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16th October 1996

To: ATNP WG2 Members & Interested Parties

Report of the 10th ICAO ATNP WG2 Meeting
Alexandria, USA, 07-15 October, 1996

Please find attached the First Issue of the Report of the tenth ATNP WG2 meeting recently hosted by the FAA in Alexandria, VA. Any clarification relating to the proceedings of the meeting by those who have an interest but did not participate should be sent to me ideally addressed to the above Internet e-mail addresses.

The Alexandria meeting agreed a work programme, most of which must be completed prior to ATNP/2 meeting scheduled for November. Please ensure all agreed actions are completed as agreed and that, should the situation arise where you are unable to complete any agreed action let me know as soon as possible so that alternative solutions may be investigated.

Yours Sincerely

Akhil Sharma
(Rapporteur ICAO ATNP WG2 (ATN Internet WG))

ATNP/WG2/10/Report
16th October 1996

AERONAUTICAL TELECOMMUNICATIONS NETWORK PANEL
Alexandria, VA, USA

7th October 96 - 15th October 96

Issue 1.0

ATN Internet Working Group 2 (WG2)

Tenth Meeting Report

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 tenth meeting of Working Group 2 (WG2) of the ATNP which was hosted by the FAA in Alexandria, Virginia, USA in the period 7th - 15th October 1996.

Twenty nine experts from seven States (Australia, Canada, Japan, Germany, USA, France, UK) and four International Organisations (ARINC, SITA, IATA, EUROCONTROL) attended the meeting. The list of attendees is at Appendix A. A total of twenty eight Working Papers and eight Information Papers were submitted to the meeting, the list is at Appendix B.

Mr Sharma , Rapporteur of WG2, opened the meeting, welcomed the attendees and thanked the FAA for making the meeting arrangements.

Mr Jones welcomed the WG2 attendees on behalf of the FAA and explained the secretariat facilities that had been provided for the meeting.

2.   Agenda Item 1 - Approval of Agenda and Objectives

2.1   Mr. Sharma drew the participants attention to WP/329 comprising the agenda, a list of all known 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. Cardwell in advance of the meeting.

2.2   The meeting considered the objectives for the meeting as proposed in WP/329. The meeting agreed the objectives and these are reproduced below:

- to agree the WG2 Internet SARPs Validation Report

- to finalise the Internet Guidance Material

- to review and resolve CCB Recommendations

- to review ATNP/2 WG2 Related WPs

- to agree WG2 Future Work Plan up to the WGW

2.2.1   Mr Hennig asked whether there would still be a WGW meeting as the WG2 Validation Report already recommended acceptance of the SARPs. Mr Sharma responded that there would definitely be a WGW meeting as further WG2 related work was to be completed and the other WGs also had ongoing validation tasks that needed to be reviewed.

2.3   The meeting updated the list of Working Papers, the full list of meeting Working Paper is reproduced in Appendix B. In addition the meeting was informed that a full set of the SARPs sent to ICAO for language translation had been provided by the FAA for each attendee in the Secretariat Office.

2.4   The agenda as proposed in WP/329 was reviewed and agreed. The agreed agenda is reproduced in Appendix C.

3.   Agenda Item 2 - Approval of the Munich WG2 Meeting Report - Review of Action List

3.1   The report of the Munich meeting had been updated by Mr Cardwell the previous week and placed on the CENA Server. It incorporated all the comments received on the draft minutes. The report of the Munich meeting was agreed without further amendment.

3.2 The meeting reviewed the action list in order to assess the progress to date:

REF.	DELIVERABLE	Actionee	Complete by
	MELBOURNE WG		
	TOULOUSE WG		
	FAIR OAKS WG		
	ROME WG		
	BANFF WG		
6/31	To complete draft section 3 of guidance material	MR. SHARMA / MR. HENNIG	Closed
6/33	To complete draft section 5 of guidance material	MR. ROY	Closed
6/35	To complete draft section 7 of guidance material	MR. HENNIG	Closed
	BRISBANE WG		
7/22	Propose format for NSAP address repository on CENA archive	JM CRENAIS	Ongoing
7/24	To develop guidance material for VDL mode 3/CLNP priority mapping	USA	Closed
7/25	To develop guidance material related to TP4 timer settings	USA	Closed
7/26	To develop guidance material related to subnetwork priority invocation & use of the X.25 idle timer	H THULIN	Closed
7/27	To develop guidance material related to security label handling by transport service/entity	A SHARMA	Closed
7/28	To develop guidance material related to traffic type semantic and handling within ISs.	JM CRENAIS	Closed
7/33	Present results of NUT Concept Validation Trials	P HENNIG	Closed
7/39	Consolidate all available Validation Tool Descriptions	H HOF	Closed
7/41	Review ATN Specific PRLs with respect to replacing the words "use of" with "support of"	TBA	Closed
	BRUSSELS		
8/5	Investigate issues required to develop CP for DR100 (IDRP Timers)	CCB CHAIR	Closed
8/7	Continue Simulation work to determine optimum value for congestion management beta value.	MR. HOF	Ongoing
	MUNICH		
9/1	Check ISO Standard references in sub-vol. V, chapter 5 transport APRLs.	KP GRAF	Closed
9/2	To review WordPerfect version of SV5 Chapter 1	B CARDWELL	Closed
9/3	To review WordPerfect version of SV5 Chapter 2	JM CRENAIS	Closed
9/4	To review WordPerfect version of SV5 Chapter 3	I BARBULESCU	Closed
9/5	To review WordPerfect version of SV5 Chapter 4	P HENNIG	Closed
9/6	To review WordPerfect version of SV5 Chapter 5	S COSGROVE	Closed
9/7	To review WordPerfect version of SV5 Chapter 6	B CARDWELL	Closed
9/8	To review WordPerfect version of SV5 Chapter 7	M BIGELOW	Closed
9/9	To review WordPerfect version of SV5 Chapter 8	P WHITFIELD	Closed
9/10	To review WordPerfect version of SV5 Chapter 9	B CARDWELL	Closed
9/11	Translate figures into Corel Draw, changing Figs 5.4-1, 5.7-1, 2 & 3 as agreed	A HERBER	Closed
9/12	Ask WG1 to put a clear definition of AINSC Org. in Part 1 material	S COSGROVE	Closed

REF.	DELIVERABLE	Actionee	Complete by
9/13	Develop ATNP/2 paper to propose relocation of VDL SNDCF SARPs	A SHARMA	Closed
9/14	Prepare a defect report based on flimsy #2	T WHYMAN	Closed
9/15	Check SV1 glossary and ensure terms used by SV5 are not deleted	S COSGROVE	Closed
9/16	Develop potential solutions for WG3 traffic separation requirements and channel through the CCB.	H THULIN / H HOF	Closed
9/17	Coordinate review of WordPerfect SARPs Conversion	S COSGROVE	Closed
9/18	Check with Ron Jones if his paper (WP/184) will be included in SV1 guidance, where it is more suited.	S COSGROVE	Closed
9/19	Prepare guidance on hold down timer for section 2.8.7	H HOF	Closed
9/20	Development of guidance for ATN priority model (2.11)	TBA	Closed
9/21	Development of guidance for ATN security model (2.12)	TBA	Closed
9/22	Format GM & integrate WPs 320, 295, 235, 322 & 290	C PELLEGRINO	Closed
9/23	To review Version 1.3 Guidance Material & provide comments to next WG2 meeting.	ALL	Closed
9/24	Check with FAA and SITA if they can support the Guidance Material Drafting Meeting	A SHARMA	Closed
9/25	Confirm whether UK can host the GM drafting meeting 02-06 Sept.	A SHARMA	Closed
9/26	Include recommendation in WG1 ATNP/2 paper that WG2 GM is published as part of ATNP/2 report	S COSGROVE	Closed
9/27	Include WP/290 in section 8.4 and say it's for States wishing implement in this way within national boundaries.	C PELLEGRINO	Closed
9/28	Provide validation database access files & tool descriptions to Peter Whitfield	EUROCONTROL	Closed
9/29	Provide updated validation database files to Peter Whitfield three weeks before the October meetings to enable incorporation into validation report.	VALIDATORS	Superseded
9/30	Provide validation site manager E-mail details to Peter Whitfield.	A SHARMA	Closed
9/31	Edit the validation report, maintaining close coordination with JP Briand, and make a first draft available by the end of July.	P WHITFIELD	Closed
9/32	Provide comment on WP/312 to the WG1 meeting in Halifax.	ALL	Closed
9/33	Provide V6.0 SARPs aligned ATN requirements database to Peter Whitfield.	EUROCONTROL	Closed
9/34	Develop a draft ATNP/2 paper based on WP/289, WP/310 and the discussion in the meeting.	A SHARMA	Closed
9/35	Reformat WP/296 into an ATNP/2 Draft Paper	A SHARMA	Closed
9/36	Cross check WP/293 with list drawn up in Brussels and incorporate into section 5 of WP/296	A SHARMA	Closed
9/37	Develop draft ATNP/2 WP for WG2 Future Work Programme	A SHARMA	Closed
9/38	Submit Draft ATNP/2 Paper based on WP/297	A SHARMA	Closed
9/39	Update the ATNP/2 Working Paper List and attach to the minutes of the JWG	S COSGROVE	Closed
9/40	Include WG2 recommendations on addressing in the WG1 ATNP/2 paper on this subject	KP GRAF	Closed

REF.	DELIVERABLE	Actionee	Complete by
9/41	Investigate VDL SARPs and determine if they are sufficient for defining join and leave events, if not perhaps draft WP ATNP/2 for Halifax	TBD	Closed

4. Agenda Item 3 - Issues Arising out of other ATNP WGs & Other Related Bodies

4.1 Ms Cosgrove reported that an *ad hoc* Validation Report from WG1 may be available for information later in the meeting.

4.2 Mr Hennig provided an update of ATNSI status. As press releases had indicated, the two vendor teams have been selected. The three year programmes will start on 02 December 1996. North Atlantic (NAT) system evaluation is expected in Q2/99 with operational capability in Q4/99, in line with State plans. Mr Hennig would be presenting more comprehensive information to C/SOIT on Tuesday and will make the Powerpoint slides available as an Information Paper to this meeting.

4.3 Mr Hof provided the meeting with an update of the EUROCONTROL Reference ATN Facility (RAF) project. The contract has been let for the User Requirement phase of the project. The duration of this phase is 8½ months during which four User Requirement ("Requirement Management Team") meetings would be held. Mr Hof would also be presenting more comprehensive information to C/SOIT and will make his Powerpoint slides available as an Information Paper. Mr Hof invited anyone interested in the RAF project to contact him directly.

4.4 Mr Hennig reported that the IATA Flight Operations Committee had tasked the Datalink Committee to develop a report considering migration to CNS/ATM-1 functionality. The first report is due during the first week of December. Mr Hennig will issue the report on the atn-technical mailing list as it becomes available.

4.5 Mr Sharma commented that the AMSS SARPs had been issued for State comment and that use of the State letter to relocate the SNDCF aspects of the VDL SARPs needed to be considered. This would be discussed in more detail later in the meeting (WP/341).

5. Agenda Item 4 - Review of the WG2 Validation Report

5.1 Mr Hof introduced WP/340, "Proposal for Input to the WG2 Internet SARPs Validation Report". This working paper was a combined European paper containing validation reports of the European validation exercises. In Attachments to the WP, each validation task was presented in the same format including: participating states/organisations, validation tool descriptions, validation objectives, AVO coverage, results, conclusions and future work where applicable. Mr Hof invited the representative of each Validation task in the WP to present the work.

5.1.1 Mr Briand presented Attachment E, "EUROCONTROL Analysis Exercise". Mr Herber presented Appendix F, "DFS Validation Initiative Summary Report". Mr Tamalet presented Attachment G, "EURATN". Mr Sharma presented Attachment H, "ADS Europe". Mr Kircher and Mr Sharma presented Attachment I, "European Cooperative Simulations". Mr Hof presented Appendix J, "IATA/EUROCONTROL Live ATN Demonstration". Mr Briand presented Appendix K, "European Cooperative Experiments".

5.1.2 Mr Hof summarised the WP by stating that it was a true European Report owned by all the States and Organisations that had contributed to it. It was the result of years of detailed work and it concluded that there is a high level of confidence in the SARPs and that they should be adopted at ATNP/2 as proposed by ATNP/2-WP6. The paper was offered as the basis of the WG2 Internet SARPs Validation Report and other validation tasks should be included as they became available, particularly the SITA and FAA work for which WPs are to be presented.

5.1.3   The meeting agreed that WP/340 would form the basis of the WG2 Internet SARPs Validation Report to the ATNP/2 meeting.

5.2   Ms Thulin presented WP/346, "Validating ATN with VDL". The WP detailed the joint activity of American Airlines, Rockwell Collins and SITA in validating the use of the VDL for the ATN. The WP concluded that the validation criteria (requirement implementation, interoperability, satisfying user requirements and good performance) had been met and that the VDL protocol can be implemented as specified in the SARPs. It was agreed that WP/346 would be incorporated into the WG2 Internet SARPs Validation Report.

5.3   Mr Feighery presented WP/348, "U.S. Validation Report on the ATN Sub-Volume 5". This paper captured 3-4 years of validation of the ATN SARPs using both prototyping and simulation techniques. The paper concluded that in the validation work undertaken no technical defects had been discovered in the SARPs but commented that the Guidance Material needed to emphasise implementation strategies and organisational coordination to avoid implementation problems.

5.3.1   Mr Hennig asked if it was possible to identify precisely the areas of concern. Mr Feighery referenced the notes at the end of section 4, i.e. routing policies and IDRP/transport timer settings. It was agreed that the review of the current GM would determine if these concerns were addressed, in which case the paper could be updated to state the GM covered these areas of concern.

5.3.2   Mr Sharma asked about the comment against AVO_112, "Satellite system unstable". Mr Feighery explained that instability on the satellite links had prevented validation of this AVO. Mr Sharma commented that the ADS Europe validation reported in WP/340 had successfully covered this AVO.

5.3.3   It was agreed that WP/348 would be incorporated into the WG2 Internet SARPs Validation Report.

5.4   Mr Tamalet briefly presented WP/356, "Appendix G of WP/340 - An Example", provided to the meeting as an Information Paper. The IP was an extension of Attachment G of WP/340 regarding the EURATN Validation Tool.

