 Revisited

Mr. Whyman reported that, following the previous days discussion of the WP, he had reviewed the WPs that had been submitted to the Paris WG2-2 Task Force meeting and based on agreements that had taken place at that meeting, he concluded that WP/95 did not reflect these agreements. Based on this he proposed that the WG not consider the WP/95 further. Furthermore he had noted problems in the IDRP PRL contained in the WP which was inconsistent with the CLNP optional requirements. The proposal was accepted and it was agreed to forward the WP to the CISEC for further consideration (this being based on the assumption that the CISEC would be established).

17. Flimsy #5 - IDRP PRLs Comparison

Flimsy #5 was presented by Mr. Crenais. It highlighted the differences between the various IDRP PRL proposals on the table (WP/96, WP/95, WP/108). Mr. Sharma requestd comments on the Flimsy and invited the WG to resolve any discrepancies between the PRLs. No comments were received and it was therefore agreed to forward the Flimsy to the CISEC for consideration, this agaian being based on the assumption that the CISEC would be established. Flimsy #5 is at Appendix G.

18. Agenda Item 5.4 - Draft Validation Record Configurtion Items (VRCIs) (Continued)

WP/86 was presented by Mr. Briand as a result of action 2/32. It contained a draft consolidated defect report encompassing a number of individual defect reports that had been presented to the Melbourne WG meeting on the ES-IS protocol. It also contained a corresponding draft Change Proposal. Mr. Crocker requested that a statement be included in the draft CP that no constraints apply to the use of the ES-IS protocol in the ground-ground environment. This was accepted. In his presentation Mr. Briand questioned whether the direct connnection of an End System to a mobile subnetwork was permitted and if so this would require the operation of the ES-IS protocol between this End System and its ground peer over the air-ground subnetwork. It was agreed that such a requirement was not foreseen in the CNS/ATM-1 Package time-frame. The WG endorsed the draft DR and CP and requested that it be submitted to the CCB. In its review of the draft CP it was noted that the notation P and X were used in the PRLs support column which have identical semantics. The WG agreed to standardise on the X for all PRLs in the draft SARPs. *(CISEC - Please Note !)*

ACTION 3/18 - EUROCONTROL - SUBMIT CONSOLIDATED ES-IS DEFECT REPORT AND INCLUDE DRAFT CP AS PER WP/86.

WP/97 was presented by Mr. Graf as a result of an action assigned in San Diego (WG2-12). The following WG decisions were reached:

Section 2.1 It was not possible to accept this draft defect until such time the WG3 QoS requirements were known.
Section 2.2 Draft DR and draft CP agreed.
Section 2.3 DR accepted (Mr. Crenais noted that this may already be implemented in the draft 1.1 SARPs). CP agreed.
Section 2.4 DR accepted. It was noted that Flimsy 2 from the Melbourne meeting recommended that a DR be submitted with respect to table A5-1 in the draft SARPs.

ACTION 3/19 - GERMANY - SUBMIT DEFECT REPORT RELATED TO TABLE A5-1 IN MELBOURNE FLIMSY #2.

Mr. Hof stated that his view was that there was insufficient time available to review the remaining VRCIs listed in WP/97 in detail and proposed that, in the interests of progress,

that Germany submit remaining VRCIs in the WP directly to the CCB which are only considerd relevant for the CNS/ATM-1 Package. This was agreed.

ACTION 3/20 - GERMANY - SUBMIT VRCI(S) CONTAINED IN WP/97 RELEVANT TO CNS/ATM-1 TO CCB.

19. CLTP for CNS/ATM-1 Internet SARPs

Mr, Sharma reported that, following discussions with the US Panel Member and Mr. Hof that it would indeed be necessary to include in the draft SARPS for CNS/ATM-1 provisions for the use of the CLTP, this being based on the fact that for certain regional ground-ground applications its use may be required. Mr. Sharma pointed out that the decision to exclude CLTP earlier in the meeting only took into account air-ground application requirements. It was consequently agreed to include these provisions in the CNS/ATM-1 SARPs to support ground-ground applications.

20. WP/74 Revisited.

Mr. Sharma again presented WP/74 which, inter alia, proposed the creation of a CNS ATM-1 Internet SARPs Editorial Committee (CISEC). The WG agreed to create such a body with a note that any technical changes resulting from the CISEC be submitted to the CCB process for acceptance. This was agreed. The other proposal in WP/74 with respect to cancelling the June WG2 meeting as had been tentatively agreed in Melbourne was rejected given that it was essential to hold a WG2 meeting in the June/July time-frame by which time the Package 1 definition must be finalised. It was agreed to discuss the exact dates of this meeting later.

21. Flimsy #1 - Proposed Structure of the CNS/ATM-1 Internet SARPs

Mr. Whyman presented Flimsy #1 (Attachment H to this report) which proposed a revised structure for the CNS/ATM-1 Internet SARPs. He pointed out that the attachment to the Flimsy (i.e. the proposed structure) was currently incomplete in that the cross-reference section to the current version of the SARPs had not been completed due to lack of available time. Mr. Link supported the proposal for the revised structure provided that traceability between the current SARPs and the revised structure could be maintained and demonstrated. Mr. Whyman believed that such traceabilty could be porovided. Mr. Colliver was did not support the revised structuring on the grounds that there was insufficient time available up to June to accomplish such a task. Mr. Colliver proposed that the current structure be retained but noted that considerable re-work of Chapters 5 and 6 was necessary. Mr. Graf was also of the opinion that there was insufficient time available to support a major restructuring exercise. Mr. Hof noted that whatever is agreed that WG2 should co-ordinate with WG3 on an overall co-ordinated structure of the CNS/ATM-1 SARPs. Ms. Thulin was of the view that such an extensive restructuring of the draft SARPs was impossible within the required time-scale. Mr. Crocker supported the restructuring on the grounds that it focused the material on interfaces which would support States in procuring ATN SARPs compliant systems in the future. Mr. Callow agreed that the current structure of the draft SARPs was not optimal and that there was a view that the document had been developed specifically for air-ground communications with ground-ground communications only added as an after thought. However, his main concern related to the amount of time available to accomplish the restructuring. Mr. Hennig was of the view that, in the intyersts of meeting the IATA June deadline, that the existing structure be retained. Mr. Sharma was of the view that the current structure was not optimal and noted that whatever WG2 produce is likely to remain in Annex 10 for a long period of time and that the WG take the oppurtunity to propose draft SARPs based on the revised structure and not be unecessarily be constrainerd by the current structure. Mr. Sharma also stated that based on discussions with Mr, Paydar (Panel Secratary) that the WG is not, from an ICAO perspective, constrained to retain the current structure of the SARPs in anyway and that the WG should concentrate on doing the best job in the time available.

22. Flimsy #6 - Proposed Resoloution on draft SARPs restructuring

As a result of the previous discussion Mr. Callow developed a proposed resolution to the SARPs restructuring proposal - Flimsy #6 (Appendix I to this report). The Flimsy captured some of the reasons for and against re-structuring the draft SARPS and concluded with a recommendation that the CISEC be established and tasked to develop the draft 2.1 of the SARPs based on the current structure for presentation to the June WG2 meeting. In parallel it was stated that the revised structure be further detailed with respect to identifying applicable sections of the current SARPs to be mapped into the revised structure. The Flimsy further proposed that at the June meeting, following review of the draft 2.1 SARPs (based on the current structure) the revised structure be adopted and that a compelete set of draft SARPs based on the revised structure be developed in time for review at the January '96 WG2 meeting. After much discussion this was agreed with the exception that the complete draft SARPs based on the revised structure be available for the October WG2 meeting. During these discussions it was also proposed that in order to meet some of the objectives of the revised structure that the PRLs in the current structure of the draft SARPs be expanded to include additional columns for each applicable ATN component for that particular PRL. This was agreed.

ACTION 3/21 - EUROCONTROL - TO FURTHER DETAIL PROPOSED SARPS RESTRUCTURING AS DOCUMENTED IN FLIMSY 1 AND ITS ATTACHMENT.

