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To: ATNP WG2 Members & Interested Parties

**Report of the 8th ICAO ATNP WG2 Meeting**  
**Brussels, Belgium, 22nd - 26th April, 1996**

Please find attached the First Issue of the Report of the Eighth ATNP WG2 meeting recently hosted by EUROCONTROL in Brussels. Any comments by those who attended the meeting would be greatly appreciated so that they may be included in a revision of the report if appropriate. 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.

Please ensure all agreed actions are completed prior to the next WG2 meeting in Munich.

In order to avoid unnecessary photocopying costs please bring a copy of this report, Version 5.1 of the draft Sub Volume SARPs (planned to be available on the CENA archive on 10th June), Version 1.2 of the draft guidance material (soft copy was made available in Brussels) and any Working Papers made available prior to the next meeting in Munich (for which an invitation has already been sent out) with you if you plan to attend that meeting.

I look forward to meeting you all once again in Munich !

Yours Sincerely

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

AERONAUTICAL TELECOMMUNICATIONS NETWORK PANEL

Brussels, Belgium

22.4.96-26.4.96

Issue 1.0

**ATN Internet Working Group 2 (WG2)  
Eighth Meeting Report**

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## **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 eighth meeting of Working Group 2 (WG2) of the ATNP which was hosted by EUROCONTROL in Brussels, Belgium in the period 22<sup>nd</sup> - 26<sup>th</sup> April 1996.

Twenty four experts from six States (Canada, Japan, Germany, USA, France, UK) and five International Organisations (ARINC, SITA, INMARSAT, IATA, EUROCONTROL) attended the meeting. The list of attendees is at Appendix A. A total of 33 Working Papers were submitted to the meeting, the list is at Appendix B.

Mr. Sharma reported that he would be leaving the UK NATS at the end of May as a permanent member of their staff. However, he stated that it was NATS intention that he continue to work for them under arrangements to be determined in order to continue as Rapporteur of the WG and as UK ATNP Member up to at least the conclusion of ATNP/2.

## **2. Agenda Item 1 - Approval of Agenda and Objectives**

2.1 Mr. Sharma, Rapporteur of WG2, opened the meeting and drew the participants attention to the Working Papers that had been prepared for the meeting and, in particular, to WP/251 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. Sharma in advance of the meeting.

2.2 The meeting agreed the objectives for the meeting as proposed in WP/251 and are reproduced below:

- to progress Version 4.1 of Sub-Volume V to Version 5.0;
- to agree on terms of reference for Editorial Committee;
- to review and agree detailed work plan in order to submit final draft Sub Volume 5 SARPs to ICAO by mid July '96;
- to review available guidance material and agree detailed work plan to submit final draft to ICAO by a date to be agreed;
- to agree on terms of reference for guidance material drafting group;
- to review draft validation report material and agree detailed work plan to submit report to ICAO by end of June '96
- to agree detailed work plan to consolidate validation results by mid-October '96
- to review, and where appropriate resolve, issues arising from other ATNP WGs & other Panels

2.3 The agenda was adopted as proposed in WP/251 and reproduced in Appendix C.

## **3. Agenda Item 2- Approval of Brisbane WG2 Meeting Report**

3.1 The report of the Brisbane meeting was agreed with the following minor amendments:

- Para. 4.1 World Wide Plan is currently in first Draft as pointed out by Ms Cosgrove;
- Para. 10.1.1.3 - typo - change "t" to "to"
- Para. 10.4 - Information Papers referred to should be referenced by WP no, i.e. WPs 203, 209, 222, 226, 244 & 248.