5.5   Mr Sharma summarised the discussion on the WG2 Validation Report, concluding that WP/340 would form the basis of this Report and that WP/346 and WP/348 were to be incorporated. Mr Sharma encouraged other validation exercises or planned validation exercises to be recorded in the document. Other attendees agreed to consider if there was anything they could provide on these lines.

5.5.1   Mr Briand was appointed as the Editor of the WG2 Validation Report and was tasked with producing Flimsy #1, listing changes made to WP/340 to form the Report. Ms Thulin and Mr Feighery would help Mr Briand incorporate their WPs into the Report.

5.5.2   Mr Sharma reported that Mr Jones would arrange for ICAO to receive a hard copy of the WG2 Validation Report.

5.5.3   Mr Briand commented that there may still be AVOs that were not covered in the WG2 Validation Report. He was directed to list any unvalidated AVOs in Flimsy #2 and the meeting would consider what could be done to resolve any problems that arise.

5.6   Mr Briand presented WP/354, "Internet Communication Service Requirements Database Guidance" which recorded the history, the current status of the ICS RDB and instruction on how to use it. The WP recommended that the ICS RDB be included in the SARPs CCB process and that the WG2 endorse the ICS RDB at a future meeting.

5.6.1   It was apparent that the ICS RDB had been widely used and ongoing support was encouraged. The meeting agreed that the CCB procedures should be modified to include the ICS RDB and tasked the CCB Chair to complete that task.

ACTION 10/1 - CCB CHAIR - MODIFY CCB PROCEDURES TO INCLUDE THE ICS RDB.

5.6.2   The meeting endorsed the ICS RDB and believed that it should be given visibility at the ATNP/2 meeting as it was a valuable aid to procurement of SARPs compliant products. A Draft ATNP/2 WP needed to be developed, Mr Hof agreed to produce this (Flimsy #3).

6.   Agenda Item 5 - Review of Internet Communications Service draft SARPs (Version 6.0)

6.1   A final paragraph by paragraph review of the SARPs was commenced. It was immediately obvious that there was a problem with the bound copy of the Internet SARPs provided at this meeting. There were a number of errors in the Table of Contents and this led to discussion about what was actually being reviewed. It was determined that it was the Word Version 6 SARPs from the Working Paper Archive at Munich. This did not seem to match exactly the Word Version 6 SARPs posted on the CENA Server after the Munich meeting. The review was postponed while the issue was clarified.

6.2   It was decided that any editorial errors found in the SARPs review would be collated by Ms Cosgrove in Flimsy #4. Once the number and type of errors was clearly defined in the Flimsy, the meeting would consider how best to report the changes required to ICAO.

6.3   The meeting moved onto Agenda Item 5.1.

7.   Agenda Item 5.1 - Report of the CCB

7.1   Ms Cosgrove presented WP/334, "WG2 Configuration Control Board Activity" which provided an overview of the DRs and CPs submitted since Munich and their status. The meeting reviewed the WP and requested Ms Cosgrove to work with the available CCB members, and anyone else that wished to join them, to complete the DRs and CPs that were still pending and summarise the results in a Flimsy (#5).

8.   Agenda Item 5.2 - Review of CCB Proposed Changes to Version 6.0

8.1   Mr Herber presented WP/335, "Review of Transport APRL", which was prepared to complete action 9/1. The paper provided a list of editorial corrections to the Transport APRL tables which had been submitted to the CCB (CP72). The CP was accepted by the meeting and Ms Cosgrove was asked to incorporate the changes listed in WP/335 into Flimsy #5.

8.2   Mr Herber presented WP/336, "Editorial Defects in the ATN Network Addressing Specification and Proposed Resolution", which provided a list of editorial errors and proposed corrections to Chapter 5.4 of the SARPs. This information had been submitted to the CCB (DR117) and was accepted by the meeting. Ms Cosgrove was asked to incorporate the changes listed in WP/336 into Flimsy #5.

8.3   Mr Herber presented WP/337, "Editorial Defects in the IDRP APRLs and Proposed Resolution". This paper provided a list of editorial corrections to the IDRP APRL tables which had been submitted to the CCB (DR116). The changes were accepted by the meeting and Ms Cosgrove was asked to incorporate the changes listed in WP/337 into Flimsy #5.

8.4   It was decided that Flimsy #5 should contain CPs as Appendices. One CP would list all editorial changes that arose from the para by para review of the SARPs (i.e. Flimsy #4), technical changes to the SARPs would be recorded in individual CPs each with an explanation of the required change.

8.5   Ms Cosgrove reported that she could continue as CCB Chair until the Panel Meeting. As there were no immediate volunteers to replace her, the Rapporteur asked the attendees to consider the requirement for a new CCB Chair at the Panel meeting. The CCB membership was confirmed as Mr Graf representing Germany, Mr Tamalet representing France, Mr Briand representing EUROCONTROL, Ms Thulin Representing SITA and Mr Bigelow representing ARINC. Mr Feighery reported that he was unable to continue as CCB member for the USA and a replacement would be nominated.

9.   Agenda Item 5 (Continued) - Review of Internet Communications Service draft SARPs (Version 6.0)

9.1   The para by para review recommended based on the Word version of the Version 6 SARPs posted on the CENA server. The editorial changes were recorded by Ms Cosgrove for incorporation into Flimsy #4 and thus Flimsy #5.

9.1.1   One change required a flimsy (#6) to correct some of the tables in section 5.3.5 which use the ^ character to indicate both NOT and OR.

9.1.3   Mr Briand pointed out that table 5.8.3.4.10 was a repeat of table 5.8.3.4.7, an historical editing error. It was agreed that 5.8.3.4.10 should be deleted and later tables renumbered. Mr Briand was tasked with checking any cross references to the later tables existed and thus need updated.

> ACTION 10/2 - JP BRIAND - DETERMINE IF ANY CROSS REFERENCES REQUIRE UPDATE AFTER TABLE 5.8.3.4.10 IS REMOVED

9.2   There was discussion of how ICAO would be informed of the changes to the SARPs agreed by the working group. The conclusion was that a hard copy of the revised SARPs would be provided, baselined against the version 6 SARPs. This was the text that was translated into WordPerfect and provided to ICAO and thus a hard copy of the changes would provide ICAO with the information they require. After consulting the Panel Secretary, Mr Sharma stated that the Panel Secretary's preference was that agreed changes should be presented at the Panel meeting for information but not approved for amending the SARPs until the WGW meeting in March 1996.

10.   Agenda Item 5.3 - General

10.1   WP/349, "Achieving a Cost Effective ATN", was introduced by Mr Jones. He explained that the motivation behind the WP was to enable greater use of COTS implementations in the FAA ground infrastructure. The WP contained two proposed changes, non-use of the CLNP Security Label and ground initiation of non-use of IDRP on the air/ground link.

10.1.1 Mr Jones explained that when purchasing an End System it was desirable to implement the OSI stack (up to level 4) already available (i.e. COTS) for that ES. The use of the Security Label currently prevents this and was therefore considered to increase End System costs. He commented that COTS stacks do not have priority mapping either. The FAA currently only see the need for one priority in their perceived applications (i.e. ATSC), and thus dynamic mapping of priority would probably not really be needed in a majority of FAA implementations. Mr Jones commented that alternative ideas for handling of the security label problem had been developed, he gave an overview of the alternatives and commented that they were not included in the working paper.

10.1.2 In expanding on the IDRP proposal, Mr Jones explained that the change was to permit ground routers to negotiate non-use of IDRP over the air/ground link, taking advantage of the optional non-use facility provided for aircraft in the SARPs. Having provided and overview of WP/349, Mr Jones asked Mr Feighery to present the technical detail in WP/349.

10.1.3   Mr Sharma proposed general discussion following the presentation of the paper, but commented that the WG could only make decisions on the information presented in the WP, rather than the verbal alternatives presented. The main points of the IDRP discussion are summarised below:

- Mr Herber commented that the WP was presented as minor changes to the SARPs but actually changes the whole ATN concept. Further it appears to propose deviation from COTS products rather than alignment.
- Mr Hof commented that the proposed changes were not modest and were being presented very late. This was not the way to develop standards, the proposals had all been discussed in earlier WG meetings but were being presented again at the last minute. Mr Hof questions whether the impact on the avionics had been adequately considered.
- Mr Hennig spoke from the avionics view point. He commented that the optional non-use of IDRP was only in the SARPs because of the perceived limitations in avionics systems. IATA had worked hard to determine that the benefits of IDRP were worthwhile and it could be supported. Optional non-use only remained in the SARPs because when full support was given, it was considered too late to remove it. He commented that he was very confused as it now appeared that the argument was that ground systems couldn't easily support IDRP.
- Mr Sharma sought clarification regarding the number of Ground BISs the FAA were planning to deploy. Mr Jones commented that a complete implementation plan had not been completed but that around 20 ground BISs were expected.
- Mr Jones explained that the USA had approx. 6000 international aircraft but 250,000 other aircraft that would not benefit from IDRP as they would not leave an administrative domain non-use of IDRP would enable cost savings on the ground.
- Mr Hennig commented that the cost savings on approx. 20 ground routers would be transferred many times over onto 1000's of avionics systems as aircraft transiting between Administrative Domains supporting IDRP an those that didn't would need to support both options.
- Mr Hof commented that the whole proposal did not seem to enable the greater use of COTS products and transferred costs onto airborne systems.
- Mr Crenais reinforced this point, saying that everyone supported the concept of saving money but that the cost of the whole system needed to be considered, not just a part of it.

10.1.4   Mr Sharma concluded that the consensus of the meeting was the IDRP proposal was unacceptable and the SARPs should remain unchanged. Mr Jones asked that the report of the meeting reflect the discussion. It was agreed that a Flimsy (#7) would be produced to achieve this. Mr Whitfield would edit the Flimsy assisted by Mr Crenais, Mr Hof, Mr Feighery, Mr Hennig, Ms Thulin and Mr Herber.

10.1.5   Mr Jones offered to arrange a Flimsy (#8) to explain the alternative options for handling the Security Label proposed in the presentation of WP/349. He clarified, at Mr Hennig's request, the that the FAA did want to separate the IDRP and Security Label proposals presented in WP/349. Both changes were aimed at greater use of COTS products and could be handled separately. Flimsy #8 would be reviewed later in the meeting.

10.2   Mr Jones introduced WP/338, "Revised Transport Timer and Protocol Parameter Settings". He explained that there was no change between the main body of the document and that presented in Munich as WP/290, i.e. the WP was proposing that all implementations are configured to use Transport timers within the max./min values in the Table, at least as initial settings.

10.2.1   The values were derived from a Mayflower simulation, a report of which was attached as Appendix A of the WP. MITRE had looked the impact of variance of timer values from standard values on performance. The result was that the FAA were unwilling to accept the SARPs as validated unless some recommendation were given regarding the initial settings of timer values to enable interoperability. The WP proposed new SARPs text and a table for inclusion.

10.2.2   There was lengthy discussion about the contents of the paper. Ms Thulin was not convinced that a general recommendation for transport timer settings could be made as the proposed values were optimised for a/g applications. The issue was the cost of more frequent exchange of PDUs to give confidence that the link was

available versus fewer exchanges but the added risk of a link not being available when required. There were also factors of communications service performance, better performance would allow less frequent exchange of PDUs, and application message rates, infrequent exchange of messages may result in disproportionate costs weighted on the link maintenance.

10.2.3   Agreement was reached that a set of values may be useful for initial implementations however there was concern that the proposed values for the window and re-transmission timers were too high. However in the absence of any presented alternative values it was agreed to use the values in WP/338. There were some editorial changes to the proposed SARPs text and the new text had an impact on the APRL table. Mr Cossa agreed to correct and collate the relevant material and present it as a Flimsy [#9].

10.3   Mr Herber introduced WP/345, "On Adaptive Re-transmission Timers in OSI TP4", which presented a report of a study into the benefits of dynamically adjustable re-transmission timers. The report showed that benefits could result from adaptive timers. Although the WP proposed text for SARPs changes, Mr Herber requested that the paper be used at this time as the basis of future work. Mr Sharma commented that it was very useful work, and that it would make a useful contribution to the future work in this area.

10.4   Mr Cossa presented WP/362, "Comments on WP/345", which added to the discussion on adaptive timers. The WP commented that the work reported in WP/345 appeared to be related to ground ground networks and cautioned that algorithm should cite the original source rather than repeat it as there was scope for confusion.

10.4.1   Mr Herber responded that the work was independent of subnetwork type. Mr Sharma cut the discussion short, commenting that WP/345 was directed to the future work item and that both that WP and WP/362 should be seen in that light and re-visited after ATNP/2.

11.   Agenda Item 6. - Review of Internet Communications Service Draft Guidance Material (Version 1.4)

11.1   Mr Sharma opened this agenda item by stating that if the GM could be agreed by the end of the meeting then it could be sent to ICAO for inclusion Annex as Green Page material if deemed appropriate by the WG. The Guidance Material was complete apart from Chapter 2 which was expected later in the meeting.

11.2   Mr Cardwell briefly presented WP/344, "Report of the Guidance Material Drafting Group Meeting". The Drafting Group had met in London from 02 - 03 September and restructured the GM into a new layout, as shown in the WP. The purpose of the restructure was to leave introductory high level material at the front of the document, and to move the detailed information into subsequent chapters.   As the structure was new and there was some new material, Mr Cardwell recommended a page by page review of the Version 1.4 GM, as presented in WP/331.

11.3   WP/331, "Version 1.4 Sub Volume 5 Guidance Material", was reviewed page by page. Mr Crenais recorded the comments of the Working Group and undertook to reissue the document during the meeting.

11.4   There were several Working Papers containing additional GM to review, but in order to keep to the timescales of the meeting, Flimsy #2, "AVO Coverage Summary" was reviewed next.

12.   Review of Flimsy #2, "AVO Coverage Summary".

12.1   This flimsy, presented by Mr Briand, was a summary list of those AVOs not currently addressed in the WG2 Validation Report. The AVOs were discussed and the following conclusions were agreed:

- AVO_203 - the work required for coverage of this AVO had clearly been done but none of the Validation Initiatives had been directed specifically at this AVO. Those initiatives that contributed indirectly to this AVO would be listed against it, also the base standard itself could provide some degree of validation confidence.