The WG then returned to the dates for the June meeting and finally agreed that the meeting will take place in the period July 17th - July 21st in Rome.

23. Flimsy #6 Re-Visited

Mr. Callow presented Flimsy #6 which had been updated to reflect the previous days discussions. The Flimsy was accepted with the note that it would make a reference to the CISEC Terms of Reference once they had been approved by the WG.

24. Flimsy #7 - CISEC Terms of Reference

Mr. Sharma presented Flimsy #7 which proposed the draft terms of reference for the CISEC and the time-schedule within which the CISEC will be required to complete its task. A number of changes were agreed specifically with reference to the fact that the CISEC should develop CP(s) based on the current structure of the draft SARPs and that the CISEC should agree its own work schedule within the context of the overall schedule presented in Flimsy #7.

Mr. Colliver raised strong objections to the single FIB operation optimisation for CNS/ATM-1 that had been agreed by the WG with respect to points 'b' and 'c' of the draft specific terms of reference. Following much debate it was agreed to revise point 'b' to reflect that the CISEC should develop the SARPs for multiple FIB operation between ground-ground routers in support of ground-ground communications with a recommendation that implementation of this requirements be recommended for implementation by mid 1999. Point 'b' was further revised to include standards for mapping in the ground air-ground router between the single air-ground FIB and the multiple ground-ground FIB. It was further agreed that the CISEC terms of reference should be reviewed against emerging operational requirements resulting from joint WG2/3 discussions and agreements. The final version of Flimsy #7 is at Appendix J to this report.

25. Presentation of WG3 Flimsy #3 in response to WG2 Flimsy #2.

Mr. Murphy (WG3) presented WG3 Flimsy #3 (which had not been formally approved by WG3) to WG2 in response to WG2 Flimsy #2. Mr. Murphy stated that issues documented in WG3F#3 were only applicable to air-ground application requirements that could either be satisfied by the Upper Layers or the internet service. Mr. Sharma pointed out that given the fact that the WG3 requirements had not been finalised and that no further WG3 meetings had been scheduled until October there was likely to be potential problems in WG2 ensuring

that all WG3 requirments could be captured and satisfied by the internet SARPs by the June deadline. This was noted. Following general discussions on each of the points raised in WG3F#3 it was agreed that interested WG2 & WG3 participants meet in the afternoon to further develop the operational requirements. It was recognised that, due to lack of time, the results of these discussions could not be presented to the WG for endorsement.

26. Agenda Item 5.5 Draft WG1 CNS/ATM QoS, Security and Addressing Deliverables

WP/81 (Quality of Service Concept for CNS/ATM-1 Package) was presented by Mr. Hof. Mr. Hof stated that whilst the informal WG2/WG3 meeting on Monday afternoon had used this WP as the basis of its discussions that the informal meeting did not conduct a detailed review of the WP. Mr. Hof stated that EUROCONTROL had invested a great deal of efort in developing this WP and was dissapointed that no comments were forthcoming, he further complained that all attempts by EUROCONTROL to co-ordinate development of this WP had not received any response from those States/Organisations that had signed up to support the activity. Mr. Callow stated that he had responded; however, was unaware that his e-mail was not being succesfully transmitted. It was suggested that the WP be forwarded to the CISEC for further deliberation. Mr. Sharma objected to this proposal on the grounds that it would potentially deviate scarce resource from the CISEC who have only twelve weeks in which to discharge their assigned terms of reference. However, Mr. Sharma stated that the CISEC should use the WP as an Information Paper. Ms. Thulin noted that comments may have been pre-mature given the informal joint discussions between WG2 and WG3 participants.

It was stated that due to the late availability of the WP in advance of the meeting it had not been possible to provide detailed comments on its contents. It was noted that WG3 had in fact produced a WG3 response (limited to the areas of their interest) to this WP which would be forwarded to WG1. In summary it was agreed that due to lack of available time it would not be possible for the WG to conduct a detailed review of the WP and that this would be reported to WG1. It was, however, noted that a number of WG2 participants would be attending the WG1 meeting and it was consequently agreed that Mr. Sharma would consolidate any comments received by these participânts for presentation to WG1. Mr. Hof requested that this ad-hoc review focus on section 6.0 of the WP, this was agreed.

WP/82 (Security Concept for CNS/ATM-1 Package) was also presented by Mr. Hof. He aired similiar concerns over lack of comments and support from the task force members that had signed up to support EUROCONTROL in this activity. It was noted that the WP made an assumption that no network security functionality was foreseen for CNS:ATM-1. Mr. Sharma stated that this may be pre-mature since without knowledge of the operational benefits that will be offered as a result of implementation it was not possible to assess the consequential requirements on the internet. The WG agreed to note that its current and planned defintion for security in CNS/ATM-1 was consistent with WP/82 and that WG1 be informed of this fact. Furthermore the WG agreed to request that WG1 review the post Package 1 security requirements and confirm that they are indeed post Package 1. It was further agreed to request that WG1 review the WP in light of the WG2 decision to support the optional non-use of IDRP in CNS/ATM-1.

WP/84 (ATN Addressing Concept for CNS/ATM-1) was introduced by Mr. Hof as an Information Paper. He stated that this IP had been developed by SITA under contract to Eurocontrol. Ms. Thulin stated that the material was currently immature and invited comments from WG participants. It was noted that WG3 had also reviewed the IP and that at least one WG3 participant had raised some serious objections to the material and was invited to provide (as an individual) comments to the author directly. Mr. Callow reminded the meeting that WG1 had an objective to deliver the final version of the IP to ATNP/2 as a WG1 deliverable.

27. Agenda Item 6 Development of SARPs and Guidance Material for CNS/ATM-1 Package Systems Management.

WP/83 (Systems Management Concept for CNS/ATM-1 Package) was presented by Mr. Hof. He raised similiar concerns as for WP/81. He further stated that WP/83 requests WG2 to develop a Flimsy documenting its comments for presentation to WG1. Mr. Hof requested comments/questions. Mr. Crenais commented on Chapter 2 with respect for the need for several managers. Mr. Hof stated that this Chapter was not relevent and contained old material that had been developed under a FANS Systems Management sub-group some time ago. Mr. Crenais pointed out that the Melbourne WG2 meeting had developed a flimsy that documented a number of assumptions related to Systems Management for Package 1. Given the lack of available time and late availability of the WP Mr. Sharma summed up by stating that WG2 inform WG1 of the Melbourne Flimsy (which is attached to WP/83). This was agreed. Mr. Link stated that, in general, he agreed with the content.

WP/92 (ATN Systems Management Guidance Material) was presented by Ms. Thulin in response to action WG2-25 assigned to SITA in the San Diego meeting. Ms. Thulin stated that the WP contained the assumptions agreed in the Melbourne meeting. The WG noted that it had been agreed in the Melbourne meeting that it be proposed to WG1 that the material in WP/92 be incorporated into the WG1 deliverable (Systems Management for CNS:ATM-1). It was agreed that this proposal be forwarded to WG1.

WP/102 (Proposal for ATN Systems Management in Package 1) was presented by Mr. Miyauchi. It was noted that the WP assumed the current provisions in Chapter/Appendix 12 of the draft SARPs have been agreed for Package 1, this not being the case. It was agreed that the WP be forwarded to WG1 in their consideration of Systems Management for Package 1 with a note that WG1 note sections 2.5 and 3 in particular.

28. Agenda Item 7 Review of Progress on ATN Validation Activities

WP/59 waswas briefly introduced by Mr. Sharma. He stated that the WP had been presented to the Melbourne WG which had endorsed the first two of the three proposals contained therein, these being the reaffirmation of the need for Product 3 (Validation Report) to be developed and delivered to ATNP/2 and the proposed outline for the deliverable. The third proposal requested that the WG initiate development of this Product, due to higher priority activities this proposal was deferred to this meeting. The meeting agreed to defer the proposal to its July meeting.