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

<b>Ref</b>	<b>Deliverable</b>	<b>Actionee</b>	<b>Status</b>
	<b>MELBOURNE WG</b>		
	<b>TOULOUSE WG</b>		
	<b>FAIR OAKS</b>		
Action - 4/1	To develop high level proposals for CNS/ATM-2 internet requirements for presentation to the October ATNP WG meetings.	Ron Cossa	Ongoing
	<b>ROME</b>		
	<b>BANFF</b>		
6/8	To make the AMSS SARPS Validation Report available at WG2/7	Ron Cossa	Complete
6/14	To submit DR and Draft CP to CCB proposing corrections to traffic type terminology	Mr. Sharma	Ongoing
6/22	To provide IATA tool specification information based on guidance provided as a result of 6/17	Mr. Hennig	Ongoing
6/31	To complete draft Section 3 of Guidance Material	Mr. Sharma/Mr. Hennig	Ongoing
6/33	To complete draft Section 5 of Guidance Material	Mr. Roy	Ongoing
6/35	To complete draft Section 7 of Guidance Material	Mr. Hennig	Ongoing
	<b>BRISBANE</b>		
7/1	Submit CP for DR 68 related to "RDI" terminology	H Hof	Complete
7/2	Section 4 GM to include amendments to subnetwork priority mapping table based on DR 70.	H Hof	Complete
7/3	Section 4 GM to address issues raised in DR's 10, 19 & 50	H Hof	Complete
7/4	Submit CP for DR 31	H Hof	Complete
7/5	Submit CP for DR 44	H Hof	Complete
7/6	Submit CP for DR 46	KP Graf	Complete
7/7	Submit CP for DR 63 (Security parameter settings in BISPDUs)	H Hof	Complete
7/8	Submit CP related to procedures required for policy based route aggregation & policy based route information reduction based on WP/199.	H Hof	Complete
7/9	Continue simulation work in order to provide optimal values for parameters in adopted Congestion Management algorithm (WP/197, 231)	H Hof	Complete
7/10	Submit CP's for WG agreed defects proposed in WP/221, Section 2.1	JM Crenais	Complete
7/11	Submit DR & CP based on Section 2.2 of WP/221	JM Crenais	Complete
7/12	Submit DR & CP based on Section 5 of WP/221	JM Crenais	Complete
7/13	Submit DR based on Section 7 of WP/221 (traffic type semantic & handling within IS's)	F Colliver	Complete
7/14	Submit DR & CP in order to align Chapter 2 & Chapter 6 with reference to security classification.	JM Crenais	Complete
7/15	Review CIDIN SND CF SARPs in Sub-Vol. V & , if appropriate, submit DR's & CP's taking into account WP/230 & applicable ASPP material.	R Cossa	Complete
7/16	Replace Sub-Vol. V Foreword with WP/228.	JM Crenais	Complete
7/17	Replace Sub-Vol. V Introduction with WP/229 as amended by WG.	JM Crenais	Complete
7/18	Submit CP based on WP/236	H Hof	Complete

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<b>Ref</b>	<b>Deliverable</b>	<b>Actionee</b>	<b>Status</b>
7/19	Submit Change Reqs (CR's), DR's & CP's based on WP/247 & AMCP WG VDL specific Mobile Sndcf requirements.	A Roy	Complete
7/20	Implement WP/198 as amended by WG into Version 4.0 of Sub Vol. V.	JM Crenais	Complete
7/21	Draft recommendation for ATNP/2 requesting that ICAO request States to establish registration authorities for NSAP addresses.	F Colliver	Ongoing
7/22	Propose format for NSAP address repository on CENA archive	A Sharma	Ongoing
7/23	Develop guidance material for route aggregation, route merging & route information reduction.	H Hof	Ongoing
7/24	To develop guidance material for VDL Mode 3/CLNP priority mapping	R Cossa	Ongoing
7/25	To develop guidance material related to TP4 timer settings	R Cossa	Ongoing - Changes incorporated in Version 4.1 address some of the concerns raised.
7/26	To develop guidance material related to subnetwork priority invocation & use of the X.25 Idle timer	H Thulin	Ongoing
7/27	To develop guidance material related to security label handling by transport service/entity	A Sharma	Ongoing
7/28	To develop guidance material related to traffic type semantic and handling within ISs.	F Colliver	Ongoing
7/29	To develop guidance material related to (a) NSAP, TSAP address registration and assignment , (b) efficient assignment of ground ARS values to support efficient global routing	KP Graf	Ongoing
7/30	To develop guidance material on congestion management.	H Hof	Complete
7/31	To discuss with Panel Secretary latest submission date for guidance material	A Sharma	Complete -
7/32	To consolidate guidance material available & issue next draft Version 1.2	C Pellegrino	Ongoing
7/33	Present results of NUT Concept Validation Trials	P Hennig	Ongoing
7/34	To review & comment on Validation Objectives	All	Complete
7/35	Develop proposal for Validation Assessment Process	H Hof	Ongoing
7/36	To review & comment on proposed SARPs Requirements Database	All	Complete
7/37	Update CCB Procedures (WP/66) to reflect EC as Requirements Database Editor & the requirement that CP's submitted must also propose corresponding changes to Requirements Database.	R Cossa	Complete
7/38	Make available "JPL" graphical notation to support description of experimental network configurations	H Hof	Complete
7/39	Consolidate all available Validation Tool Descriptions	H Hof	Ongoing
7/40	Continue development of Validation Report for submission to WG2/8	P Whitfield	Ongoing