- AVO_312 - problems had been experienced in the validation of this AVO, the meeting concluded that 1) there was no useful indication of expected traffic levels available, traffic management is a design/implementation issue anyway and the Congestion Management and IDRP simulation exercises do provide validation coverage.
- AVO_409 - this had been covered in the DFS work.
- AVO_423 - this should be in the ADS Europe report as that report did target AVO_422 on the same topic.
- AVO_429 - the TAR acceptance report contributed to this AVO.
- AVO_435 - the Congestion studies contributed to this AVO, but didn't address priority. This is planned as an extension of that work. The conclusion was to add a future work section to the Validation Report and list this AVO there.
- AVO_442 - both the US and SITA Validation reports contributed to this AVO.
- AVO_443 - the Congestion Management studies contribute to this AVO.
- AVO_445 - as AVO_442.
- AVO_470 - this AVO had been deleted at a previous WG2 meeting.
- AVO_451 - the TAR acceptance work contributed to this AVO, but it should also be listed under future work.
- AVO_452 - future work.
- AVO_456 - covered in the FAA Report.

12.2   Mr Briand would update the WG2 Validation Report with this new information. He also got agreement to amend Attachment C of the report to provide a coverage index rather than listing the level of coverage. Only AVO numbers would be used, not the AVO text as well.

13.   Agenda Item 6 (Continued) - Review of Internet Communications Service Draft Guidance Material (Version 1.4)

13.1   Ms Thulin presented WP/347, "Guidance for Implementation of the Mobile VDL and AMSS SNDCFs", proposed GM for section 7.2 and 7.3 (with reference to GM V1.4). The paper contained introductory material as well as proposed guidance material and drew upon results of validation exercises.

13.1.2   Whilst the paper was considered useful, it didn't offer exact text suitable for direct incorporation into the Guidance Material. Ms Thulin suggested that text along the lines of sections 4 and 7 of her paper were really needed in the Guidance Material and agreed to produce Flimsy #10 with text suitable for direct inclusion in the GM.

13.1.3   The WP commented that use of AMSS priority level 14 caused alarms at Service Provider GESs. This priority level is used for System Management messages (ISH PDUs) and the paper recommended using a lower priority. This issue was discussed and it was apparent that a lower level could be used as long as it were higher than the all application priorities. Ms Thulin questioned whether it was appropriate to exchange routine system management messages at level 14 as it also had a cost implication. Mr Hof commented that distress or emergency communications needed to be established immediately and that the SARPs did not provide alternative call types.

> ACTION 10/3 - MS THULIN - CARRY OUT MORE RESEARCH TO REGARDING AMSS PRIORITY LEVEL CHOICES AND PRIORITY LEVEL ALARMS.

> ACTION 10/4 - MR SHARMA - LIAISE WITH AMCP REGARDING PRIORITY LEVEL SETTINGS.

13.1.4   The WP also recommended non use of IDRP on the air/ground link, based solely upon bandwidth considerations. Upon further inspection it was apparent that there was no actual analysis of the extra overhead caused by IDRP and the recommendation was withdrawn by Ms Thulin.

13.2   The meeting returned to the final sections of the version 1.4 GM. The priority issue also occurred in the AMSS Subnetwork. Mr Herber agreed to produce a Flimsy [#11] regarding the use of priority by Mode S and the effect this had upon the SARPs (note 1 in section 5.2.8.5.1.1).

13.3   Mr Sayadian presented WP/355, "Addressing Guidance for the Diverse Ground-Based Subnetworks". This WP was an extension of the information provided in WP/290. Whilst the WP did contain suitable material for the GM, it was not in the right format for direct inclusion. Mr Sayadian agreed to produce a flimsy [#12] modifying WP/355 and providing text suitable for the GM.

13.4   Mr Sharma reported that the WP providing text for Chapter 2 of the GM was still not available. In discussion outside the meeting it had been agreed that Mr Whyman would write the material, on behalf of EUROCONTROL, and make it available by Monday 14th. Mr Herber expressed his thanks to EUROCONTROL for stepping in at this late stage to ensure the guidance material was complete.

13.5   Having completed the review of the existing GM, Mr Sharma checked whether Mr Feighery still had concerns that were not adequately covered by Guidance (as the conclusion of WP/348 had indicated earlier in the meeting). Mr Feighery stated that concerns still remained and he was asked to document those issues in a Flimsy [#13].

14.   Review of Flimsy #3, "Draft ATNP/2 WP on the ATN ICS RDB".

14.1   Mr Hof presented Flimsy #3, produced at the request of the Working Group to bring the ICS RDB to the attention of ICAO member States and Organisations. Minor modifications were made to the proposed text and Mr Hof agreed to update the Flimsy accordingly and attach an ICAO ATNP/2 WP cover page. The final text of the Flimsy, excluding the cover page is included in Appendix D.

15.   Review of Flimsy #6, "Use of Boolean Operators in APRL Tables".

15.1   Mr Whitfield presented Flimsy #6, proposing corrections to the APRL tables were the ^ symbol was used incorrectly. The proposed changes were accepted and Ms Cosgrove was requested to include the changes as a CP in Flimsy #5. The text of Flimsy #6, with change bars added, is included in Appendix E.

16.   Review of Flimsy #7, "WG2 Response to WP/349".

16.1   Flimsy #7, "WG2 Response to WP/349" was presented by Mr Whitfield. A number of comments were made on this first draft of the Flimsy, the major points being: a restructure of the flimsy was agreed, separate sections would address the response to the IDRP and Security Label proposals; the text was edited to address more precisely the IDRP proposal in WP/349. Mr Whitfield would prepare an updated version of the flimsy and incorporate the outcome of the discussion of Flimsy #8 on the Security Label.

17.   Review of Flimsy #8, "Additional Information Related to WP/349".

17.1   This Flimsy was presented by Mr McParland and provided an explanation of the alternative method of dealing with the security label that was discussed during the review of WP/349. The proposed change to the SARPs was to add a note to the SARPs stating that the handling of the Security Label within an Administrative Domain was a local matter. After clarifying that this had no impact upon international interfaces, and reinforcing this with additional text in the note, the Working Group agreed to the addition of the note to the SARPs. Mr McParland agreed to update the Flimsy in line with the discussed changes and Ms Cosgrove was directed to include the SARPs change in Flimsy #5. Mr Whitfield was asked to update Flimsy #7 to capture the WG discussion on this subject. The final text of Flimsy #8 is included in Appendix F.

18.   Review of Flimsy #9, "Transport Timer and Protocol Parameter Settings".

This Flimsy was presented by Mr Cossa. There was further discussion regarding the suitability of the timer settings for ground ground applications and Ms Thulin wanted additional wording to allow flexibility. It was agreed that the simulation work that had determined the timer values did not cover ground ground applications, but Mr Cossa considered the values proposed to be suitable starting points for the timers, even for g/g applications in the absence of any replacement values. New text was proposed and Mr Cossa agreed to update the Flimsy and to look at the definition of "offset" and include any impact on the APRL table. The allocation of the timer values proposed impact upon the Guidance Material, Mr Crenais would produce a Flimsy [#14] to amend the GM.

19. Review of Flimsy #10, "Proposed Replacement of Section 7.3".

19.1   Ms Thulin presented Flimsy #10, produced from WP/347 and proposing replacement text for the Guidance material. The Flimsy was reviewed para by para and a number of editorial revisions made. Ms Thulin agreed to update the Flimsy and make it available for Mr Crenais to incorporate into the Guidance Material.

19.2   During the review of the flimsy, Ms Thulin reported that the AMSS SARPs contain the priority table used as the source of the table in Flimsy #10 and that the AMSS have reserved priority levels 12 and 13. ATN could use 14 for system management messages but should inform AMSS of this intention. Mr Sharma agreed to draft a Flimsy [#15] to communicate this intention to AMSS.

20. Review of Flimsy #12, "Proposed GM for section 7.4".

20.1   Mr Sayadian presented this flimsy, which was requested after review of WP/355. The flimsy was reviewed para by para and minor editorial changes were made. A few changes to references were proposed. It was agreed that an update of the Flimsy would be beneficial to enable direct insertion into the GM and Mr Fieldhouse agreed to undertake this.

21. Review of Flimsy #1, "WG2 Validation Report".

21.1   Mr Briand presented Flimsy #1, "The WG2 Validation Report" which had been prepared as requested, based upon WP/340, WP/346, WP/348 and the comments made on each during their review. Mr Briand explained that the WG2 Validation Report would be Appendix J to ATNP2/WP-6, not Appendix I as originally believed. A detailed review of the main text of the report was carried out and a general review of the Attachments. Only general editorial comments were made, although section D.8 still awaited the conclusion of Flimsy #13. Mr Briand would incorporate the comments after conclusion of Flimsy #13 and make the final soft version available to the WG. A copy was to be sent to ICAO in preparation for the Panel meeting. Mr Sharma concluded that a great deal of work and coordination had gone into the production of the report which ultimately recommended adoption of the draft ATN ICS SARPs at the Panel meeting. Mr Sharma thanked Mr Briand for the work he had contributed during the meeting in editing the WG2 Validation Report.

22. Review of Flimsy #13, "Additional Information Related to WP/348, US Validation Report".

22.1   Mr Feighery presented Flimsy #13 which focused on the US concerns raised in their validation efforts. The particular concerns were listed and explained. Discussion raised the issue of IDRP timer identification and usage. As a result of the discussion, Mr Feighery agreed to update the Flimsy and re-present it.

23. Review of Flimsies #4, "List of Editorial Defects in Version 6.0 of the ICS SARPs" & #5 "Update of WG2 CCB Activity".

23.1   Ms Cosgrove presented Flimsy #4 and Flimsy #5. Flimsy #4 was the current list, presented in tabular format, of editorial defects discovered during the SARPs review arising from various WPs at WG2/10. Flimsy #5

listed the status of the CPs/DRs, a proposal for document control of the ICS SARPs and a complete list of CPs after the CCBs review of WP/334.

23.2   The flimsy showed that all DRs and CPs raised since Munich had either been resolved, withdrawn or rejected, except for CP82 which was still pending a decision. A decision on CP82 would be taken during the meeting and incorporated into a later version of the document.

23.3   Mr Sharma reported that the Panel Secretary had indicated a preference for the proposed changes being presented at the Panel meeting for information only and then being proposed for adoption at the WGW meeting in Q1/97. WG3 intended to proposed their changes for adoption at the Panel meeting in order to give ICAO more time to incorporate the changes. There was agreement to follow the WG3 proposal and submit the proposed changes for adoption at the Panel.

23.4   The proposal regarding document maintenance was deferred to the Joint Working Group meeting later in the week. However discussion on the subject showed a preference for supporting the proposal and maintaining a Word version of the SARPs. The WG2 position for the JWG meeting was, based upon what was know n at the time, a preference for document maintenance in Word and not WordPerfect.

23.5   Ms Cosgrove agreed to maintain Flimsy #5, incorporating any other changes that may be necessary if pending flimsies were accepted, and re-format the flimsy as the WG2 attachment to ATNP/2 -WP-31.

24.   Review of Flimsy #7, "WG2 Response to WP/349", Issue 2.

24.1   Mr Whitfield presented the updated flimsy #7. A further re-edit occurred, focusing the response more closely on the proposals made in WP/349 and Flimsy #8. The cost issues and impact on avionics systems were stressed. A further version of the Flimsy was requested and later agreed. It is included in Appendix G.

25.   Review of Flimsy #9, "Transport Timer and Protocol Parameter Settings", Issue 3.

25.1   Mr Cossa presented the updated Flimsy #9. The new version was agreed except that the change to the APRL table had been omitted. Mr Cossa agreed to update the flimsy and place it on the archive. Ms Cosgrove was asked to ensure that the draft SARPs changes were captured in the update of Flimsy #5. The final version of the Flimsy is included in Appendix H.

26.   Review of Flimsy #12, "Proposed GM for section 7.4", Issue 2

26.1   Mr Fieldhouse presented Flimsy #12. The flimsy was agreed with minor editorial modifications to the text. Mr Fieldhouse would place an updated version of the Flimsy on the archive and Mr Crenais would incorporate the new material into the draft Guidance Material. The final text of the Flimsy is included in Appendix I.

27.   Review of Flimsy #11, "Subnetwork Priority Mapping"

27.1   Mr Herber presented Flimsy #11, produced to clarify the draft SARPs text regarding Mode S subnetwork priority. The flimsy resulted in much discussion and it was apparent that this subject needed further investigation. Mr Herber agreed to produce a defect report and issue it to the CCB. The flimsy is included in Appendix J.

> 10/6 - MR HERBER - REVIEW SECTION 5.2.8.5.1.2, PARTICULARLY PARAS C) &D), FOR CONSISTENCY AND HIGH PRIORITY MAPPING - SUBMIT A DR & DRAFT CP TO THE CCB.

28. Review of Flimsy #13, "Additional Information Related to WP/348, US Validation Report", Issue 2

28.1   Mr Feighery presented an updated Flimsy #13, incorporating the changes discussed during the earlier review. There was further discussion regarding the naming of timers and a few general comments. It was agreed that a further update would be beneficial and Mr Feighery agreed to do this.

29. Review of Flimsy #15, "Use of AMSS Priority Channel 14"

29.1   Mr Sharma presented Flimsy #15, produced a result of the problem identified in WP/347 where GES alarms occur when priority 14 data is transmitted. The flimsy outlined the problem and recommended referral to WG1 for resolution as the priority mapping table is in their area of responsibility.

29.2   Discussion on the flimsy resulted in a list of options for resolution being added to the Flimsy. The final text of the flimsy is included in Appendix K.

30. Review of Flimsy #16, "GM for the ATN ICS SARPs, List of Changes between version 1.4 and version 1.5"

30.1   Mr Crenais presented flimsy #16 and its attachments: Version 1.5 of the GM; an updated front page, foreword and table of contents; and an updated chapter 7. The material included all the changes agreed in the Working Group meeting and Mr Crenais recommended a review of the new material.