WP/103 (FAA ATN Flight Trials) and WP/104 (Evaluation of ATN/AMSS End-to-End Transit Delay Performance) were briefly introduced by Mr. Link who invited comments/questions off-line. It was noted that the results in WP/104 were based on use of the OpNet simulation tool.

29. Agenda Item 8 Co-ordination with other Bodies

WP/111 (ATN Air/Ground Mobile Subnetwork Requirements) was presented by Ms. Thulin in response to an action assigned at the San Diego meeting (WG2-24). It was noted that the WP had been made available very late and participants had consequently not had sufficient time to review the contents. Furthermore it was not possible to conduct a detailed review ion the WG due to lack of available time. Mr. Sharma stated that the WG had in fact been requested by the Panel Secratary to comment on the draft VDL material and that the WP did not provide any comments. Ms. Thulin stated that the action in the WG2 report was to create a list of subnetwork requirements and that was what the WP did. Mr. Sharma stated that the action should have been read in conjunction with the report material which stated that as a first step the WG develop a set of subnetwork requirements and evaluate the VDL material against these requirements. It was agreed that the issue be brought to the attention of the Joint WG meeting which would be attended by the Panel Secratary and seek further guidance e.g. submit the WP to ICAO as an IP and request WG2 to complete the action as assigned by the July meeting. *(Note: Follwing subsequent discussions with the Panel Secratary it was agreed that WG2 participants should forward comments on WP/111 to SITA (as soon as possible) who will in parallel develop a set of comments on the VDL material for transmission to the WG participants within three weeks for approval/comment so that the final WG2 comments may be sent to ICAO within a month i.e. by 21st April).*

Mr. Callow stated that documentation coming out of a recent ADSP WG or SG had a numbrer of references to ATN but could not be more specific since he did not have the documentation at hand. Mr. Sharma undertook to investigate further and report back.

30. Agenda Item 9 Any Other Business

No other business was raised.

31. Agenda Item 10 Conclusions and Action List

Mr. Sharma presented a draft action list that included all actions up to the close of the meeting on Wednesday. It was agreed that all actions relating to the submission of VRCIs to the CCB be co-ordinated by the assigned submitter with the CISEC Chair.

Mr. Sharma thanked participants for attending and contributing to the WG and confirmed that the next WG2 meeting will take place in Rome, July 17th - 21st 1995. The meeting was then closed.

32. Appendix A - WG2 ATTENDANCE LIST

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33. Appendix B List Of Working Papers

No.	Title	Presented By	Agenda Item	WP / IP
59	Proposed Structure for WG2 ATN Validation Report "Product 3"	A. Sharma	7	WP
60	Extract from ATNP WG1/1 Report (para 6.1) related to the Idenitification of network issues that require high level definition of operational requirements	A. Sharma	5.1	WP
71	US WG2-3 Deliverables	R Jones	5.2	WP
73	Objectives, Agenda and Schedule	A. Sharma	1	WP
74	Proposal to Expedite the CNS/ATM-1 Internet SARPs and Guidance Material Development	A. Sharma	3	WP
75	Implementation of the CNS/ATM-1 Package	A. Sharma	5.1	WP
76	ATN SARPs & Guidance Material - Draft Version 1.1 -	JM Crenais	5.4	WP
77	U.S. Operational Requirements for ATN in CNS/ATM-1	USA	5.1	WP
78	Draft Defect Reports and Change Proposals Related to ATN Addressing	A Herber	5.4	WP
79	Additional Guidance Material Related to ATN Network Layer and Transport Layer Addressing (Action WG2-12)	A Herber	5.4	WP
80	Operational Requirements Related to ATN Network Layer and Transport Layer Addressing	A Herber	5.1	WP
81	Quality of Service Concept for CNS\ATM-1 Package (WG1-10a)	H Hof	5.1	WP
82	Security Concept for CNS\ATM-1 Package (WG1-10b)	H Hof	5.5	WP
83	Systems Management Concept for CNS\ATM-1 Package (WG1-07)	H Hof	6	WP
84	ATN Addressing Concept for CNS\ATM-1 Package	H Hof	5.5	IP
85	Change Proposal Material related to ATN TSAP handling (2/34)	JP Briand	5.4	WP
86	Defect Report and Change Proposal Material related to ES-IS requirements (2/32)	JP Briand	5.4	WP
87	ATN Internet User Requirements	H Hof	5.1	WP
88	Not allocated			
89	Package 1 Requirements and Options Evaluation	K Crocker/W Link	5.1 5.2	WP
90	Not allocated			
91	ATNP Configuration Control Board (CCB) Procedures	W Link	4	WP
92	ATN Systems Management Guidance Material	H Thulin	6	WP
93	ATNP Working Group 2 and Working Group 3 (IDRP in the Airborne Router)	F Mabe	5.2	IP
94	Discussion of Different Network Diagnostic Methods	R Jones	5.3	WP
95	Proposed ATN Protocol Requirements Lists (PRLs) for CNS\ATM-1 Package	F Colliver	5.3	WP
96	Proposed Profile for IDRP over an air-ground link	H Hof	5.2 5.3	WP
97	Draft Defect Reports related to ATN QoS Management	A Herber	5.4	WP
98	Not allocated			
99	Not allocated			
100	The Airlines Need for an Early Definition of the CNS/ATM-1 Package	K v Boogaard	5	WP
101	The Airlines Position on ATN for Non-ATC Applications	K v Boogaard	5.1	WP
102	Proposal for ATN Systems Management in Package 1	T Majima	6	IP
103	FAA ATN Flight Trials	R Jones	7	IP
104	Evaluation of ATN/AMSS End-toEnd Transit Delay Performance	R Jones	7	IP
105	Not allocated			WP
106	Not allocated			WP
107	IDRP Migration	K Kotter	5.2	WP
108	IDRP Protocol Requirements List for Mobile Routers	W Link	5.2	WP

No.	Title	Presented By	Agenda Item	WP / IP
109	Update to the Report of CCB\1	W Link	4	WP
110	Defect Report 52	W Link	4	WP
111	ATN Air/Ground Mobile Subnetwork Requirements	H Thulin	8	WP
112	Airline Perspective on IDRP on the Aircraft	K v Boogaard	5.2	WP
113	Proposed Mapping between ATNP WG/2WP72 PDUs and ISO 10747 PDUs	R Jones	5.2	WP
114	Notes from Joint WG2/WG3 Meeting on QoS	I Valentine	N/A	IP
115	Action 2/33 - ICAO Definition of SARPs Terminology	A Sharma	5	

34. Appendix C - Meeting Agenda

0	Meeting Organisational Issues - arrangements for joint WG2/3 p.m. session
1	Approval of Agenda and Objectives - Report of Melbourne WG2 Meeting
2	Report on Progress on WG2 Deliverables/Actions
3	Review of WG 2 Work Plan
4	Review of CCB Recommendations
5	Development of Internet SARPs and Guidance Material for CNS/ATM-1 Package
5.1	CNS/ATM-1 Internet Operational Requirements
5.2	Use of IDRP over the air-ground link for CNS\ATM-1
5.3	CNS\ATM-1 Internet Profile Requirements Lists (PRLs)
5.4	Draft Validation Record Configuration Items (VRCIs)-
5.5	Draft WG1 CNS\ATM-1 QoS, Security & Addressing Deliverables
6.	Development of SARPs and Guidance Material for CNS/ATM-1 Package Systems Management
7.	Review Progress on ATN Validation Activities
8.	Co-ordination with other bodies
9.	Any Other Business
10.	Conclusions and Action List

35. Appendix D - Flimsy #2: QoS, Priority and Routing Policy Issues

During the Toulouse meeting of the ATNP Working Groups, a joint meeting of WG2 and WG3 was held to discuss outstanding issues concerning QoS and Priority. A difference in philosophy was found to exist, in that WG2 is largely concerned with networks and protocols, and WG3 is largely concerned with systems. This difference in outlook had resulted in a mis-match in understanding, which this meeting was called to address. WG2 has classified most of these issues as implementation specific, and if there is are requirement for an overall system concept covering these issues, then this must come from another group. This meeting did not itself reach a conclusion, but did provide an exchange of views that enabled the issues to be clarified. In particular, it was noted that:

1. Network Design and Capacity Planning are the primary mechanisms for ensuring that the QoS required by applications is available.
2. The QoS provided by air-ground data links provides a major constraint on the specification and use of air-ground applications, implying that:
   - α) the application mix on board an aircraft will be limited by the current air-ground connectivity
   - β) the operational parameters of air-ground applications may have to be changed when an aircraft's connectivity changes
   - χ) Requirements on Routing Policy exist to force the use of a specific air-ground data link for data transferred by a given air-ground application, whilst respecting ITU restrictions, and that this policy may have to change when the aircraft's connectivity changes.
3. "Best efforts" (i.e. weak) QoS is acceptable provided that the required QoS is provided within the application's limits of tolerance (e.g. 99.99% of messages are transferred within the specified maximum acceptable transit delay).
4. WG3 does not have an explicit requirement for the use of the QoS Maintenance facility provided by the internetwork protocol, but will provide WG2 with QoS Requirements for each application. WG2 will be responsible for determining whether the QoS Maintenance facility needs to be used in order to provide the required QoS for each application, whilst minimising the deployment cost of the ATN Internet.
5. The relationship, if any between QoS Maintenance in the ATN Internet, and the QoS required from individual subnetwork connections, will not be directly visible to CNS/ATM Applications, but will instead be derived from a network model, developed to ensure the maintenance of the QoS required by those applications.
6. Although the ATN Internet will be designed and implemented to provide the QoS required by all applications, it is recognised that some applications will be more tolerant to a failure to meet the required QoS than are others. For example, a safety related application may require that a transit delay target is met in 99.995% of all cases, while a non-safety related application might require that a similar target is met by only 95% of all cases. In order to avoid the cost of sizing the network for the worse case, a number of priority levels have been specified for the ATN Internet such that for a higher network layer priority, a given QoS target will be met for a higher percentage of all data transfers than for a lower network layer priority. The number of priorities available and the classes of applications each corresponds to is specified in table A5-1 of the ATN Manual. It is agreed that:
   - α) WG3 will set the QoS target for each network layer priority level
   - β) all data transferred over the same transport connection will be transferred at the same network layer priority
   - χ) each TSDU sent using the connectionless transport service may be sent at a different network layer priority
7. WG2 will specify congestion management strategies that ensure that catastrophic loss of QoS will not occur when a network becomes congested, and that the on the onset of congestion, the QoS degrades gracefully with lower priority traffic affected before higher priority traffic.
8. WG2 does not require that any use be made of transport layer priority, or for it to have any defined relationship to network layer priority. WG3 may define any semantics it requires of transport layer priority, including a defined relationship to network layer priority, if required. An ATN Transport Service Provider will only implement procedures in response to transport layer priority (e.g. priority based management of queues within the transport layer), if this functionality is required by WG3 in support of some or all CNS/ATM Applications.
9. The relationship between network layer priority and subnetwork priority is subnetwork dependent and is not directly visible to CNS/ATM Applications.

10. WG3 requires that for **CNS/ATM-1 Package**, QoS is monitored such that transport service users can be informed, via a management interface, when the required QoS is not maintained. In particular, transport protocol implementations are required to monitor the round trip delay and to inform the user when the target transit delay is not maintained.
11. The QoS Parameters available at the connection mode transport service interface were discussed. It was noted that most of these parameters are not relevant to the ATN, with the exception of transit delay, which is required to be monitored.

WG2 requests that WG3 provides a specification of the QoS required by each CNS/ATM-1 Package application that is standardised by WG3, for the following QoS metrics:

- Transit Delay
- Throughput
- Residual Error Rate
- Longest acceptable delay between an actual loss of communications and the reporting of the loss to the transport service user (connection mode only)

For Transit Delay, it is requested that targets are provided for both the mean, and an upper bound for a set percentage of messages (e.g. a mean transit delay of 10 seconds and delivery of 98% of TSDUs within 25 seconds). For throughput, it is requested that both average daily and busy hour figures are provided. It should be noted that a cost target is not required as it is assumed that lowest practical cost is always required. WG3 should also identify the appropriate network layer priority for the application, and avoid specifying different QoS targets for applications with the same priority.

Once WG3's requirements have been analysed, WG2 will inform WG3 of any network layer and/ or transport layer QoS Maintenance settings that need to be specified for data of a given CNS/ATM Application, if any, and any Security Label that may similarly be required. If required, then these settings and the network layer priority identified by WG3, shall be applied to each transport connection established for that application, and any connectionless TSDUs transferred by that application.

WG2 will also specify a management interface that will enable the selection of the air-ground subnetwork to be used for supporting a given application, that may be used dynamically and in order to respond to changes in air-ground connectivity.

It will be an implementation choice whether:

a) the network layer priority, QoS or Security Label is explicitly specified by the transport service user when a connection is established, or when a connectionless TSDU is submitted, or
b) the network layer priority, QoS or Security Label to be used for a given transport connection or connectionless TSDU is determined by the transport provider using *a priori* information, or
c) the network layer priority, QoS or Security Label to be used for a given transport connection or connectionless TSDU is determined by the network layer using *a priori* information.

36. Appendix E - Flimsy #4: Addressing Convention for the Controlled Use of ITU Restricted Subnetworks

The Requirement

The User requirement is to respect the ITU and other imposed restrictions on the type of traffic that may pass over subnetworks using free radiating media. Such networks may utilise frequencies that are assigned for a specific purpose (e.g. ATC), or are restricted by the operator for a specific use. This means that data belonging to applications that do comply with such restrictions must not be routed over such subnetworks.

The Addressing Convention

The Addressing Convention illustrated in Figure 1 is proposed as a mechanism for meeting the above requirement. This mechanism may be used both when IDRP is used over an air-ground data link, and when it is not used.

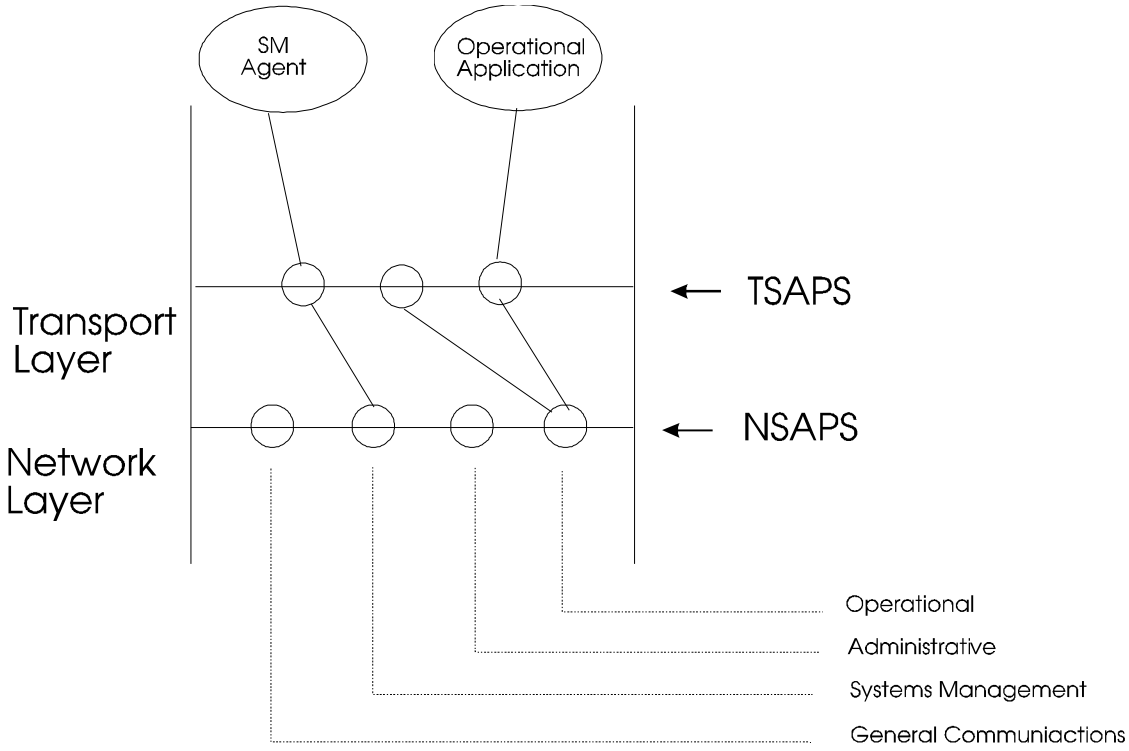


Figure 1 Address Assignment within ATN End Systems

The principle is that each Routing Domain has available to it four NSAP Address Prefixes for use in NSAP Address assignment. These prefixes must be algorithmically related to each other, such that when one prefix is known, the others can be unambiguously deduced. This can be simply achieved by assigning, early on in the address syntax, a specific value for each such prefix. The four prefixes respectively represent:

- Operational Communications
- Administrative Communications
- Systems Management
- General Communications

i.e. each of the four Security Types currently identified by the ATN Manual.
Within each ATN End Systems there may then be up to four NSAPs configured. Each such NSAP has an address assigned relative to one of the four above prefixes. i.e. one NSAP Address will be assigned relative to the Address Prefix for Operational Communications, while another may have an address prefix assigned relative to the address prefix for Administrative Communications.
ATM Applications are then assigned addresses relative to the NSAP corresponding to the NSAP Address Prefix for their Security Type. For example, in Figure 1, an operational application is reached via a TSAP relative to the NSAP that has an NSAP Address assigned relative to the NSAP Address Prefix associated with operational

communications. The result is that the transport address of each application effectively has encoded into it, its Security Type.
It should be noted that an End System has only to support NSAPs corresponding to the applications that it supports. For example, if a system only supports operational applications, then it only needs to have one NSAP with an NSAP Address assigned relative to the Routing Domain's prefix for Operational Applications.

Controlled Routing over ITU Restricted Subnetwork with the non-use of IDRP

In Package 1, when IDRP is not used over an air/ground link, the ground and airborne routers must infer the routes available over such links from the NETs communicated by the ISH PDUs. The above addressing convention is a natural extension of this mechanism.
When the ground router determines the NLRI for a route(s) reachable over an air/ground link, it derives the NSAP Address Prefix(es) from the airborne router's NET. When the above addressing convention is in place, the ground router must know *a priori* any ITU restrictions that apply to the air/ground link. When it generates the NLRI for the route, it must include within the route's NLRI an NSAP Address Prefix for the aircraft for each Security Type permitted to pass over that air/ground subnetwork. These can be derived from the NET as given one prefix, the rest can be derived.
When the airborne router determines the NLRI for route(s) reachable over an air/ground link, it derives the NSAP Address Prefix(es) from configured information specific to that link. The configured information can and should identify routes and NLRI that reflect the ITU restrictions that apply to that link.
Note that when multiple air/ground subnetworks join an airborne and ground router, then the ITU restrictions that apply are the intersection of the restrictions, if any, that apply to the individual subnetworks.

Controlled Routing over ITU Restricted Subnetworks with IDRP

When IDRP is used over restricted subnetworks, as is anticipated after the Package 1 lifetime, the above convention requires a new routing policy rule to operate. This policy rule is applied to routes immediately before they are advertised over ITU restricted subnetworks. Under this policy rule, routes that contain multiple prefixes within their NLRI are broken up and considered as separate routes i.e. one route per prefix., for the purposes of apply this policy rule.
The rule itself is simple enough. If the Security Type encoded into the NSAP address prefix contained in the NLRI identifies a Security Type for data not permitted to pass over the subnetwork, then the route may not be advertised.
The result is that only routes to NSAPs hosting applications for which data may pass over that air/ground subnetwork, are advertised over the subnetwork.

Impact on Network Routing

When data is transferred by the ATN, the destination NSAP Address will be that of the NSAP through which the destination application entity is reachable. The address of this NSAP will, as defined above, encode the Security Type of the application. The routing policy procedures discussed above in 3 and 4, will ensure that no route to that NSAP is advertised over a subnetwork for which it is not permissible for data belonging to that application to pass. Hence the data will only follow routes over subnetworks over which it is permitted to pass. The User Requirement is thus met with both non-use of IDRP and the use of IDRP over air/ground data links.

NSAP Address Implications

In order to support this convention, it is proposed that reserved bits in the RDF field of the NSAP Address are specified for this purpose. It is proposed that in all NSAP Address formats, bits 5 and 6 (0 being the low order bit) are defined to encode the Security Type, as follows:

Bit 6	Bit 5	Security Type
0	0	General Communications
0	1	Operational Communications
1	0	Administrative Communications
1	1	Systems Management

37. Appendix F - Flimsy #3 WG2 Decisions Regarding 'Optional Non-Use of IDRP in CNS/ATM-1'

The purpose of this flimsy is to record the decisions of Working Group 2 regarding air-ground routing exchange for CNS/ATM-1 Package. Given the considerations:

1) the limited complexity of near term planned ground ground topologies for the ATN
2) the risks to timely availability of commercial CNS\ATM Package 1 avionics routers introduced by mandatory use of IDRP for air-ground routing exchange, as indicated by IATA and commercial avionics manufacturers
3) the proposal by IATA that traffic seperation requirements previously raised by the U.S. can be satisfied through the use of policy mechanisms within avionics systems.

Working Group 2 agrees that the draft SARPs for CNS/ATM Package 1 will include the provisions for the optional non-use of IDRP by avionics routers for air-ground routing exchange. Further, the Working Group agrees that the draft SARPs will include a recommendation that avionics systems support IDRP for air-ground routing exchange by July of 1999.

Working Group 2 recognizes that a complete, detailed design for the CNS/ATM Package 1 with optional non-use of IDRP has not been developed and the detailed design will be pursued as part of its work program with a goal of having such a design no later than June 1995. Working Group 2 further recognizes that some level of concern still exists on the operational suitability of CNS/ATM Package 1 with no air-ground routing exchange and encourages its member organizations to continue analyses to address this concern based on the expected operational environment.

Finally, Working Group 2 recognizes that successful validation of the proposed CNS/ATM Package 1 will require that both operation with no air-ground routing exchange and operation using IDRP for air-ground routing exchange be succesfully validated.

38. Appendix G - Flimsy #5 IDRP PRLs Comparison

(Note: Soft Copy not currently available - will be forwarded under separate cover shortly)

39. Appendix H - Flimsy #1 Proposed Contents of the Draft ATN SARPs for CMS/ATM-1 Package

In order to prepare the draft ATN SARPs from the ATN Manual agreed at SICASP/5, ATNP/WG2 considers that:

1) It is necessary to unambiguously identify and specify the major ATN interfaces that are within the competence of ICAO, and which are concerned with:
   - communications over air/ground data links
   - communications on the ground that are between administrations and/or organisations
   - communications between End Systems supporting ICAO specified applications over the ATN Internet.
2) The ATN Architecture needs to be clearly described, identifying:
   - the functional components of the ATN
   - the ATN Routing Concept
   - the ATN Addressing Plan
   - the ATN QoS Management Concept
   - the ATN Systems Management Concept
3) That no technical changes should be made to the ATN Concept described in the ATN Manual 2nd edition, without the defect and corresponding change having been agreed through the CCB process established by ATNP/WG2.

When considering how this should be done, WG2 observes that:

1. The appendices of the ATN Manual must be separated from the corresponding chapters and combined in order to provide the SARPs text.
2. Material contained within some of the chapters of the ATN Manual and, in particular, chapter 6, needs to be incorporated in the SARPs in order to describe the architecture.
3. Not all requirements specified by the ATN Manual are appropriate for CNS/ATM-1 Package.
4. There is a need to provide more than one version of the PRLs for certain ATN Protocols (e.g. IDRP) for use in different ATN components or at different interfaces, so that a clear and unambiguous specification of the minimum conformance subset can be specified for each ATN ccomponent.