<b>Ref</b>	<b>Deliverable</b>	<b>Actionee</b>	<b>Status</b>
7/41	Review ATN Specific PRLs with respect to replacing the words "use of" with "support of"	TBA	Ongoing
7/42	Submit WG2 "System Level Requirements" to WG1 Sub-Volume 1 Drafting Group	S Cosgrove	Complete
7/43	Submit Flimsy 9 & Flimsy 11 to Panel Secretary related to AMCP co-ordination	A Sharma	Complete
7/44	Submit CR & draft CP to CCB related to security label change as indicated in Flimsy 12, Rec. 2 on behalf of WG3.	S VanTrees	Complete
7/45	To submit DR/CP to CCB proposing revisions to note 5.1.2 c) to reflect para. 5.1 of WG2/Flimsy #7-12	S VanTrees	Complete
7/46	Develop Sub Volume 5 Guidance Material on the subject of achievable RERs through the use of transport checksum and subnetwork specific mechanisms in response to WG2 Flimsy 7-12, para. 5.2	S Van Trees	Complete

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

4.1 Ms Cosgrove presented WP/264, " The Impact of Sub Volume 1 on Sub-Volumes 2 through 5 SARPs and Guidance Material". The WP included a number of proposals which were viewed as relevant to WG2:

4.1.1 Remove glossaries from existing SARPs - WG2 accepted

**ACTION 8/1 - MR. CRENAIS - REMOVE REFS GLOSSARIES & ACRONYM LIST FROM SUB VOLUME 5 SARPS**

4.1.2 Check for discrepancies between the glossaries/acronym list and propose updates to Sub Volume 1 - WG2 accepted

**ACTION 8/2 - MS COSGROVE - CHECK FOR DISCREPANCIES BETWEEN THE GLOSSARIES/ACRONYM LIST AND PROPOSE UPDATES TO SUB VOLUME 1**

4.1.3 Remove the reference sections from Sub Volume 5 SARPs - WG2 agreed. However , the WG recommended that the reference section in the Sub Volume 1 SARPS be structured to reflect applicable references to each of the succeeding Sub Volumes. Ms Cosgrove undertook to report the recommendation back to WG1.

**ACTION 8/3 - MS COSGROVE - REPORT WG2 RECOMMENDATION THAT THE REFERENCE SECTION IN THE SUB VOLUME 1 SARPS BE STRUCTURED TO REFLECT APPLICABLE REFERENCES TO EACH OF THE SUCCEEDING SUB VOLUMES.**

4.1.4 Remove traffic type definitions from existing SARPs. It was agreed to re-visit this proposal once the WG had reviewed WP/259, " Sub Volume 1, Version 0.4 Introduction and System level Requirements ".

4.2 Ms Cosgrove presented WP/259, " Sub Volume 1, Version 0.4 Introduction and System level Requirements ". The meeting reviewed WP/259 in detail and generated a number of comments that were to be fed back to WG1. Ms Cosgrove documented these comments in Flimsy #4, Appendix E.

4.3 As a result of Action 7/43, (Submit Flimsy 9 & Flimsy 11 to Panel Secretary related to AMCP co-ordination), Mr. Sharma reported that the Secretary had requested that he combine the two Flimsies into a



single draft AMCP/3 WP. This had been done and the result forwarded to the Secretary for final processing and presentation to the AMCP/3 meeting. Ms Thulin, Mr. Roy & Mr. Barbulescu, however, did not believe that any form of this combined WP was presented to the AMCP meeting. Consequently, they believed that the VDL SARPs adopted by the AMCP did not take into account the WG2 recommendations/proposals contained in Flimsies 9 and 11 from the Brisbane WG2 meeting.