30.2   Minor editorial comments were received on the new material up to chapter six. A need for high level route initiation information in chapter two was identified, Mr Herber agreed to draft a Flimsy [#17] with proposed text.

30.3   Chapter seven was reviewed in more detail and Mr Sharma reminded the WG that the purpose of GM was to explain what is in the SARPs and to help implementors. It became apparent during the review of chapter seven that it still needed major work and, given that it would not be possible to see any printed revised material in the meeting, it was decided to remove chapter seven from the GM. There was some support for a much shortened Chapter seven, containing a few high level points, but the final consensus was to remove it completely. This needed to be reflected in WP/365, the draft ATNP/2 paper proposing the WG2 Guidance Material and Mr Crenais undertook that task.

30.4   Mr Adnams offered that EUROCONTROL could manage the creation of a revised Chapter seven, using existing and new material. This offered was accepted and Mr Adnams commented that it might be possible to have the material for review before the end of the JWG later in the week.

> 10/7 - MR ADNAMS - ARRANGE THE PRODUCTION OF A RE-EDIT OF THE CHAPTER SEVEN GUIDANCE MATERIAL.

31. Review of Flimsy #13, "Additional Information Related to WP/348, US Validation Report", Issue 3

31.1   Mr Feighery presented issue 3 of his flimsy regarding US concerns resulting from their ATN Validation programme. After minor editorial corrections the Flimsy was agreed and is included in Appendix L. Mr Crenais would include the relevant aspect of the Flimsy in V1.5 of the GM and Mr Briand would include Validation information in the Validation Report.

31.2   Mr Briand reported that the final version of the WG2 Validation Report would be placed on the server, no new printed copy would be distributed because of the size of the document and the few changes it contained. The

final copy would be on the archive along with a change barred version to show the changes to those that were interested. Mr Sharma thanked Mr Briand for his efforts in completing the Validation Report.

32.   Review of Flimsy #17, "Extension of Section 2.4 Guidance Material"

32.1   Mr Herber presented Flimsy #17, which provided high level material regarding route initiation. The material was accepted, with some editorial revision, for inclusion in the GM. The final version of the Flimsy is included in Appendix M.

32.2   Mr Crenais would make the final changes to the GM and place a copy on the archive. Again owing to the size of the document, a final printed version would not be distributed but soft copies would be available from the archive. Mr Sharma thanked Mr Crenais for his work as Editor of the Guidance Material during the meeting.

33.   Outstanding Issues.

33.1   Mr Herber presented WP/364, "Further Explanations on Adaptive Re-transmission Timers in TP4", a response to WP/362 on the same subject. Mr Herber explained that the paper clarified some of the points raised in WP/362 and requested that the material be taken into account in the future work, after ATNP/2, on the subject of TP4 Timers.

33.2   Mr Hennig presented, as an Information Paper, WP/357 , "ATNSI Status", the Powerpoint presentation he had given at the recent C/SOIT meeting. The presentation would also be given at the ATN Datalink Forum in Nice in November. The WP summarised the ATNSI programme status, with contract status and timescale information.

33.3   Mr Hennig presented, as an Information Paper, WP/359, "IATA Proposal for Backward Compatibility (WG3 WP)". The WP proposes migration/transition strategies from FANS-1/A to CNS/ATM-1 for ADS and CPDLC applications. A revised version of this paper will be presented by IATA at the Panel meeting.

33.4   Mr Hennig presented, as an Information Paper, WP/363, "Draft report of NATSPG Agenda Items 1, Developments". Mr Hennig commented that it had been expected that timescales would be discussed at the meeting for CNS/ATM-1 operation in the NAT region. This did not occur, however the IP still provided useful information on current plans in the NT region.

33.5   Mr Sharma reported that ARINC had offered a Validation Report for the WG2 Validation Report for ATNP/2. However, it was too late to incorporate this into the WG2 Validation Report and would be presented directly at ATNP/2.

33.6   Mr Sharma reported that EUROCONTROL had indicated that the draft Chapter 7 Guidance Material would be available during the JWG. It was proposed, and agreed, that a sub-group of WG2 members reviewed the material and, if it were suitable, submit it as part of the ICS Guidance Material for proposed adoption at ATNP/2.

34.   Agenda Item 7. - Preparation for ATNP/2

34.1   Mr Sharma listed the Working Papers against this item, all ATNP/2 Working Papers and commented that all attendees should have seen the papers before as they had been available for some months (except for WP/333, from ICCAIA).

34.2   Mr Sharma reported that, for personal reasons, he may not be present for the entire ATNP/2 meeting. He thought it would be prudent to have a WG2 member prepared to present the WG2 Rapporteur WPs at ATNP/2, if necessary, and asked for a volunteer. Mr Hennig commented that it would be better to have a State representative in reserve. In the absence of a volunteer, Mr Sharma explained that Mr Cardwell would be prepared to stand in if necessary.

35.   Agenda Item 7.1 - Review of relevant ATNP/2 Working Papers

35.1   Mr Sharma presented WP/353, "ATNP/2 WP2 - ICAO - Agenda and Proposed Time Schedule for ATNP/2". He commented that the Panel Secretary had observed that there were few papers for Agenda item 1 (Review and monitoring of AFTN, CIDIN and ATN developments, implementation activities and procedures) and encouraged members to submit papers on this item. There were no further comments on this WP.

35.2   Mr Sharma presented WP/342, "ATNP/2 WP13 - WG2 - ATN Internet Working Group (WG2) Report of Progress since ATNP/1". This paper had been amended since the Munich meeting but still gave a high level review of WG2 progress. There were no comments on this paper.

35.3   Mr Sharma presented WP/343, "ATNP/2 WP14 - WG2 - Development of the CNS/ATM-1 Package Internet Comms Service Draft SARPs". This paper would introduce the ICS SARPs at the panel Meeting. It was noted that the WP Recommendation appeared to have been changed. It was assumed that this had occurred at the Halifax JWG and the it was done to bring the recommendation in line with those introducing the other SARPs.

35.4   Mr Sharma presented WP/339, "ATNP/2 WP6 - JWG - Proposed ATN SARPs". Mr Sharma commented that the title was misleading ad this WP would introduce the Validation Reports for the SARPs, the WG2 Validation Report would be Appendix J to this WP.

35.5   Mr Sharma presented WP/341, "ATNP/2 WP16 - WG2 - VDL Requirements on the ATN Mobile SNDCF". Mr Sharma commented that this paper had been discussed during the last few WG meeting and that it recommended the relocation of the VDL SNDCF SARPs into the ATN part of Annex 10. He commented that the VDL draft SARPs are currently out for State comment and recommended that States responded with a recommendation to relocate the SARPs. A few format problems were noted in this WP and Mr Sharma undertook to check all the WG2 WPs for ATNP/s

> ACTION 10/8 - MR SHARMA - REVIEW ALL WG2 WORKING PAPERS
> SUBMITTED TO ATNP/2 FOR WORD / WORDPERFECT TRANSLATION
> ERRORS.

35.6   Mr Sharma presented WP/350, "ATNP/2 WP? - JWG - Proposed Amendments to the ATN SARPs". This WP would be the paper that proposes the changes made to the draft SARPs submitted to ICAO for language translation. The WG2 changes would form Appendix J to this WP. Mr Sharma commented that WG3 would be proposing their changes for adoption at the Panel meeting and proposed the WG2 do likewise. This was agreed.

35.7   Mr Sharma presented WP/352, "ATNP/2 WP17 - WG2 - Proposed Strategy and Approach for the Future Development of SARPs and Guidance Material for the Internet Communication Service". The discussion on this WP focused on the idea that ant changes to the ICS SARPs should be requirements driven and that "Package 2 ICS SARPs" should be backward compatible with the Package 1 SARPs. It was recognised that if WG2 were reformed at ATNP/s then studies into technological developments could be made and recommendations made to the ATN users regarding future requirements.

35.7.1   It was noted that use of dynamic transport timers and transport level compression were not on the future work programme. The latter was covered in the Validation Report, although it may go unnoticed. Both items would need to bought forward at the Panel Meeting for inclusion on the future work programme.

35.8   Mr Sharma presented, for information, WP/351, "ATNP/2 WP? - U.S. - Precedence of ATNP Future Work Programme", which it was assumed would be presented by Ron Jones, the US Panel Member. There were no comments on the WP other than one proposed item, CLTP, is already in the SARPs.

35.8   Mr Sharma presented, for information, WP/333, "ATNP/2 WP? - ICCAIA - ATN SARPs Defect Reporting & Configuration Management after ATNP/2". WG2 had had a requirement to develop a SARPs maintenance plan. Mr Sharma had co-ordinated with Mr Burgemeister on this subject and provided the ideas of WG2. Review of the WP suggested that the proposal didn't go far enough, not only did a CCB need to be established, but the output of the CCB should be updated SARPs made available in a timely manner.

36.   Agenda Item 8. - Future Work Plan

36.1   Mr Sharma reported that the current plan regarding the WGW Meeting in March 1997 was for an eight day meeting, the first four of which would be WG meetings.

36.2   Mr Sharma presented a WG3 Flimsy (WG3-8-4a) which proposed a second WGW meeting for November 1997. This meeting would take the feedback from the State letter process and amend the SARPs accordingly. In addition, WG3 would not have Guidance Material available for all applications in time for the March WGW meeting and would use this second WGW meeting to approve and submit their GM. WG2 accepted the idea of a second WGW meeting, it was noted that the WG2 GM would be submitted for approval at the Panel meeting.

37.   Review of Flimsy #5, "Update of WG2 CCB Activity", Issue 2.

37.1   Ms Cosgrove presented the document resulting from the update of Flimsy #5 into the WG2 Appendix (J) to the ATNP/2 WP-31. Whilst the change barred CP sections were not quite available the main body of the document was. It was agreed that editorial corrections to the SARPs would be presented in a tabular format, technical defects would be presented, in hard copy only, as change barred pages from the SARPs. The document is included in Appendix M.

37.2   Mr Sharma thanked Ms Cosgrove and Mr Whitfield for their effort in collating the Appendix during the meeting.

38.   Agenda Item 9 - Any Other Business

38.1   No items were raised under AOB.

39.   Agenda Item 10 - Conclusions & Action List

39.1   The meeting reviewed the draft of the meeting report, prepared by Mr Cardwell, and covering the first five days of the meeting. Editorial corrections were recorded by Mr Cardwell for incorporation in the next draft of the report.

39.2   The action list was reviewed and completion deadlines allocated to the remaining actions. The current action list is included as Appendix N.

39.3   Mr Sharma thanked the FAA for providing the meeting facilities and technical office. He commented that the administrative arrangements had been excellent.

39.4   Mr Sharma thanked the participants of the meeting for their work over the last seven days. As this would be the tenth and last WG2 meeting before the ATN Panel Meeting, Mr Sharma commented that this would be his last meeting as Rapporteur and extended his thanks to all participants in all the WG2 meetings. Mr Sharma closed the meeting.

39.5   Mr Crenais, and then Mr Herber, responded on behalf of the WG in thanking Mr Sharma for his work as WG2 Rapporteur, commenting that he had been an excellent chairman.

40.   Appendix A - WG2 ATTENDANCE LIST

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41.   Appendix B - List of Working Papers

No.	Title	Presented By	Agenda Item
329	Proposed Objectives, Schedule & Planning	A Sharma	1,2
330	CNS/ATM-1 SARPs & Guidance Material - Sub-Volume V: Internet Communications Service (Version 6.0)	JM Crenais	5
331	Version 1.4 Sub Volume 5 Guidance Material	H Hof	6
332	Not Used		
333*	ATNP/2 WP? - ICCAIA - ATN SARPs Defect Reporting & Configuration Management after ATNP/2	A Burgemeister	7.1
334	WG2 Configuration Control Board Activity	S Cosgrove	5.1
335	Review of Transport APRL	A Herber	5.2
336	Editorial Defects in the ATN Network Addressing Specification and Proposed Resolution	A Herber	5.2
337	Editorial Defects in the IDRP APRLs and Proposed Resolution	A Herber	5.2
338	Revised Transport Timer and Protocol Parameter Settings	R Jones	5.3
339	ATNP/2 WP6 - JWG - Proposed ATN SARPs	A Sharma	7.1
340	Proposal for Input to the WG2 Internet SARPs Validation Report	H Hof et al	4
341	ATNP/2 WP16 - WG2 - VDL Requirements on the ATN Mobile SNDCF	A Sharma	7.1
342	ATNP/2 WP13 - WG2 - ATN Internet Working Group (WG2) Report of Progress since ATNP/1	A Sharma	7.1
343	ATNP/2 WP14 - WG2 - Development of the CNS/ATM-1 Package Internet Comms Service Draft SARPs	A Sharma	7.1
344	Report of the Guidance Material Drafting Group Meeting	B Cardwell	6
345	On Adaptive Re-transmission Timers in OSI TP4	A Herber	5.3
346	Validating ATN with VDL	H Thulin	4
347	Guidance for Implementation of the Mobile VDL and AMSS SNDCFs	H Thulin	6
348	U.S. Validation Report on the ATN Sub-Volume 5	R Jones	4
349	Achieving a Cost Effective ATN	R Jones	5.3
350	ATNP/2 WP? - JWG - Proposed Amendments to the ATN SARPs	A Sharma	7.1
351*	ATNP/2 WP? - U.S. - Precedence of ATNP Future Work Programme	R Jones	7.1
352	ATNP/2 WP17 - WG2 - Proposed Strategy and Approach for the Future Development of SARPs and Guidance Material for the Internet Communication Service	A Sharma	7.1
353	ATNP/2 WP2 - ICAO - Agenda and Proposed Time Schedule for ATNP/2	A Sharma	7.1
354	Internet Communication Service Requirements Database Guidance	JP Briand	4
355	Addressing Guidance for the Diverse Ground-Based Subnetworks	L Sayadian	6
356*	Appendix G of WP340 - An Example	JM Crenais	4
357*	ATNSI Status	P Hennig	3
358*	RAF Presentation	H Hof	3
359*	IATA Proposal for Backward Compatibility (WG3 WP)	P Hennig	3
360*	Tracebility of Operational & Institutional Requirements to System Level Requirements	T Calow	4
361	ATNP/2 WP? - List of Working Papers	A Sharma	7.1
362	Comments on WP/345	R Cossa	5.3
363*	Draft report of NATSPG Agenda Items 1, Developments	P Hennig	

364	Further Explanations on Adaptive Retransmission Timers in TP4	A Herber	5.3
365	ATNP/2 WP2 - ICAO - Proposed Guidance Material for the Internet Communications Service Draft SARPs	A Sharma	7.1

* - Information Paper

42.   Appendix C - Meeting Agenda

43. Appendix D - Flimsy #3, "Draft ATNP/2 WP on the ATN ICS RDB".

Summary: This paper introduces the ATN Internet Communication Service Database (ICS RDB) and proposes to bring its existence to the attention of the ICAO Member States.