In consequence, it is agreed that an editorial process is necessary to generate the SARPs text from the ATN Manual 2nd edition, during which the structure of the document will change to meet the above considerations, and that an appropriate outline is:

1. **Introduction**: comprising the existing text of the ATN Manual scoping the ATN and providing the background for the work.
2. **The ATN Architecture**: comprising the identification of the ATN functional components; the ATN Routing Concept; the ATN QoS Management Concept; the ATN Systems Management Concept; and the ATN Addressing Plan.
3. **ATN End System Requirements:** comprising the Transport Protocol requirements and PRLs; the part of the Internetwork Protocol (CLNP) requirements and PRLs appropriate to an ATN End System; and any management functions necessary to support CNS/ATM-1 Package Applications.
4. **ATN Air-Ground Interoperability:** comprising the requirements and PRLs appropriate to airborne and ground routers for: IDRP; the Internetwork Protocol (Intermediate System parts); the Route Initiation procedures and the ES-IS protocol PRLs for use in support of Route Initiation; the Mobile SNDCF; and any management functions necessary to support CNS/ATM-1 Package Applications.
5. **ATN Ground-Ground Interoperability**: comprising the requirements and PRLs appropriate to ground routers used to interconnect two administrations and/or organisations for IDRP, and the Internetwork Protocol (Intermediate System parts), and any management functions necessary to support CNS/ATM-1 Package Applications.

Flimsy 1 Attachment

	Section Title	ATN Manual Source	Editor
1.	**Introduction**		
1.1	Background	Preface & Chapter 1	
1.2	Scope		
1.3	Purpose of Document		
1.4	Specification Methodology	4.2	
2.	**ATN Architecture**		
2.1	ATN Components		
2.1.1	Architectural Overview		
2.1.2	ATN End Systems		
2.1.3	ATN Router Classes		
2.1.4	ATN Topology		
2.1.5	ATN Islands		
2.1.6	ATN Reference Points		
2.2	The ATN Addressing Plan	Appendix 7	
2.3	ATN QoS Management	A10.6.2	
2.4	ATN Systems Management		
2.5	ATN Security		
3.	**ATN End Systems**		
3.1	Service Provided to Transport Service Users	8.2.1	
3.2	Use of the Transport Protocol		
3.2.1	Compliance Statement	A8.2	
3.2.2	Congestion Management Procedures	A8.2.6	
3.2.3	Protocol Requirements List	A8.2	
3.3	Use of the Internetwork Protocol		
3.3.1	Compliance Statement	A9.2-A9.5	
3.3.2	Protocol Requirements List	A9.6.2.1-A9.6.2.10	
4	**Interoperability over Air-Ground Data Links**		
4.1	Use of the Inter-Domain Routing Protocol		
4.1.1	Compliance Statement	WP96	
4.1.2	Protocol Requirements List	WP96	
4.2	Use of the Internetwork Protocol		
4.2.1	Compliance Statement	A9.2-A9.5	
4.2.2	Protocol Requirements List	A9.6.2.11-A9.6.2.17	
4.3	Use of the ES-IS Protocol		
4.3.1	Compliance Statement	A11.1	
4.3.2	Protocol Requirements List	A11.1	
4.4	Use of the Mobile SNDCF		
4.4.1	Compliance Statement		
4.4.2	Protocol Requirements List		
4.5	Data Link Compression	A10.9	
4.6	Route Initiation Procedures	A6.1	
5.	**Interoperability over Ground-Ground Data Links**		
5.1	Use of the Inter-Domain Routing Protocol		
5.1.1	Compliance Statement		
5.1.2	Protocol Requirements List		
5.2	Use of the Internetwork Protocol		
5.2.1	Compliance Statement		
5.2.2	Protocol Requirements List		

Attachments

A	Mobile SNDCF Specification	A10.6.4	
B	Glossary	Front Matter	
C	Acronyms and Abbreviationa	Front Matter	
D	References	Front Matter	

40. Appendix I - Flimsy #6 - Amended Proposal for Contents of Draft ATN SARP's for CNS/ATM-1 Package

WG2 Flimsy #1 (and the attachment) proposed a complete restructuring of the draft ATN SARP's as presented in the ATN Manual,Second Edition, (Draft SARPs version 1.1) in order to better meet the needs of the SARP's structure and the needs of the implementors. These needs were expressed in the three identified considerations as well as the four observations.

During discussion on this Flimsy, several points were raised by the members of WG2 which are summarised as:

1) The present structure of the draft SARP's is not ideal but can be used.
2) Several members supported the proposals while several opposed for various reasons.
3) Reasons for support included:
   - format more in line with SARPs
   - more logical presentation of material
   - makes implementation easier
   - cancels the perception that ATN Manual is an "Air-Ground" document and makes it a full "ATN" document.
4) Reasons for opposition included:
   - cannot be accomplished in the three months timeframe
   - will impact on verifiction work
   - will delay finalization of SARPs needed in June 1995
   - could contain errors in cross correlations when moving paragraphs around
   - will be difficult to edit
   - will take away valuable resources needed to finalise the SARP's
   - will send the wrong signals to the User community

As a result of these discusions, it is proposed that a compromise be struck that can achieve the objectives of Flimsy #1 while at the same time achieving the objectives of finalized SARPs for June 1995. The proposal is that we form a CISEC as proposed in WP/74 and task them, as a first function, to develop the appropriate CP for forewarding to the CCB. They will also consolidate all the decisions on defects, made at this meeting, and develop a CP for forwarding to the CCB. The CISEC will develop text in acordance with the outline in Flimsy #1 while the present editor of the draft ATN SARPs will update the PRL tables to reflect the new changes from the defect reports as well as expanding them to accomodate the various interfaces needed. These documents would then be presented to the next WG2 meeting for approval to be used as the ATN baseline document for validation purposes and as the appropriately formatted CNS/ATM-1 Package SARPs. The new format would then be used to finalise SARP's for ATNP/2.

By accepting this proposal, the technical aspects of the SARP's will meet the deadline and verification work can proceed in the remaining twelve months. We will also have a more acceptably formatted SARP's for ATNP/2 which can be used for system implementors and inclusion in ANNEX 10, Chapter XX.

41. Terms of Reference for the CNS/ATM-1 Internet SARPs Editorial Committee

- CISEC -

General Terms of Reference

1. The CISEC will develop change proposal(s) based on the current structure of draft SARPs (which will *inter alia* result in the resolution of Defect Report 52 WG2/WP110) in the areas 'a' through 'e' defined below based on the decisions of the Toulouse WG2 meeting to support the development of the draft 2.1 CNS\ATM-1 internet SARPs and Guidance Material.

2. The(se) CISEC developed CP(s)must be formally submitted, by the CISEC Chair, to the CCB no later than 9th June 1995 so that the CNS\ATM-1 Package definition may be finalised by the WG2 meeting scheduled for July 17th - 21st in Rome - as required by ATNP States and Organisations.

3. In developing the Change Proposal(s) for the above the CISEC shall ensure that they are developed in such a manner that readily facilitates their inclusion in the agreed revised structure that has been adopted for the CNS\ATM-1 internet SARPs as defined in attachment 1 to Flimsy 1 of the Toulouse WG2 meeting.

4. In discharging these terms of reference the CISEC shall take into account the WG2 agreed schedule as documented in attachment 1 to this Flimsy (Schedule for the Development of the CNS\ATM-1 Package Definition). Within this schedule the CISEC is free to develop and agree its own meeting schedule.

5. Any issues that arise in the discharge of these terms of reference shall be reported by the CISEC Chair to the WG2 Rapporteur immediately so that, where possible, remedial action may be initiated.

6. In discharging areas 'a' through 'e' the CISEC shall take into consideration currently submitted VRCIs related to items 'a' through 'e' below.