**ACTION 8/4 - MR SHARMA - TO INVESTIGATE WHAT THE PANEL SECRETARY DID WITH THE COMBINED FLIMSY 9/11 AMCP WP, AND IF IT WAS NOT PRESENTED TO THE AMCP MEETING TO AGREE ON A STRATEGY WHEREBY THE RECOMMENDATIONS IN THE PAPER COULD BE ACCOMMODATED.**

4.4 Mr. Sharma reported on the recent correspondence the Panel Secretary had sent out to Panel Members regarding the dates for ATNP/2 and the need to translate the material into the applicable ICAO languages. He understood that the dates for ATNP/2 had not changed, i.e. they remained as 4th - 15th November. (*Note. - 11th November is a public holiday in Canada.*)

## **5. Agenda Item 4 - CNS/ATM-1 Registration Authority**

5.1 There were no papers presented under this Agenda Item. However, Action 7/22 (Propose format for NSAP address repository on CENA archive) was briefly discussed and Mr. Colliver undertook to develop a Flimsy (#1) which would propose the format of the address repository. (*Note. - Mr. Colliver had to leave the meeting before its conclusion and was consequently unable to present the Flimsy.*)

## **6. Agenda Item 5.1 - Report of the CCB/Review of CCB Recommendations**

6.1 WP/262, "WG 2 Configuration Control Board Activity in Support of CNS-ATM-1 Internet SARPs" was presented by Mr. Cossa. The WP documented the results of the CCB process to date which resulted in Version 4.1 of the draft SARPs (WP/252) being issued as had been planned at the Brisbane WG2 meeting.

6.2 Mr. Roy undertook to take into account CPs 45 & 46 into WP/270 which he was developing in real time. It was pointed out that whilst CP69 had been accepted by the CCB it had not been incorporated into WP/252 (Version 4.1 of the draft Sub Volume 5 SARPs). It was agreed that it should be attached to the report of the meeting as a Flimsy for incorporation into the next version of the draft SARPs. (*Note. - The CP was subsequently absorbed into a number of changes agreed in Flimsy #9, Appendix J.*) WP/262 stated that whilst DR100 had been accepted as a defect no agreed proposals on a corresponding CP had been developed since further study on the subject in question (IDRP Timers) was required.

**ACTION 8/5 - TBD - INVESTIGATE ISSUES REQUIRED TO DEVELOP CP FOR DR100 (IDRP TIMERS)**

6.3 WP/261, "ATNP CCB Procedures Document", was presented by Mr. Cossa. The document had been updated as a result of action 7/37 assigned in Brisbane (Update CCB Procedures (WP/66) to reflect EUROCONTROL as Requirements Database Editor & the requirement that CP's submitted must also propose corresponding changes to Requirements Database). The meeting reviewed and agreed the proposed changes which were specific to the action. Mr. Whyman noted other areas of the document which required updating to currently employed procedures and was subsequently encouraged to propose detailed changes (as were all meeting participants). Mr. Crenais undertook to investigate the impact of the proposed changes on the CENA automation software and later confirmed that there was no impact. The meeting was reminded that the Requirements Database, as agreed in Brisbane, would be aligned with Version 6.0 of the draft SARPs that will be adopted at the Munich WG2 meeting and it would be at that point in time when the revised procedures of WP/261 should be adopted. This was agreed.

## **7. Remove Traffic Type Definitions from existing SARPs**

7.1 Further to para. 4.1.1, the meeting agreed with the principle that the text related to traffic type (i.e. ATSC Classes) definitions should be moved from Sub Volume 5 to Sub Volume 1. Ms Cosgrove agreed to

develop a Flimsy (#3, Appendix D) which was to document a draft Change Proposal for the removal of applicable material. Mr. Whyman agreed to support Ms Cosgrove in this drafting.

## **8. Agenda Item 5.2 - Review of Proposed Changes**

8.1 WP/255, “Results of Simulation Exercises on Congestion Management”, was presented by Mr. Rose as an Information Paper.

8.2 WP/254, “Comments on Congestion Avoidance Mechanism proposed for the ATN”, was presented By Mr. Rose. The paper identified a number of problems with the Congestion Avoidance mechanisms defined in Version 4.0 of the draft SARPs, i.e. the version agreed with the WG at Brisbane.

8.2.1 WP/254 included draft CP material in support of the above proposed resolutions. However before reviewing the proposed changes in detail it was agreed that WP/267 be presented.

8.3 Mr. Whyman presented WP/267, “Report on the Further Investigation of Network Layer Congestion Management in the ATN Internet” as a result of Action 7/9 agreed in Brisbane in order to further refine the Congestion Management algorithm defined in the draft SARPs. The paper documented the combined results and analysis of on-going simulation work of both EUROCONTROL and the DFS (as reported above in paras. 8.1 and 8.2) since the Brisbane WG meeting. Based upon the results and subsequent analysis the paper proposed a number of detailed changes to the current specification along the lines of those presented in WP/254. The paper concluded that the majority of simulation work on the subject for ground/ground use had been completed and that only testing of the defined algorithms in real implementations was now outstanding. However, the paper noted that validation work in support of air/ground use and interaction with network priority is outstanding whilst also noting that no significant problems are envisaged in this area. The paper recommended that the WG accepts the proposed changes to the draft SARPs and records this paper as a contribution towards the validation of the draft SARPs. The WG noted that the simulation work had been based upon the WG agreed ATN Validation Objectives (AVOs) and encouraged other validation activities to also report results against the AVOs where applicable. It was noted that both WPs 254 & 267 proposed changes to the draft SARPs. It was agreed to review the proposed changes in of WP/254 , the WG resolutions “in principle” follow:

- Proposed Resolution in par. 1.1.2 (**Network Layer/Setting of the congestion experienced flag**) - WG adopted.
- Proposed Resolution in par. 1.2.2 (**Network Layer/Reporting Congestion Experienced information to the Transport Layer**) - WG adopted. It was noted adoption of this proposal would require the Network Layer to maintain 2 counters. In support of the preferred option (from those listed in par. 1.2.1) Mr. Rose explained that he preferred that the congestion avoidance algorithm was not split into 2 parts.
- Proposed Resolution in par. 2.1.2 (**Transport Layer/Update of Advertised Window**) - WG adopted. Mr. Rose was asked how the receiver knows what the Round Trip Time (RTT) is given that the proposed resolution required that the receiver ignore congestion indications for a period approx. equal to the RTT after having adjusted and advertised a new window to the sender. Mr. Rose admitted that the receiver does not have the means to determine the actual RTT in terms of seconds and that he would typically need to wait for a number of packets equal to the window size as an approximation to the RTT.
- Proposed Resolution in par. 2.2.2 (**Transport Layer/Types of TPDU sampled**) - WG adopted the proposal that the receiver only looks at DT TPDUs. It was, however, noted that no simulation work on this aspect of the algorithm had been performed.
- Proposed Resolution in par. 2.3.2 (**Transport layer/Window Decrease Factor**) - WG adopted. It was however noted that further simulation work was required to identify an optimal value for Beta rather than the proposed range of 0.75 to 0.95.

**ACTION 8/7 - MR. HOF - CONTINUE SIMULATION WORK TO  
DETERMINE OPTIMUM VALUE FOR CONGESTION MANAGEMENT  
BETA VALUE**

8.3.1 It was agreed that the draft CP material included in both WPs 267 & 254 be consolidated into a single overall draft CP for consideration by the WG. Mr. Whyman undertook to develop a Flimsy (#5) that would document such a CP.

8.4 WP/254 also proposed that some of the information contained therein may be suitable material for inclusion in the guidance material. This was noted.

8.5 WP/253, "Status of WG2 VCRs", was presented by Mr. Crenais. The WP documented the status of all VRCIs on 15/4/96. The paper proposed a new status for the VRCIs which had been resolved by or implemented in version 4.1 of the draft SARPs. The meeting was informed that by accepting Version 4.1 of the SARPs the proposed status of the CCB "Accepted Defect Reports" would change to "RESOLVED" and the proposed status of the CCB "Accepted Change Proposals" would change to "IMPLEMENTED".

8.6 Mr. Crenais presented WP/252, "Sub Volume 5, Internet Communications Service, Version 4.1". The meeting reviewed each of the modifications inserted since Version 4.0 with the aid of the summary of modifications that accompanied Version 4.1. It was agreed that, in order to ease referencing, future versions of the modifications summary should be explicitly numbered.

**ACTION 8/6 - MR CRENAIS - INCLUDE EXPLICIT NUMBERING IN  
FUTURE SARPS MODIFICATIONS LISTS.**

8.6.1 As a result of the WGs review of the proposed modifications in the Version 4.1 of the SARPs the following Flimsies were actioned for development:

- Flimsy 6 - IDRPs Activation during a/g routing initiation - Mr. Tamelet
- Flimsy 7 - Changes to TP4 Timer Specification - Mr. Cossa
- Flimsy 8 - Proposed Modifications to Table 8-5 - Mr. Whyman
- Flimsy 9 - Proposed Changes to 8.3.1.4.2 - Mr. Whyman

8.6.2 Mr. Sharma had to leave the meeting for 45 minutes or so in order to present the IATA Seminar with presentation on the ATN. Mr. Adnams kindly volunteered to chair the meeting in Mr. Sharma's absence.