Introduction

In the context of the validation initiative, EUROCONTROL has developed an Internet Communications Service Requirements Database (ICS RDB). The ICS RDB contains:

- APRLs extracted from the SARPs
- ATN Requirements Lists (ARLs) for requirements not covered by APRLs

The lists in the ICS RDB cover the complete scope of the ICS SARPs. The requirements in the ICS RDB have been grouped. The groups identified are the ATN Network and all ATN systems which can be part of a Network (e.g. BIS, End System, Router Level 2).

The database has been designed in such a way that the user can fill-in compliance statements on a per requirement and on a per group basis.

The ICS RDB is a maintained product and will follow the evolution of the SARPs.

Discussion

The prime use of the ICS RDB was and still is for the purpose of validation. Is has been recognised that the database can facilitate the specification and procurement of ATN system. It represents a common way to specify communication systems.

Recommendation

The panel is invited to take note of the existence of the ATN ICS RDB and to take the necessary actions to bring this to the attention of the ICAO Member States. The ICS RDB is available from the appropriate ATNP Working Group.

44.   Appendix E - Flimsy #6, "Use of Boolean Operators in APRL Tables".

Use of Boolean Operators in APRL Tables

This flimsy addresses the inconsistent use of symbols to represent the Boolean operators in the Air/Ground route initiation APRL tables in section 5.3.5.2.14. The amended tables below use 'and' and 'or' the Boolean operators.

5.3.5.2.14 APRL for Air/Ground Route Initiation

5.3.5.2.14.1 General

Item	Description	ATN SARPs Reference	ATN Support
njSubnet	Support of Subnetworks that do not provide a Join Event	5.3.5.2	O.1
jSubnet	Support of Subnetworks that do provide a Join Event	5.3.5.2	O.1
giSubnet	Support of Ground-Initiated Subnetworks	5.3.5.2	O.2
aiSubnet	Support of Air-Initiated Subnetworks	5.3.5.2	O.2
agSubnet	Support of Air or Ground-Initiated Subnetworks	5.3.5.2	O.2
fsSubnet	Support of Subnetworks that support Fast Select	-	O
noIDRP-a	Support of optional non-use of IDRP by Airborne BIS	5.3.5.2.12.3	O
noIDRP-ag	Support of optional non-use of IDRP by Air/Ground BIS	5.3.5.2.12.2	M
lvSubnet	Support of Subnetworks that provide a Leave Event	5.3.5.2.13	M

5.3.5.2.14.2 Airborne Router - Subnetwork Connection Responder

Item	Description	ATN SARPs Reference	ATN Support
respAR-ar	Response to incoming Call Request	5.3.5.2.2	giOragSubnet: M
valCR-ar	Validation of incoming Call Request	5.3.5.2.2	giOragSubnet:O
RespISH-ar	Generation of ISH PDU	5.3.5.2.6	giOragSubnet: M
ISHinCC-ar	Encoding ISH PDU in Call Accept User Data	5.3.5.2.6	RespISH-ar &and fsSubnet: O
negNoIDRP-ar	Transmission of ISH PDU with SEL field of NET set to FEh	5.3.5.2.6	noIDRP-a:M
negIDRP-ar	Transmission of ISH PDU with SEL field of NET set to zero	5.3.5.2.6	^ noIDRP-a:M
autoRoute-ar	Inference of available routes from received NET of A/G Router	5.3.5.2.12.3	noIDRP-a:M
initIDRP-ar	IDRP startup procedures - Invoke activate action	5.3.5.2.10	^ noIDRP-a:M
supISH-ar	Suppression of multiple ISH PDUs	5.3.5.2.10	^ noIDRP-a: O
valNET-ar	Validation of received NET	5.3.5.2.7	^ noIDRP-a: O

giOragSubnet: giSubnet ^or agSubnet

5.3.5.2.14.3 Airborne Router - Subnetwork Connection Initiator

Item	Description	ATN SARPs Reference	ATN Support
polling-ai	Procedures for polling a list of subnet addresses	5.3.5.2.3.1	pollReq: M
backoff-ai	Backoff Procedure	5.3.5.2.3.1	pollReq: M
connect-ai	Connect on receipt of Join Event	5.3.5.2.3.2	EventDrvn: M
ValJoin-ai	Validation of Join Event	5.3.5.2.3.2	EventDrvn: O
SendISH-ai	Generation of ISH PDU	5.3.5.2.6	EventDrvn ^or pollReq:M
ISHinCR-ai	Encoding of ISH PDU in Call Request	5.3.5.2.6	SendISH-ar &and fsSubnet: O
negNoIDRP-ai	Transmission of ISH PDU with SEL field of NET set to FEh	5.3.5.2.8	noIDRP-a:M
negIDRP-ai	Transmission of ISH PDU with SEL field of NET set to zero	5.3.5.2.8	^ noIDRP-a:M
autoRoute-ai	Inference of available routes from received NET of A/G Router	5.3.5.2.12.3	noIDRP-a:M
initIDRP-ai	IDRP startup procedures - listenForOpen set to true	5.3.5.2.10	^ noIDRP-a:M
supISH-ai	Suppression of multiple ISH PDUs	5.3.5.2.10	^ noIDRP-a: O
valNET-ai	Validation of received NET	5.3.5.2.7	^ noIDRP-a: O

pollReq: aiSubnet &and njSubnet

EventDrvn: jSubnet &and (aiSubnet ^or agSubnet)

5.3.5.2.14.4 Air/Ground Router - Subnetwork Connection Responder

Item	Description	ATN SARPs Reference	ATN Support
respAR-agr	Response to incoming Call Request	5.3.5.2.2	aiOragSubnet: M
valCR-agr	Validation of incoming Call Request	5.3.5.2.2	aiOragSubnet:O
emgncy-agr	Emergency Procedures	5.3.5.2.2.2	M
RespISH-agr	Generation of ISH PDU	5.3.5.2.6	aiOragSubnet: M
ISHinCC-agr	Encoding ISH PDU in Call Accepted User Data	5.3.5.2.6	RespISH-agr &and fsSubnet: O
negNoIDRP-agr	Receipt of ISH PDU with SEL field of NET set to FEh	5.3.5.2.8	M
negIDRP-agr	Receipt of ISH PDU with SEL field of NET set to zero	5.3.5.2.8	M
autoRoute-agr	Inference of available routes from received NET of Airborne Router	5.3.5.2.12.2	M
initIDRP-agr	IDRP startup procedures - Invoke activate action	5.3.5.2.10	M
supISH-agr	Suppression of multiple ISH PDUs	5.3.5.2.10	O
valNET-agr	Validation of received NET	5.3.5.2.7	O

aiOragSubnet: aiSubnet ^or agSubnet

5.3.5.2.14.5 Air/Ground Router - Subnetwork Connection Initiator

Item	Description	ATN SARPs Reference	ATN Support
connect-agi	Connect on receipt of Join Event	5.3.5.2.4	goOragSubnet: M
ValJoin-agi	Validation of Join Event	5.3.5.2.4	connect-agi: O
SendISH-agi	Generation of ISH PDU	5.3.5.2.6	connect-agi: M
ISHinCR-agi	Encoding of ISH PDU in Call Request	5.3.5.2.6	Send-ISH-agi &and fsSubnet: O
negNoIDRP-agi	Receipt of ISH PDU with SEL field of NET set to FEh	5.3.5.2.8	M
negIDRP-agi	Receipt of ISH PDU with SEL field of NET set to zero	5.3.5.2.8	M
autoRoute-agi	Inference of available routes from received NET of Airborne Router	5.3.5.2.12.2	M
initIDRP-agi	IDRP startup procedures - listenForOpen set to true	5.3.5.2.10	M
supISH-agi	Suppression of multiple ISH PDUs	5.3.5.2.10	O
valNET-agi	Validation of received NET	5.3.5.2.7	O

goOragSubnet: giSubnet ^or agSubnet

5.3.5.2.14.6 Termination Procedures

Item	Description	ATN SARPs Reference	ATN Support
lvEvent	Processing of Leave Event	5.3.5.2.13	M
Watchdog	Watchdog Timer	5.3.5.2.13	M
ConfigWD	Configurability of Watchdog for Subnetwork Characteristics	5.3.5.2.13	O
conLeave	Processing of a per connection Leave Event	5.3.5.2.13	M
subnetLeave	Processing of a persubnetwork Leave Event	5.3.5.2.13	M

45.   Appendix F - Flimsy #8, "Additional Information Related to WP/349".

**Flimsy 8
Additional Information
Related to WP/349
Achieving a Cost Effective ATN**

Introduction

The intent of the subject working paper was cost effective realization of the ATN. The WP proposed that IDRP not be used over an air-ground link and that the air-ground router signal non-use of IDRP. In addition, the WP proposed that support for the ATN security not be required for either ISs or ESs.

Discussion

The goals of the WP may be achieved by following the proposals contained therein; however, it is recognized that the proposed changes are not acceptable to the working group as documented in Flimsy 7.

One of the goals of the working paper may also be achieved completely within an Administrative Domain with the addition of special processing. Specifically, maximum use of COTS may still be applied within an Administrative Domain provided that the ATN requirements are met at the Administrative boundaries, i.e. over the air-ground links and on ground-ground links to other administrative domains. For example, an administration could implement COTS-based end systems and segregate traffic types within its Administrative Domain using NSAP prefixes so long as at the Administrative Domain boundaries the appropriate security labels are inserted or deleted by the systems under control of the administrative domain.

Recommendation

In order to make clear that flexibility remains within an Administrative Domain, it is recommended that the existing note be labeled note 1 and the following note be added to paragraph 5.2.2.6.1 of the Internet Communications Service SARPS:

Note 2. - While meeting the requirements of the SARPS, the distribution of end system and intermediate system functionality and the use of interworking processes exclusively within an Administrative Domain is a local matter.

46.   Appendix G - Flimsy #7, "WG2 Response to WP349".

WG2 Response to WP349

This flimsy presents the working group's response to WP349 'Achieving a Cost Effective ATN'. The paper contains two proposals for SARPs amendments, the first relating to the use of IDRP over air-ground sub-networks and the second relating to the use of the security label. Section 1 below addresses the use of IDRP whilst Section 2 addresses the use of the security label.

The scope of WP349 indicates that the objective of the proposal is 'to take greater advantage of COTS products for at least initial implementation of the ATN' ground infrastructure.

It is the understanding of the working group that the objective of the proposal in WP349 is to modify the current draft SARPs to allow the use of COTS products beyond that currently possible.

Use of IDRP

WP349 proposed to permit any air-ground BIS (i.e., the ATN router on the ground in direct contact with the aircraft) to require the aircraft not to use IDRP.

WP349 indicates that an additional procedure, beyond the existing provisions in the draft SARPs, would be required to implement this feature.

WG2 comments fall into the following categories:

1. Technical impact
2. Cost impact
3. Operational impact
4. Administrative impact

Technical Impact

The option to allow the air-ground BIS to mandate airborne non-use of IDRP places a requirement on all airborne BISs to support the additional procedure referred to above. As a result, airborne BISs which support IDRP will also need to provide support for this additional procedure. This would increase the complexity of the airborne BIS.

Similarly, not using IDRP places an additional requirement on all airborne BIS to have certain *a priori* static routing information. Whilst introducing some additional complexity in the airborne BIS, the greater impact of such a change would be the ongoing management of that information required as a result of routing topology changes. The nature of this approach would significantly reduce the flexibility of the system both in terms of the management of the static information, and the ability of the system to dynamically account for topology changes.

These anticipated increases in complexity of the airborne BIS would have a significant impact on both the cost of implementation and the magnitude and cost of the certification of avionics.

The original intention of allowing the non-use of IDRP in airborne BIS was to accommodate perceived limitations in avionics capabilities. It was recognised that this should be an interim measure as this approach would deny the availability of dynamic route information to the aircraft thereby placing greater reliance on the availability and constancy of the statically defined routing information contained in the non-IDRP equipped aircraft. The resultant need for greater availability of the ground network would likely increase the overall cost of implementation and maintenance of the ground infrastructure.

Whilst it is recognised that the objective of this proposal is to maximise the use of COTS products; the proposed changes to the SARPs would not be consistent with this goal. An air-ground BIS would be required to support the procedures referred to in Section 1 (Use of IDRP), a function which would not be available in any COTS product. Furthermore, it has been stated by the presenters of WP349 that IDRP would be implemented in their routers for ground-ground communications with adjacent States. Given that it is intended that IDRP be used for ground-ground communications to adjacent States and/or service providers, there are no cost savings to be achieved at boundary routers through exclusion of IDRP from the air-ground sub-networks.

Furthermore, whilst the removal of IDRP from the air-ground aspect of the air-ground BIS may result in a cost reduction in a router designed specifically for this use, the development of a general air-ground BIS would need to address all implementation options. Thus, for manufacturers, rather than simplifying the development, this proposal would result in increased complexity, thereby negating the benefit of the change.

Cost Impact

Whilst the working group strongly supports the concept of maximising the use of COTS products, it is essential that the objective of achieving a cost effective ATN should be considered in a global sense, encompassing both the airborne and ground components of the system and not concentrate on one particular part of the system. It is considered that the proposal in WP349, whilst possibly reducing the initial acquisition cost of the air-ground BISs, will increase the complexity and thereby the cost of airborne systems in addition to the likely increase in certification costs.

Furthermore, a concern exists that transferring implementation costs to the airborne component will have significant impact on the decision of operators to equip with ATN avionics.