Specific Terms of Reference

a. to specify the mechanisms necessary to support the optional non-use of IDRP over the air-ground link and ensuring that a statement reflecting the recommended use of IDRP in avionics systems by mid 1999 is included as agreed and documented in Flimsy #3;

b. to specify the mechanisms related to the WG2 endorsement of Optimisation #5 as related to the 'single FIB operation' as documented in WP 96. applicable to communications between the airborne router and the airside of the ground air-ground router, specifically:

(i) Standards for multiple FIB operation for communication between ground-ground routers shall be developed and a recommondation requireing the support of multiple FIBs (for ground-ground communications) in mid 1999 shall be included.

(ii) to define standards for the mapping between the single FIB (air-ground) and the multiple FIB (ground-ground) in the ground air-ground router.

c. to specify the mechanisms related to the WG2 endorsement of Optimisation #5 (WP/96) as related to the 'addressing convention' , the (WG2 endorsed) principle of which is documented in Flimsy #4.

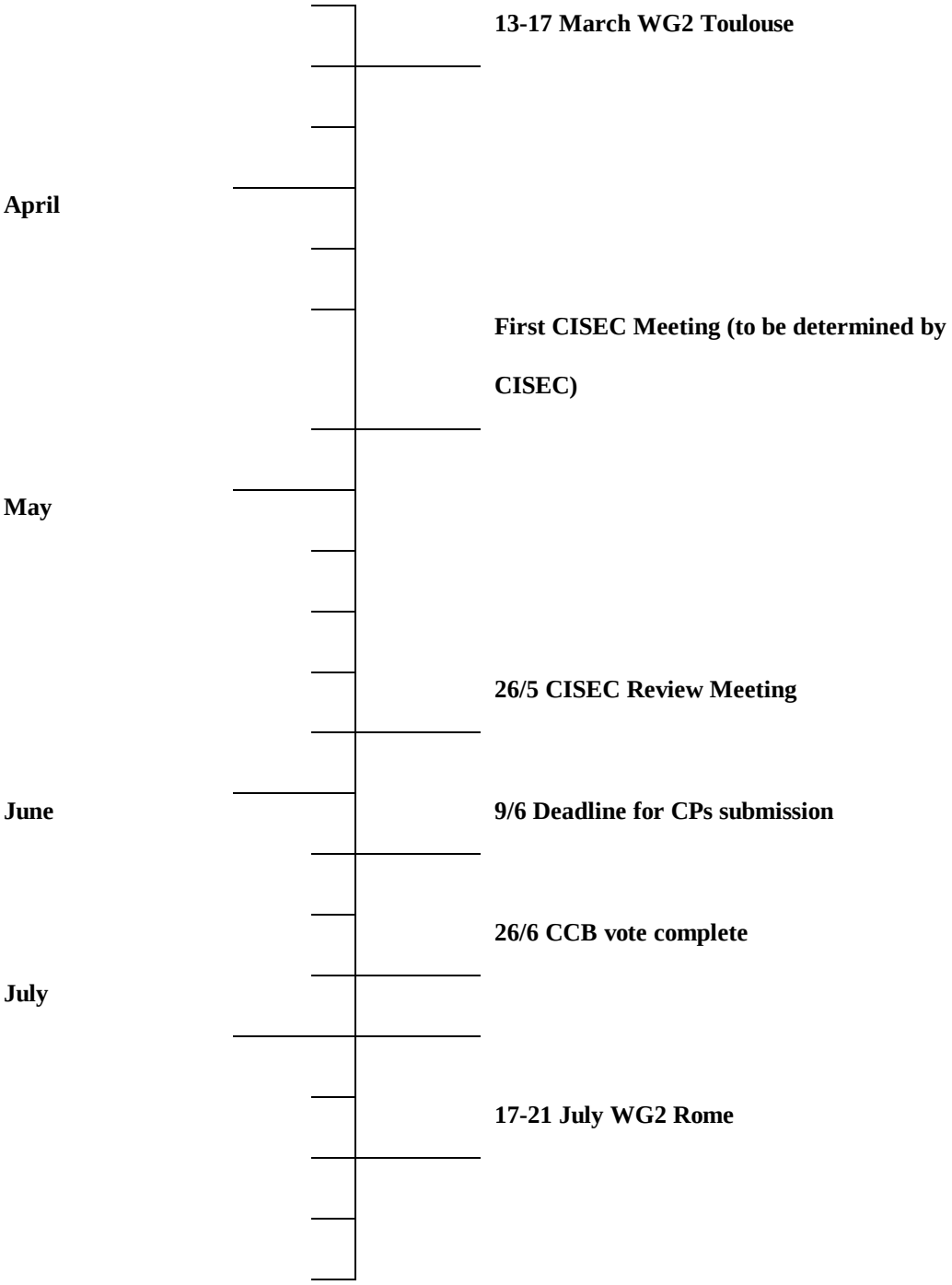
d. to specify the ATN Protocol Requirements Lists for CNS/ATM-1 Package by adding appropriate columns in the current PRLs to facilitate definition of the CNS\ATM-1 Package requirement for each identified type of component where applicable and taking into account:

(i) Optimisations # 1,2 & 3 as endorsed by the Toulouse WG2 meeting with respect to IDRP;
(ii) Flimsy #5 and resolving identified differences in WPs 95, 96 & 98 with respect to IDRP;
(iii) Flimsy #2 on QoS and Priority requirements with respect to the ATN COTP, CLNP and the Mobile SNDCF where applicable.

e. to minimise impacts on the ATN NSAP address format and content with respect to:

(i) DR95010051 concerned with routing to all mobiles;
(ii) the addressing convention as referenced in point 'd' above and,
(iii) the draft defect report presented in WP/78 concerned with replacing the RDF field concerned with specification of a common NSAP address prefix for the Fixed ATN RDC.

Proposed schedule for CNS/ATM-1 internetwork Package draft SARPs Development



42. Appendix I - Action List

Ref	Deliverable	Status
WG2-1	Finalise Draft WG2 Work Plan **UK**	Completed
WG2-2	Develop CNS/ATM-1 Internet Package Definition (comprising PRL & definition of mechanisms to support optional non-use of IDRP) and, where necessary, Defect Reports and supporting draft Change Proposals required to support Package 1. **FRANCE*/UK/US/SITA/ EUROCONTROL**	Superceded
WG2-3	Respond to proposals regarding optional non-use of IDRP for CNS/ATM-1 Package **US**	Completed
WG2-4	Develop Network Operating Concept **EUROCONTROL*/GERMANY/SITA/FRANCE/USA /UK**	Open
WG2-5	Develop ATN SARPs Validation Strategy	Completed
WG2-6	CCB Terms of Reference	Completed
WG2-7	Enhance ATN Requirements Database **EUROCONTROL**	Completed
WG2-8	Review and agree ATN User Requirements, submit Defect Reports and supporting draft Change Proposals **EUROCONTROL*/ GERMANY/JAPAN/US/ UK**	Open
WG2-9	Agree, if necessary, changes to ATNP WG2 Terms of Reference for endorsement by WG of Whole meeting in March '95	Completed
WG2-10	CCB Resolution on submitted Defect Reports and supporting CCB approved Change Proposals **CCB**	Completed
WG2-11	Review ATN Routing Concept (WG2/WP-31) and, if appropriate, develop Defect Report for CCB Review **EUROCONTROL*/US**	Completed
WG2-12	Develop additional guidance material related to ATN addressing for submission to CCB as a defect report(s) and supporting draft Change Proposals **GERMANY*/US/FRANCE/EUROCONTROL**	Superceded by 3/17
WG2-13	Review, modify and enhance, where appropriate, operational requirements proposed with respect to ATN addressing, develop (if appropriate) Defect Reports and supporting draft Change Proposals for submission to CCB **EUROCONTROL*/ GERMANY**	Completed
WG2-14	Review QoS related ATN SARPs and Guidance Material and develop Defect Reports and supporting draft Change Proposals, where appropriate **GERMANY*/ EUROCONTROL**	Superceded by 3/20
WG2-15	Develop Defect Reports and supporting draft Change Proposals for alignment with ICAO ATN Manual, 2nd Edition text. **US**	Completed