It is also believed that, as a result of the relatively low number of air-ground BISs envisaged, the potential cost saving is limited, whilst even a small increase in the cost of avionics will result in a much more significant cost increase in aircraft equipage. In the example cited by the presenters of WP349, it was estimated that the number of air-ground BISs to be used in the FAA network would be of the order of 20. When compared to the thousands of airborne BISs which will also constitute part of the ATN; clearly any savings in the costs of air-ground BISs would not compensate for the increased costs of airborne BISs.

In addition, it is considered that adoption of this proposal will result in an increased cost of operating the ground infrastructure as discussed above in Section 1.1 (Technical Impact).

All of these factors will result in an overall increase in the total cost of implementing the ATN.

Operational Impact

IATA, on behalf of its members, has determined that use of airborne IDRP is the intended method of operation. IATA members feel that they will be operationally disadvantaged whilst operating over or within any state which restricts aircraft to the procedures referred to in Section 1 (Use of IDRP). Furthermore, the imposition of the added responsibility for the management of routing information will have an impact on aircraft operations. The increased reliance on the ground infrastructure is likely to result in higher Reliability, Maintainability and Availability requirements and therefore higher life-cycle costs for ATS providers and/or Communication Service Providers.

Administrative Impact

Whilst WP349 proposes 'modest' changes to the draft SARPS, further analysis is required to determine the overall impact. For example, there is the need to consider all the possible combinations of ground and airborne BISs. This may lead to a number of special cases which may only be discovered during prototype implementations.

Given that the current validation report is based on the existing draft SARPs Version 6.0, clearly a change to the SARPs at this stage will result in significant elements of the draft SARPs not being adequately validated prior to presentation of the draft SARPs to ATNP/2.

If this were to be the case, there would be a significant risk of the draft SARPs not being accepted by the Panel.

Use of ATN Security

In order to achieve the use of COTS products, WP349 proposed that support for ATN security not be required for ESs or ISs.

Following initial discussion of WP349, Flimsy 8 was presented outlining an alternative approach to allowing administrations maximum flexibility in the implementation of ground infrastructure, particularly in the area of employing COTS products. The view put forward was that, provided an Administrative Domain presents draft SARPs compliant interfaces to its external environment, both ground-ground and air-ground; the implementation within the Administrative Domain should be a local issue.

The alternative solution put forward in Flimsy 8 was agreed by the Working Group with the draft SARPs to be modified to capture this concept.

Conclusions

IRDP

With respect to the use of IDRP, whilst the working group strongly supports the concept of achieving a cost effective ATN through maximising the use of COTS products, it is concluded that:

1. the proposal will not contribute towards the objective of achieving cost effective implementation of the ATN through the use of COTS products;
2. from a total system perspective the proposal will result in increased implementation cost of the ATN resulting from increased complexity in the airborne BIS and the ground infrastructure;
3. the proposal will result in a reduced operational capability for IATA airline operators; and

4. the proposed changes to the draft SARPs will result in a risk of the entire set of draft SARPs being rejected at ATNP/2 as a result of insufficient validation.

Accordingly, the working group concludes that no change be made to the draft SARPs in respect of the use of IDRP over air-ground subnetworks.

Security

With respect to the use of the ATN security field, it is concluded that a note be added to the draft SARPs under paragraph 5.2.2.6.1:

> *Note 2. - While meeting the requirements of the SARPs, the distribution of end system and intermediate system functionality and the use of interworking processes exclusively within an Administrative Domain is a local matter.*

47.   Appendix H - Flimsy #9, "Transport Timer and Protocol Parameter Settings".

ATNP WG2-10
Flimsy 9
Version 4.0

TRANSPORT TIMER AND PROTOCOL PARAMETER SETTINGS

Replace current 5.5.2.2.12 with:

5.5.2.2.12 Implementations of the transport protocol shall support configurable values for all timers and protocol parameters, rather than having fixed values, in order to allow modification as operational experience is gained.

Add:

5.5.2.2.13 When intended for operation over Air/Ground subnetworks, transport protocol implementations shall support the minimum - maximum ranges for COTP timer values presented in Table 5.5.-2.

5.5.2.2.13.1 Recommendation. — *Nominal values indicated in Table 5.5-2 should be used.*

5.5.2.2.13.2 Recommendation. — *The assignment of optimized values for timers and parameters other than the nominal values indicated in Table 5.5-2 should be based on operational experience.*

5.5.2.2.14 Recommendation. — *When intended for operation exclusively over Ground/Ground subnetworks, implementations of transport protocol timer values should be optimized to ensure interoperability.*

Name	Description	Minimum Value	Nominal Value	Maximum Value
M_{RL} M_{LR}	NSDU Lifetime, seconds	26	400	600
E_{RL}, E_{LR}	Maximum Transit Delay, seconds	1	100	150
A_L, A_R	Acknowledgment Time, seconds	1	20	400
T1	Local Retransmission Time, seconds	12	221	300
R	Persistence Time, seconds	1	443	2710
N	Maximum Number of Transmissions	1	3	10
L	Time bound on reference and/or sequence numbers, seconds	160	1263	3000
I	Inactivity Time, seconds	600	4500	6000

W	Window Time, seconds	160	4000	6000

Table 5.5-2

Note 1. —— In Table 5.5-2, the subscripts "R" and "L" refer to "remote" and "local", respectively. the variable E_{RL}, for example, refers to the maximum transit delay from the remote entity to the local entity. The variable E_{LR} is the maximum transit delay from the local entity to the remote entity. It is assumed that these values may be different.

Note 2. —— Several of the timers and variables listed in Table 5.5-2 are not directly configurable, but may be determined based on the values of other timers and variables. These computed values are:

$$T1 = (E_{LR} + E_{RL} + A_R + x)$$
$$R = (T1 * (N-1) + x)$$
$$L = (M_{LR} + M_{RL} + R + A_R)$$
$$W = (I - E_{LR} - offset)$$
$$x = Local\ processing\ time$$
$$offset = Unanticipated\ delay\ exceeding\ E_{LR}\ values$$

Change **5.5.2.7.1.2.2** *Specific ATN Requirements to:*

ATN4	Configurable Transport Timers?	5.5.2.2.12	M

48.   Appendix I - Flimsy #12, "Proposed GM for section 7.4".

Reference to ATNP WG/WP 335
(Addressing Guidance for Diverse Ground Based subnetworks)

This flimsy describes how to add the following paragraphs and text to chapter 7 of Guidance Material for Sub-Volume 5-ATN Internet SARP, Issue 1.4:

Proposed new section (and renumber existing 7.4.1 to 7.4.2, etc, and set cross-reference 4.4.2.2):

7.4.1   Subnetwork addressing

A subnetwork point-of-attachment (SNPA) address is needed for each point of attachment between an end system or an intermediate system and a subnetwork.

The routing function of the Network layer manages the correspondence between NSAP addresses and SNPA addresses, which may be complex. There is no need for an NSAP address to incorporate a corresponding SNPA address, although this may facilitate routing. The use of the SYS field in the ATN NSAP address structure for this purpose is specified in 5.4.3.8.6 of the SARPs.

Guidance on the use of the ISO/IEC 9542 ES-IS routing protocol over ground-ground subnetworks is given in ***4.4.2.2.

Proposed new subsection to existing 7.4.1:

7.4.1.1 ISO/IEC 8802 LAN addressing

The structure of Local Area Network (LAN) subnetwork addresses is defined in the ISO/IEC 8802 series of standards (including the associated Technical Report series ISO/IEC 11802), and applies to FDDI (ISO/IEC 9314) in addition to the ISO/IEC 8802 LAN types. There are address parameters in both the Logical Link Control (LLC) and the Medium Access Control (MAC) service.

LLC addresses have a small number of fixed values.

MAC addresses have to be unique within each extended LAN (ie, a group of LANs connected by MAC bridges), and one is required for each LAN SNPA. System configuration becomes easier if MAC addresses are in fact globally unique; in practice this is not a major issue because LAN interfaces are supplied with globally unique addresses, allocated originally by an agreement between the manufacturers and now administered by the IEEE as the International Registration Authority for ISO/IEC 8802.

The ISO/IEC 9542 ES-IS protocol supports the selection of the appropriate MAC address for each SN-UNITDATA transmission.

Proposed new subsection to new 7.4.3 (ISDN):

7.4.3.1 ISDN subnetwork addressing

The structure of addresses for use with public ISDN subnetworks is defined in ITU-T Recommendation E.164. There is little practical experience with OSI networking over ISDN, and further specification may be needed.

Proposed new subsection to existing 7.4.3 (FR) and set the cross-reference to new 7.4.3.1:

7.4.3.1 *Frame relay subnetwork addressing*

Frame relay uses the same address formats as ISDN. See ~~***~~0

Proposed new subsection to existing 7.4.4 (X.25):

7.4.4.1 *ISO/IEC 8208 subnetwork addressing*

The structure of SNPA addresses for use in access via ISO/IEC 8208 to public packet-switched data networks is defined in ITU-T Recommendation X.121. Address formats for private packet-switched data networks are a matter for the network operator but are generally based on the specification of X.121. One SNPA address is needed for each end system or intermediate system connected to a subnetwork via ISO/IEC 8208.

There is a need for L~~Datal~~ink layer addresses in the ISO/IEC 7776 protocol, but these have fixed values depending on the DTE/DCE roles of the systems; ~~however, these have local significance~~.

Proposed new subsection to existing 7.4.5 (IP):

7.4.5.1 *IP addressing*

Addressing for networks using the Internet Protocol is specified in STD0005 and various supporting RFCs. ATN NSAP addressing is specified in the Internet Communications Services SARPs, 5.4. Although IP addresses may be mapped into NSAP addresses, the reverse is only possible for addresses used with the new IP version 6. For the predominant IP version 4, the incompatible addressing structures must be accommodated using an encapsulation or conversion technique.

Proposed new subsection to existing 7.4.6 (ATM):

7.4.6.2 *ATM addressing*

Addressing support for ATM is defined in the ATM Forum specification *User Network Interfaces 3.0/3.1*. The address format is based on the OSI syntax for NSAP addresses, but despite the similar structure, these 20-byte ATM addresses are better described as private ATM SNPA addresses. There are three different formats: NSAP Encoded E.164, Data Country Code (DCC) Format, and International Code Designator (ICD) Format. Implementation of ATM subnetworks will require an address conversion process in order to map from the ATN NSAP address to the ATM address.

Note.— ATM Forum Specifications can be obtained from [address to be determined].

49.   Appendix J - Flimsy #11, "Subnetwork Priority Mapping"

Subnetwork Priority Mapping

Background

During the discussion of the Draft ICS SARPs, discussion arose over the note in chapter 5.2.8.5.1.1. In particular, it was questioned whether priority mapping is specified in the Mode S subnetwork material or not. For clarification, the existing Note is reproduced as follows:

5.2.8.5.1.1   ....

Note 4. — The following does not apply to the AMSS and Mode S Subnetworks, which have specified their own priority mapping schemes.

Result

Neither in the Mode S Subnetwork SARPs, nor in the corresponding Draft Mode S Subnetwork Guidance Material, a specification of the mapping of CLNP priority to subnetwork priority could be identified. Consequently, the above referenced Note has to be amended. In addition, the review of the current text indicated the need for minor editorial amendments.

Some uncertainty remained about the specific CLNP priority value for which the subnetwork priority is changing from "low" to "high". Both, reference /1/ and reference /2/ state that CLNP priorities of 9 and under should be mapped to "low" subnetwork priority, whereas the current draft SARPs (ref. /3/) require CLNP priorities below 5 to be mapped to "low" subnetwork priority. Furthermore, the rationale for the default value 8 in subsection c) of 5.2.8.5.1.2 remained unclear.

Proposal

It is proposed to move the respective note (with corresponding deletion of the reference to Mode S) currently under 5.2.8.5.1.1 to 5.2.8.5.1.2 since it relates to that latter chapter. It is furthermore proposed to improve the readibility of subparagraph c) by reducing ambiguity. The CLNP priority values for "high" and "low" subnetwork priority should be reconsidered by the working group.

The following text is proposed as a direct replacement of section 5.2.8.5.1.2. Thereby, amendments are indicated by revision marks.

5.2.8.5.1.2 When an ATN connection mode subnetwork does support prioritisation of subnetwork connections, then unless the relationship between ATN Internet Priority and subnetwork priority is explicitly specified by the subnetwork specification, the following shall apply:

a) Subnetwork connections shall be established as either "High" or "Low" priority connections.

b) For the "Low" priority connection type, the priority to gain a connection, keep a connection and for data on the connection shall be the defaults for routine use of the subnetwork.

c) For the "High" priority connection type, the priority to gain a connection, keep a connection and for data on the connection shall be appropriate for urgent and network management data in the context of the subnetwork. In the absence of guidance from the subnetwork provider, the priority value decimal 8 shall be used for each of the three connection types~~priorities~~.

d) "High" priority connections shall be used to convey NPDUs of priority six and above. "Low" priority connections shall be used to convey all other NPDUs.

Note. — The above does not apply to the AMSS ~~and Mode S~~ Subnetwork~~s~~, which ha~~ve~~s specified ~~their~~its own priority mapping scheme~~s~~.

References:

/1/ ATN Manual, Version 2.0

/2/ Priority Definitions within Annex 10 and the Relationship to the ATN SARPs, ATNP WG2, July 1995 (Rome meeting)

/3/ Draft ICS SARPs, Version 6.0

50.   Appendix K - Flimsy #15, "Use of AMSS Priority Channel 14"

WG2\10
Flimsy 15, Rev 2.0

Use of AMSS Priority Channel 14

Introduction

WG2/WP347 (which reported on the results of ATN/AMSS validation) noted that it had been observed during validation that any communications initiated over the AMSS at the subnetwork priority level "14" resulted in an alarm being triggered at the GES facility.

It had been specified in the guidance material of the proposed Second Edition of the ATN Manual that ATN CLNP priority level be mapped onto the AMSS subnetwork priority level 14.

Discussion

The guidance referred to above has been retained in the final proposed guidance material developed by WG2 that will be proposed for adoption at ATNP/2.

The ATN Internet draft SARPs specify that all messages related to systems management including IDRP routing information exchanges are assigned a CLNP priority level 14, i.e. the highest priority .

IDRP route initiation and routing information is exchanged whenever any aircraft logs onto a GES. If the mapping between CLNP and subnetwork priority is implemented then the consequence is that an alarm will be triggered on each occasion an aircraft logs onto a GES and subsequently whenever any IDRP protocol data units are exchanged over the AMSS subnetwork.

It is unclear whether such an alarm is generated at subnetwork priorities 12 and 13 since they have been reserved by the AMSS SARPs.

It is understood that ATNP WG3 will recommend that the CLNP priority mapping of certain air/ground applications will be increased from 10 to 11.

Possible Solutions

As a principle it, and in order to ensure the efficient and correct operation of the internet, WG2 considers it essential that all internet systems management data is assigned a higher priority than "normal" applications data.

Possible options to solve the problem are:

1.   To do nothing;

2.   Investigate the possibility of mapping systems management internet data onto AMSS subnetwork priority levels 12 or 13 which are currently reserved by the AMSS SARPs;

3.   Assign all internet systems management data subnetwork priority level 11. It is noted that this may conflict with a recent decision of ADSP/4 which recommended that certain air/ground applications are assigned a CLNP priority level of 11 which it is assumed will be mapped onto subnetwork priority level.

Recommendation

Since the CLNP Priority mapping table currently resides in a Sub Volume 1 WG2 seeks guidance from WG1 on the above.

51. Appendix L - Flimsy #13, "Additional InformationRelated to WP/348, US Validation Report on the ATN Subvolume 5

Introduction

The intent of this flimsy is to clarify the results of the US validation efforts. Specifically the report recommends guidance material be introduced to cover some concerns discovered in the validation.

Discussion

Transport

The issues concerning the transport timers have been resolved due to the acceptance of WG 338 entitled "Transport Timers and Protocol Parameter Settings"

IDRP

There is no text in the guidance material concerning the setting of the IDRP parameters particularly the "KeepAlive time." It should be recognized that the value of this IDRP parameter should be consistent through out the network to ensure a properly functioning ATN network. It should also be noted that IDRP policy should also be consistent throughout the network. This will help ensure that routing loops do not occur.

Subnetwork

The US validation report also states the results will vary based on subnetwork performance. For example, the time between the aircraft enters/leaves a subnetwork until the time the corresponding join/leave event is signaled to the router directly affect the performance of the ATN internet.   These issues however are outside the scope of the ATN draft SARPs.

Topology

The US validation report also states the performance of the ATN will vary based on the network topology and size. Guidance material defines the elements concerning the ATN topology, however it does not define how to optimize the topology. It should be recognized that individual state's and organization's agreements (either contractual or informal) will directly affect the topology.

Recommendation

It is recommended to add the following text to the guidance material to help alleviate some of the concerns resulting from the US validation efforts.

Add the following paragraph at the end of section 5.11.6

The KeepAlive timer is used within IDRP to determine the health of a link. This directly controls the frequency which IDRP KeepAlive PDUs are sent between BIS-BIS connections.. There is a trade-off concerning the setting of this time. A small value of this time will more accurately determine a change in link status, however this will increase the protocol overhead of an already bandwidth limited air/ground resource. The setting of this time to a small value will also increase the financial cost of the resource. A large value of the keepalive time will be less responsive to determine a change in link status, however this will decrease the protocol overhead across the air/ground resource. The setting of this time to a large value will also decrease the financial cost of the resource. It is recommended that this value be based on operational experience between various the various states and organization..

Add the following paragraph at the end of section 7.3

It should be recognized that behavior of the ATN is directly related to the characteristics of the various air/ground subnetworks involved.

The results of the US have been modified to reflect the changes which occurred during this working group meeting.

The comment under AVO_112 will be changed to comment i.

- i. The satellite system used in testing was too unstable to complete required experiments.

The last two sentences of the US report will be changed to reflect this concern to the following text.

Based on the ATN Validation Objectives defined by WG2, no technical defects have been found to date. The problems found in the MITRE/CAASD validation results represent concerns which will be addressed in future guidance material and in implementors agreements (which are within the boundary of the draft SARPs) in order to emphasize implementation strategies and the organizational coordination required to ensure a properly functioning ATN internet.

52.   Appendix M - Flimsy #17, "Extension of Section 2.4 Guidance Material"

Extension of Section 2.4 of Guidance Material

Background

During the review of chapter 2 of the guidance material, it was agreed to extend the guidance material by adding an additional paragraph providing guidance on the (high level) concept of mobile route initiation.

This revised flimsy provides text amended during discussion within the working group and proposes its inclusion in version 1.5 of the GM.

Proposal

Add the following paragraph after 2.4.3 (Mobile Users):

2.4.3.1 Route Initiation

The establishment of a communications path between BISs in any two Routing Domains is known as "Route Initiation". These procedures apply to the establishment of both ground/ground and air/ground communications. However, as opposed to the ground/ground case, Route Initiation for mobile users is dynamic and has to follow ICAO specified procedures for which guidance is given in section 5.10.

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53. **Appendix N - Flimsy #5, "Proposed Changes to draft Internet Communications Service SARPs"**

Attachment J

Proposed Changes to draft Internet Communications Service SARPs

Aeronautical Telecommunication Network Panel

Working Group 2

Summary
The following is a list of defects found in the draft ATN Internet Communications Service SARPs (version 6.0 in WordPerfect). They are divided into two categories: 1) editorial, and 2) technical

Defect Report - Internet Communications Service draft SARPs

Overview
The following is a list of the technical and editorial defects found in the Internet Communications Services SARPs (Word Perfect version 6.0). The technical defects are supported by the explanation of the defect, a description of the impact and the proposed changes to the SARPs.

Editorial Defects
The following is a list of editorial defects found in the WordPerfect version 6.0 of the Internet Communications Service SARPs.

Chapter	paragraph reference	Details of change
5.1	term "Sub-Volume"	replace with "section"
5.2	5.2.2.2.3.1	take out comma
	5.2.2.4.1.1 note	should be in italics
	5.2.2.4.2.1 recommendation	should be in italics
	5.2.2.4.2.2	remove comma
	5.2.3.4	replace "sub-volume 4" with "section 4"
	5.2.3.5	replace "sub-volume" with "section"
	5.2.4.3.3	replace "perferred" with "preferred"
	5.2.4.3.1 b)	replace with "(SNAcP) suitable"
	5.2.5.1.3.1	replace "(QoS)available" with "(QoS) available"
	5.2.7.1.1.2	replace "An ATN" with "A ATN"
	5.2.7.1.2.3 note	should be in italics
	5.2.7.1.3 note 2	remove comma
	5.2.7.3.1.5 note 1	should be entirely in italics
	5.2.7.3.2.2	two shall statements - replace with additional shall statement numbered 5.2.7.3.2.3
	figure 5.2-2	"Use of Priority in the ATN" should be attached to figure
5.3	5.3.1.2	add period at end
	5.3.1.2.9	add comma after RD
	5.3.1.2.11	add comma after RDC
	5.3.1.2.12	add comma after RDC
	5.3.2.1.1	delete comma after "advertised"
	5.3.2.2.3.5.1 a)	"security related information according to 5.6.2.2 under the ATN Security Registration Identifier, and"
	5.3.2.2.3.5.1 4)	should be"1)"
	5.3.2.2.3.5.1 5)	should be "2)"
	figure 5.3-1	append figure title to figure. "Assumed ATN Router Architecture for the

Chapter	paragraph reference	Details of change
		Air/Ground Route initiation"
	5.3.5.2.10.5	change "these routes as spcified" to "these routes as specified"
	5.3.5.2.13.4 recommendation	word "recommendation" in bold
	5.3.4.2.14.2 "ATN Support" column	ISHinCC-ar row replace "&" with "and"
	5.3.5.2.14.3 "ATN Support" column	SendISH-ai row replace "^" with "or"
	5.3.5.2.14.3 "ATN Support" column	ISHinCR-ai row replace "&" with "and"
	5.3.5.2.14.3 under table	replace "&" with "and" replace "^" with "or"
	5.3.5.2.14.4 "ATN Support" column	ISHinCC-agr row replace "&" with "and"
	5.3.5.2.14.4 under table	replace "^" with "or"
	5.3.5.2.14.5 "ATN Support" column	ISHinCR-agi row replace "&" with "and"
	5.3.5.2.14.5 under table	replace "^" with "or"
	5.3.5.2.14.6 table	change "persubnetwork" to "per subnetwork"
	5.3.6.1 note 1	replace "aLloc-RIB" with "a Loc-RIB"
	5.3.6.1 note 2	replace "identified in5.2.2.2 to…" with "identified in 5.2.2.2 to…"
	5.3.7.1.2.1 note 2	replace "IslandBackbone" with "Island Backbone…"
	5.3.7.1.4.2	entire section in italics
	5.3.7.1.4.2 b) note	replace "RDC willprovide…" with "…RDC will provide…"
	5.3.7.1.4.2 recommendation a) and b)	should be in italics
	5.3.7.3.4.2 note	replace "routing informationabout…" with "…routing information about.."
5.4	figure 5.4-1	Swap the second and third word in the title of Figure 5.4-1 to read "The Global OSI Network Addressing Domain".
	5.4.1.3.1	Replace " ... of the specification" by "... of this specification"
	5.4.3.3 all notes	renumber notes note 1 appears twice
	5.4.3.5.2	Delete "then" in the second line of section 5.4.3.5.2.
	Figure 5.4-3	add figure 5.4-3 (atttached)
	5.4.3.8 note	Add full stop at the end of the section.
	5.4.3.8.2.2	header should read 5.4.3.8.2.1.1
	5.4.3.8.2.3.2	remove extra TC entry for the recommendation

Chapter	paragraph reference	Details of change
	5.4.3.8.2.3.4	Delete section 5.4.3.8.2.3.4.
	5.4.3.8.2.4.4	Replace "Rds" by "RDs" in the last but second line of the second note in Section 5.4.3.8.2.4.4.
	5.4.3.8.2.5.2	Replace "state" by "State" in the last but one line of Section 5.4.3.8.2.5.2
	5.4.3.8.3.1	Replace "is" by "in" in the first line of Section 5.4.3.8.3.1.
	5.4.3.8.4, Note 1	Delete one full stop at the end of Note 1 in Section 5.4.3.8.4.
	5.4.3.8.4.1	Replace "NSAPs" by "NSAP" in the last but second line of Section 5.4.3.8.4.1.
	5.4.3.8.4.2	Add "Network Addressing Domains" after "In the Fixed AINSC and ATSC" in the first line of Section 5.4.3.8.4.2.
	5.4.3.8.5, Note 4	Replace full stop by comma in the first line of Note 4 in section 5.4.3.8.5.
	5.4.3.8.4	Add a new section 5.4.3.8.4.1 with the following text: "5.4.3.8.4.1 The ARS field shall be three octets in length." and renumber all existing paragraphs in section 5.4.3.8.4.
	5.4.3.8.7	Add a new section 5.4.3.8.7.1 with the following text: "5.4.3.8.7.1 The SEL field shall be one octet in length." and renumber all existing paragraphs in section 5.4.3.8.7.
	5.4.3.8.7	Add a new section 5.4.3.8.7.4 after Note 2 with the following text: "5.4.3.8.7.4 SEL field values other than those defined for Intermediate System Network Entities in 5.4.3.8.7.1 and 5.4.3.8.7.2 above or being reserved, shall be assigned by the addressing authority responsible for the identified End or Intermediate System."
5.5	5.5.2.2.6	note 1 should be in italic
	5.5.2.2.7 recommendation	the word "recommendation" should be in bold
	5.5.2.2.10 note	should be in italics
	5.5.2.4.2.1	note should not be indented
	5.5.2.7.1.1 note	replace "an ATN ProtocolRequirement List…" with "…an ATN Protocol Requirement List…"
	5.5.7.1.10 note	period at end of note
	5.5.3.6.1	entitled "general"
	5.5.3.6 table	heading should be "Protocol

Chapter	paragraph reference	Details of change
		Implementation"
5.6	5.6.2.2.1.1	"...traffic other than Traffic Type..."
	5.6.2.2.3.1	note not in italics
	5.6.2.2.6.7.3	add "Table 5.6-1." at end
	Table 5.6-1	add caption "Table 5.6-1 Encoding of Traffic Type Security Tag"
	5.6.2.2.6.8 table 5.6-1	convert footnote text from word document to a standard note under the semantics column preceded with note.
	Table 5.6-1 under ATSC	remove final row in category
	5.6.2.2.6.8.3	"…of the NPDU according…"
	Table 5.6-2	caption "Table 5.6-2 Encoding of the Security Classification Tag"
	5.6.2.4	ref must be 5.5.2.5 instead of 5.2.2.5
	5.6.2.4.2.1 a)	"n-total" should be in italic
	5.6.3	insert 2 spaces before
	5.6.3.3.1	(NEs) instead of (Nes)
	5.6.4.3 note	reference to 5.0 should be 5.6.4.4
	5.6.4.5	remove "[type REQ]" from 8th row item column
	5.6.4.5	eERQ-t: typo in ATN Suport column, "eEerq" instead of eEreq"
	5.6.4.6	entry "edPri-s",typo in ATN Support and status columns "eP-r" instead of "ePRI-r"
	5.6.4.6	entries edQOSM-s and edQOSM-r, ATN Support column: Predicates eQOSM should be eQOSM-s and eQOSM-r respectively
	5.6.4.9	eqPrr-s, eqPrr-r, ISO Status column: should read respectively "ePrr-s:M" and "ePrr-r:M"
	5.6.4.9	entries eqQOSM-s and eqQOSM-r, status column: Predicates eQOSM should be eQOSM-s and eQOSM-r respectively
	5.6.4.10	entries epQOSM-s and epQOSM-r, ATN Support column: Predicates eQOSM should be eQOSM-s and eQOSM-r respectively
	5.6.4.11 table	heading "ISO Status"
	5.6.4.11 eReasTim row	"M" under ISO Status "M" under ATN Support
	5.6.4.12.2 item iQOSNOT	ATN Support "O"
	5.6.4.12.2	I REPvCst Item "probability"