Ref	Deliverable	Status
WG2-16	Develop Defect Reports and draft Change Proposals to counter those Change Proposals produced in WG2-15 that are not considered relevant for draft SARPs **US**	Open
WG2-17	Develop Defect Reports and supporting draft Change Proposals for resolution of 'unresolved defects from SICASP/V'. **EUROCONTROL**	Completed
WG2-18	Develop Defect Reports and supporting draft Change Proposals relevant to the proposed Mobile SNDCF PICS Proforma **EUROCONTROL**.	Completed
WG2-19	Develop Defect Reports and supporting draft Change Proposals identified in WG2/WP-22 **EUROCONTROL**	Completed
WG2-20	Develop Defect Reports and supporting draft Change Proposals identified in WG2/WP-34 **FRANCE.**	Completed
WG2-21	Develop Defect Reports and supporting draft Change Proposals identified in WG2/WP-46 **GERMANY**	Completed
WG2-22	Develop Defect Reports and supporting draft Change Proposals identified in WG/WP-7. **US**	Closed
WG2-23	Create Version 1.0 of Draft SARPs & Guidance Material and Version 1.0 of ATN Requirements Database **CCB**	Completed
WG2-24	Create a checklist of ATN Subnetwork Requirements and review and comment on draft VDL SARPs. **SITA*/ US**	Open WP/111 submitted
WG2-25	Systems Management draft SARPs and Guidance Material for CNS/ATM-1 Package (Initial) **SITA*/US/France/Japan /Eurocontrol**	Closed. WP/92 submitted
	MELBOURNE WG	
2/26	To update the WG2 Work Plan to reflect WG2-x deliverables **UK**	Open
2/27	Prepare Defect Report indicating use of CLNP Partial Route Recording and the Benefits of CLNP Echo Request/Response Functions **US**	Superceded by 3/10
2/28	To update CCB Procedures to include new Figure on CCB Procedures **US**	Closed
2/29	Make Source Code of Unix Utilities available on CENA Server **France**	Open
2/30	Prepare Defect Report Prepare Defect Report on lack of TL SARPs for handling the Security Type **EUROCONTROL**	Completed
2/31	Make Proposals on Congestion Management. **All**	Open
2/32	Submit DR scoping ES-IS defects and propose changes **EUROCONTROL**	Superceded by 3/12

Ref	Deliverable	Status
2/33	Seek Guidance from the ICAO Secretariat on whether intra-domain material should be recommendations or Guidance **Chairman**	Completed WP/115
2/34	Generate CP based on discussion of DR23 **EUROCONTROL**	Superceded by 3/16
2/35	Generate CP to delete the text in A5-4 identified by DR40 **EUROCONTROL**	Completed
2/36	Generate DR Generate DR identifying lack of specification to avoid “Black Holes” when routing in support of General Communications. **EUROCONTROL**	Open
2/37	To derive procedures and Configuration Management Document from WP/66 **CCB Chair/VACM**	Open
2/38	To send out the CCB Decision Message(s) following the ad hoc WG2 meeting **CCB Chair**	Completed
2/39	To begin coordination to automate VRCI Update Process **CCB Chair/VACM**	Open
2/40	Update the Database to reflect Version 1.0 SARPs alignment. **EUROCONTROL**	Completed
2/41	Produce soft version 1.0 SARPs to reflect DR95010001. **France**	Completed
2/42	Produce the Change Proposal corresponding to DR95010001	Completed
2/43	Produce notification on atn-internet-technical list explaining VRCI list scope and use including the fact that DRs and CPs will no longer be sent to the atn technical list **CCB Chair**	Completed
2/44	To evaluate DR 95010048 within the two week period from submission with respect to the pending status. **US**	Completed
2/45	Create the VRCI Mailing List and Subscribe CCB Members **France**	Completed
2/46	Generate Defect Report to initiate the production of the draft CNS/ATM-1 Package SARPs from the ATN Manual Material **US**	Completed DR52, WP/110
2/47	Review WP/68 and comment **ALL**	Open
2/48	Submit Defect Report and draft Change Proposal contained in WP/30 to the CCB. **EUROCONTROL**	Completed
2/49	Be prepared to resolve this Defect Report at the March Meeting **ALL**	Completed
2/50	Prepare presentation on the CCB Process for March Meeting. **US**	Completed
2/51	Prepare presentation on the ATN Requirements Database for the March Meeting. **EUROCONTROL**	Closed
2/52	Prepare presentation on the Validation Strategy for the March Meeting. **UK**	Closed

Ref	Deliverable	Status
2/53	Provide existing PRL Tables to Mr. Colliver **EUROCONTROL**	Completed
2/54	To make available Appendix B to the UK/France ADS trials Common Technical Specification to WG2 **UK/France**	Closed
2/55	Review and comment on ISO 8208 PRLs in WP/37 and Appendix B to the UK/France ADS trials Common Technical Specification. **ALL**	Closed
2/56	Prepare a presentation on the Network Operataing Concept for Presentation to the Working Group of the Whole **EUROCONTROL**	Closed
2/57	Bring Flimsy #2 to the attention of the appropriate WG1 Task Force **EUROCONTROL**	Completed
2/58	Ensure that impact of any Defect Reports raised on priority and QoS that affect WG2-14 is reported to the CCB **Germany**	Completed
2/59	To provide results of Congestion Management Validation Activities **US**	Open
2/60	Initiate Liaison with the NATSPG **UK**	Closed
2/61	Inform ISO National Member Bodies of the continuing development of the ATN and the protocols used. **ALL**	Closed
2/62	Present proposals on WG2 liaison with WG1 and WG3 to the Working Group of the Whole **UK**	Closed
2/63	To provide comments on Work Plan to Mr. Sharma **ALL**	Open
	TOULOUSE WG	
3/1	Submit Change Proposal based on draft proposal attached to DR95010051 **Eurocontrol/CISEC**	
3/2	Send message to technical list announcing operation of new procedures **France**	
3/3	Check current status of ATN Manual requirements related to CLNP priority handling **US**	
3/4	Submit Operational Requirements **ALL**	
3/5	Provide comments on WP/87 **ALL**	
3/6	Incorporate comments on WP/87 and consolidate requirements from other input Working Papers **EUROCONTROL**	
3/7	To define the mechanisms necessary to support the optional non-use of IDRP. **CISEC**	
3/8	Issue Defect Report on OPTIMISATION 5 in WP/96 **EUROCONTROL/CISEC**	
3/9	Issue Defect Report on optimisations 1,2 and 3 in WP/96 **EUROCONTROL/CISEC**	

Ref	Deliverable	Status
3/10	Submit Defect Report & CP to mandate support of CLNP echo response function for CNS/ATM-1. **US/CISEC**	
3/11	Following technical agreement submit Change Request and draft Change Proposal to support implementation of the Addressing Convention for CNS\ATM-1 internet SARPs. **EUROCONTROL/CISEC**	
3/12	Submit WP/68 as Defect Report **EUROCONTROL/CISEC**	
3/14	To make Version 2.0 of the Draft SARPs available on the CENA ATN Validation Archive **France**	
3/15	Submit WP/79 follwing agreed amendments as a Defect Report/Change Proposal. **Germany/CISEC**	
3/16	Submit Change Proposal to CCB as per material in WP/85. **EUROCONTROL/CISEC**	
3/17	Submit Defect Report related to first & third issues in WP/78. **Germany/CISEC**	
3/18	Submit consolidated ES-IS defect report and include draft CP as per WP/86. **EUROCONTROL/CISEC**	
3/19	Submit Defect Report related to table A5-1 in Melbourne Flimsy #2. **Germany/CISEC**	
3/20	Submit VRCI(s) contained in WP/97 relevant to CNS/ATM-1 to CCB. **Germany/CISEC**	
3/21	To further detail proposed SARPs restructuring as documented in Flimsy 1 and its attachment. **EUROCONTROL**	