Chapter	paragraph reference	Details of change
	5.6.4.12.2 table	QOS to be spelled as "QOS" for all entries
5.7	5.7 title	Dependent
	5.7.6.2.1.5.2 note	delete sentence "However, it is not guaranteed to be…"
	5.7.6.2.1.5.7	add "Table 5.7-2." at end
	5.7.6.2.1.6	bad chars in TC entry
	5.7.6.2.1.7.2.1	"Fast Select not Subscribed" and "Fast Select Acceptance not Subscribed" should be in italics
	5.7.6.2.2.1.5	Extra TC entry
	5.7.6.2.2.4.3 plus note	missing. Add: "5.7.6.2.2.4.3 The first octet of the Call Accept User Data shall idenify the compression procedure(s) accepted by the called DTE. *Note. - The bit fields have the same semantics as the ones used for the sixth octet of the Call equest User Data"*.
	5.7.6.2.2.4.4 plus note	missing. Add: "5.7.6.2.2.4.4 The second octet of the Call Accept User Data shall be the first octet of the User Data field. *Note: - The User Data field may be used to convey the ISO/IEC 9542 ISH PDU as part of the routing initiation seqence.*"
	5.7.6.2.4.7 Note 1	"... values listed in Table 5.7-3 shall be …"
	5.7.6.3.2.5.1	replace with "…optional Local reference…"
	5.7.6.3.3.3.1.1	add "Figure 5.7-4." at the end.
	5.7.6.3.4.2.3.4	"...(see 5.7.6.3.5)..."
	5.7.6.3.4.3.2.5.1	"…be derived from the …"
	5.7.6.3.4.4.2.1	"...as defined in 5.7.6.3.4.3.2..."
	5.7.6.3.4.5.1	wrong cross reference on second line
	table 5.7-7	remove revision marks from Code column
	5.7.6.3.6.2.1	"...illustrated in Figure 5.7-6. ..."
	5.7.6.3.6.3.1	add " Figure 5.7-7." at end.
	5.7.6.4.3.2.3.2.2 note a), b) and c)	should be italic
	5.7.6.4.5.2.1.1	"...(5.7.6.4.3)..."
	5.7.6.4.5.2.10.3	remove extra period

Chapter	paragraph reference	Details of change
	5.7.7.7	"ATN Support" column title sounds strange. Should be "Status"
	5.7.7.8.2 footnote	turn into note below table
	5.7.7.8.4	LrReset reference column should be 5.7.6.3.7
	5.7.7.8.4 last column	change "mcMocRef:M" to "mcLocRef:M"
	5.7.7.8.7.1 footnote	to be transformed into a note below table
5.8	figure 5.8-1	security ref column change to OX
	5.8.1.2.3	first reference should be 5.8.2
	5.8.3.2.1 note a), b), c) and d)	should be italic
	5.8.3.2.6.1.1	reference at end should be "5.8.3.4.2."
	5.8.3.2.6.2.1	remove additional comma
	Table 5.8-6	add caption "Table 5.8-6 ISO/IEC 10474 Mandatory Requirements for which support is optional for ATN Airborne Routers"
	5.8.3.4.2 and 5.8.3.4.4	Replace "Index" by "Item" in the heading of the first column of the table in section 5.8.3.4.2. Replace "Item" by "Description" in the heading of the second column of the table in section 5.8.3.4.2. Add "Item" as heading to the first column of the table in section 5.8.3.4.4. Replace "Item" by "Description" in the heading of the second column of the table in section 5.8.3.4.4.
	5.8.3.4.2	Reformulate all entries in the second column of the table of section 5.8.3.4.2 to start with "Does this BIS ....
	5.8.3.4.2	Replace the existing text for the entry ATNIDRP2 by "Does this BIS immediately re-advertise routes if the security information contained in the route's security path attribute changes ?" Replace the existing ATN SARPs Reference by "5.8.3.2.7" for the entry ATNIDRP2 in the table of section 5.8.3.4.2.
	5.8.3.4.2	Replace the existing ATN SARPs Reference for the entries ATNIDRP6 and ATNIDRP7 by "5.8.3.2.6.3" and "5.8.3.2.6.4" respectively in the table of section 5.8.3.4.2.

Chapter	paragraph reference	Details of change
	5.8.3.4.4	Add "(except in the case specified in ATNIDRP2)" at the end of the existing text in the second column of the entry RTSEL in the table of section 5.8.3.4.4.
	5.8.3.4.3	footnote change
	5.8.3.4.6	carrot symbol changed to "or"
	5.8.3.4.10	delete section and re-number subsequent paragraphs
	5.8.3.4.12	A/G Router column OX
	5.8.3.4.15	Item TA - "keep alive timer"
5.9	none	

Technical Defects

The table below identifies the technical defects found and their resolution in the Internet Communications Service SARPs. The changes required to resolve these issues are attached to this Appendix.

Change Proposal number	Subject	Associated DR
96090071	**Routes under empty RIBAtt are non-ATSC**	9609108

	Defect:
	The paragraph 5.8.3.2.12.2 states that:
	" The semantics of the emty RIB_Att shall be taken as implying that routes advertised under the empty RIB_Att:
	  a) have a classification of Unclassified
	  b) have not passed over any mobile subnetworks
	  c) have been classed as ATSC Class H"
	
	The item c) contradicts the forwarding rules of section 5.3.2.2, which prevent an NPDU with a security parameter indicating that it conveys ATSC data, to follow a route which has no ATSC Class Security tag.	

	Impact: The item c) is wrong. An ATSC Route is a route containing an ATSC Class Security tag in its Security Path attribute. Routes advertised under the empty RIB_Att are non-ATSC routes. It is proposed to replace the current text of item c) by the following new text: c) are not available to ATSC traffic	
96100073	**Inconsistent SNDCF parameter block length**	9609109
	Defect: Clause 5.7.6.2.1.5.3 states that the length indicator should give the number of octets in the SNDCF parameter block including the length	

	indicator itself. This is in contradiction with Figure 5.7-2 which shows explicitly the SNDCF parameter block without the length indicator.	
	Impact: The common practice in protocols is to encode LI fields without counting the LI octets themselves. The current wording of the clause was introduced in draft SARPs version 2.1, 17 July 95 with no clear CP justification. All the implementations we know of except one are based on earlier versions of the manual and thus comply to the figure. The clause should be rewritten as follows: "5.7.6.2.1.5.3 The value of the second octet (length indicator) shall be an unsigned binary number giving the number of octets in the SNDCF parameter block (from version number field up to and including (if present) the maximum number of directory entries field)."	
96100074	**Air-Ground Route termination defect**	9609118
	Defect: In the course of the STNA validation work, 2 issues have been raised concerning the Air/Ground Route Termination procedure specified in the Version 6 of ATN Internet SARPs: 1) When IDRP is used over an Air-Ground Subnetwork and when no watchdog timer is applied to the subnetwork connection, it is recommended that the Holding Time field in the ISH PDU be set to 65534 seconds so that to allow the suppression of the periodic ISH exchange and to avoid a premature removal from the FIB of the ISH information at expiration of the Holding Timer. The only action specified by the Air-Ground Route Termination procedure, in section 5.3.5.2.13, when an ISSME receives a leave event, is the invocation of the IDRP deactivate to terminate the BIS-BIS connection. It may be therefore observed, when subnetwork connectivity with a remote ATN router over a mobile subnetwork ceases to be available, that the BIS-BIS connection is closed, that routes are withdrawn from the FIB, but that the ISH information remains stored in the FIB. As a consequence, the network entity of the BIS continues to believe that the remote BIS is reachable via a mobile subnetwork which is nevertheless unavailable. Then in the case where the remote BIS becomes reachable again via another type of subnetwork, the network entity, after the successfull exchange of ISH over the new available subnetwork, will think that the remote ATN BIS is reachable via 2 different subnetworks: the old one (which is in fact not available) and the new one. In the same time, the ISSME will perform and IDRP activate action and IDRP will request the network service to convey the OPEN BISPDU to the remote ATN BIS. It may then happen that the network entity attempts to issue the NPDU conveying the OPEN BISPDU, not through the new available subnetwork but through the old unavailable subnetwork. This may prevent the BIS-BIS connection establishment. 2) The Air-Ground Route Termination procedure in section 5.3.5.2.13 provides	

	no directive for the case where the subnetwork connectivity with a remote ATN Router ceases to be available over a mobile subnetwork but remains available over another mobile subnetwork. It should be said that no IDRP deactivate action must be invoked but that the security attribute of the route must be updated and that the IDRP Routing Decision function must be reinvoked.	

	Impact:
	Add, after the paragraph 5.3.5.2.13.5, the following new paragraphs:
	
	"5.3.5.2.13.6 When an IS-SME receives a Leave event indicating that there are no subnetwork connection established anymore on an identified subnetwork with an identified DTE, then it shall erase the configuration information that was extracted from the ISH previously received from that DTE on that specified subnetwork, without waiting for the expiration of the Configuration Information Holding Timer."
	
	"5.3.5.2.13.7 If, in spite of a Leave event, other subnetwork connections are available with the ATN router that was the ultimate subject of the Leave Event then,
	
	1 - In the case of an ATN Air-Ground Router having established a BIS-BIS connection with that ATN Router or having simulated a BIS-BIS connection if that ATN router implements the procedures for the optional non-use of IDRP, then:
	
	    a) the ISSME shall cause the update of the Security path attribute's security information of all routes contained in the Adj-RIB-In associated with the remote ATN Airborne Router, and
	
	    b) the ISSME shall cause the IDRP Routing Decision function to be invoked in order to rebuild the FIB, the Loc_RIB and relevant Adj-RIB-Out(s) taking into account the loss of subnetwork connectivity.
	
	    c) the Air-Ground Router shall re-advertise all routes affected by the change in subnetwork connectivity that are contained in the Adj-RIB-Outs subsequent to the update of the security path attribute's security information of these routes as specified in Chapter 5.8
	
	2 - In the case of an Airborne router implementing the procedures for the optional non-use of IDRP, the ISSME shall update the Security path attribute's security information of all routes contained in the simulated Loc-RIB used to generate FIB information"
	
	Replace the first sentence of paragraph 5.3.5.2.13.6 by:
	"5.3.5.2.13.8 If, as a result of a Leave Event, there are no other subnetwork connections with the ATN Router that was the ultimate subject of the Leave Event then,"	

96100077	**Clarification Needed on setting CE-bit**	9609113

	Defect: Unfortunately, there is an implicit assumption in this text that the queue is a single priority queue. However, it is valid for an implementor to implement a mixed priority queue provided that priority order is maintained. In this case, the requirement has to be re-stated as "when the number of NPDUs on the queue of the same or a higher priority exceeding alpha, the CE-bit shall be set". If this is not done then false indications of congestion will be given and a high priority transport connection slowed down because of a high level of low priority data. A clarification is needed here so that implementors are aware of this problem.	
	Impact: Suggested text is: Note. The above assumes a single output queue per network (CLNP) priority. If mixed priority queues are implemented, which is valid provided that priority order is always maintained, then the CE-bit is set only when the number of NPDUs on the queue of the same or a higher priority exceeds alpha.	
96100078	**Routing on Longest Matching Prefix**	9609112
	Defect: The proposed changes to section 5.3.2.2 are described in the attached document. This includes change bars to show where changes have been made to original text of section 5.3.2.2	
	Impact: text change	
96100079	**Change Proposal on non-ATSC routes**	9609115
	Defect: There is a requirement for the capability for ATSC-only routes. For both air-ground and ground-ground paths, a path may be marked for ATSC-only, or non-ATSC-only, or both.	
	Impact: text change	
96100082	**inconsistent text in 5.3.7**	9609119
	Defect: The proposed changes to section 5.3.7 are described in the attached document. This includes change bars to show where changes have been made to original text of section 5.3.7	
	Impact: text change	
WG2/10 flimsy #9	**transport timer and protocol parameter settings**	

	Defect: nominal values not included in version 6.0		
	Impact: text addition in section 5.5.2.2.12		
WG2/10 flimsy #8	**Maximum use of COTS**		
	Defect: The ATN was requested to ensure that the SARPs contained provisions for the maximum use of COTS products		
	Impact: text addition to 5.2.2.6.1		

EDITORIAL NOTE:
THERE ARE ADDITIONAL PAGES ASSOCIATED WITH THIS FLIMSY, BUT THEY ONLY EXIST IN HARD COPY AND THEREFORE ARE NOT ATTACHED TO THIS MEETING REPORT. THE HARD COPY PAGES ARE PAGES FROM THE V6.0 ICS ATN SARPS, WITH CHANGE BARS SHOWING THE CHANGES REQUIRED AS A RESULT OF THE <u>TECHNICAL</u> DEFECTS LISTED ABOVE.

54.   Appendix O - Action List

REF.	DELIVERABLE	Actionee	Complete by
	MELBOURNE WG		
	TOULOUSE WG		
	FAIR OAKS WG		
	ROME WG		
	BANFF WG		
	BRISBANE WG		
7/22	Propose format for NSAP address repository on CENA archive	JM CRENAIS	Ongoing
	BRUSSELS		
8/7	Continue Simulation work to determine optimum value for congestion management beta value.	MR. HOF	Ongoing
	MUNICH		
	ALEXANDRIA		
10/1	Modify procedures doc include ICS RDB as a controlled item	S Cosgrove	ATNP/2
10/2	Determine if any cross references require update after table 5.8.3.4.10 is removed	JP Briand	Complete (no impact)
10/3	Research AMSS Priority Level choices and priority alarms	H Thulin	Superseded by Flimsy #15
10/4	Liaise with AMCP regarding use of priority level settings	A Sharma	Superseded by Flimsy #15
10/5	Check AMSS priority mapping table and determine a reference	H Thulin	Superseded by Flimsy #15
10/6	review section 5.2.8.5.1.2, particularly paras c) &d), for consistency and high priority mapping - submit a dr & draft cp to the ccb.	Mr Herber	ATNP/2
10/7	Produce Chapter 7 of the ICS GM	Mr Adnams	WGW Mar 97
10/8	Review WG2 ATNP Paper for word/wordperfect translation errors	Mr Sharma	JWG Alexandria