8.7 WP/256, "Fast Select", was presented by Mr. Tamelet. The paper listed two issues which required the attention of the WG, namely:

- inter-operability between ATN compliant systems & COTS implementations with respect to the recent WG" Brisbane decision to change the expression of the TP4 Acknowledgment Timer to seconds instead of the ISO requirement of milli-seconds;
- mobile SNDCF compression negotiation based on validation work of the ADS Europe project whereby the Fast Select facility was not being translated across X.75 gateways that inter-connect PTT networks and the subsequent inability to negotiate compression techniques which require the support of the Fast Select facility across the entire subnetwork (i.e. between BISs).

8.7.1 It was agreed to defer discussion of the first issue (acknowledgment timer) until the meeting had been presented with Flimsy #7(Changes to TP4 Timer Specification) that was being developed by Mr. Cossa.

8.7.2 With respect to the second issue, (compression negotiation), the WG agreed that the problem reported, whilst not strictly a defect, did exist and discussed a number of methods which would facilitate the negotiation of mobile SNDCF compression techniques in cases where the fast select facility is not supported. The WG concluded the most efficient method would be to make use of the X.25 diagnostic code feature whereby the ground system would, in the call request, propose a certain compression technique(s) and the responding system, in cases where it did not support the proposed technique(s) respond in its call reject packet

with a diagnostic code representing the compression technique(s) supported. Mr. Whyman undertook to develop Flimsy #10 which would propose a draft CP to comply with this agreed method. (*Note. - the responsibility for developing this Flimsy was later transferred to Mr. Roy.*)

## **9. WG2 Preparation for Agenda Item 6 - Joint Session with WG3 on Validation & Other Common Subjects**

9.1 The meeting briefly reviewed WPs that would be discussed at the Joint Session with WG3 later in the day.

9.2 WP/273, "Use of ATSC Traffic Types, Ron Jones, WG3/WP6-14)", was briefly reviewed. The meeting noted that the terms "ATSC Traffic Types" were being interpreted by the author to be synonymous with the term "ATSC Routing Class" as used in the draft Sub Volume 5 SARPs. The paper proposed that WG3 develop a Flimsy to WG2 stating their position with respect to a number of issues related to the ATSC Routing Class and handling thereof. In particular, the WP noted that the recent ADSP WG meetings (Dakar) had adopted the concept of "performance levels" (based on the "ATSC Routing Class Concept) and included material in their draft ICAO Manual of ATS applications defining performance levels "A" through "J", with each level categorised by mean, 95% and 99.996% end-to-end transfer delays. The meeting agreed that for CNS/ATM-1 the number of Routing Classes should ideally as currently specified in Sub Volume 5 (i.e. classes "A" through "H") and that this position would be forwarded to the Joint Session. The meeting noted that WP/273 suggested that routing policy in ground Routers could be optional in that certain States, depending upon their operational environments, may choose to discard ATSC data for which appropriate class of routes were not available (i.e. strong) whilst some States may decide that ATSC data should be forwarded irrespective of whether or not the requested class (or better) of ATSC route is available.

9.3 Mr. Whyman presented WP/266, "The Use of ATSC Class in the ATN Internet". Mr. Whyman explained that the paper had been developed in response to recent e-mail exchanges between members of WG2 & WG3 over a possible mis-understanding on what the "User Requirement" for ATSC Routing policy actually is. The paper recalled the decisions of the Joint WG2/WG3 in FairFax last year and the revisions agreed in Banff. The paper proposed a User Requirement which essentially proposed a "first strong then weak" approach and proposed a supporting change proposal to the SARPs to comply with the proposed User Requirement. It was noted that the current provisions in the draft SARPs (Version 4.1) mandate a "strong" approach. The meeting agreed to propose to the joint session that WP/266 be used as the basis of the joint discussion on Routing Policy since Mr. Adnams believed that the WG3 Eurocontrol representative had already presented the paper to WG3.

9.4 The meeting did not have time to review WP/275, ("Proposed WG3 Inputs on Validation for JWG WP to ATNP/2, Presented by WG3 Rapporteur, WG3/WP6-15") in preparation for the Joint Session.

## **10. Agenda Item 6 - Joint Session with WG3 on Validation & Other Common Subjects**

10.1 The Joint Session was chaired by Mr. Jones & Mr. Sharma. Mr. Hof announced the fact that all WG participants were invited to attend the ATN Live Demonstration that was a part of the IATA "On the Threshold of the ATN" Seminar which EUROCONTROL was hosting concurrently with the ATNP WGs. The session was limited to half a day and the following topics were planned to be discussed:

- JWG Validation Report for submission to ICAO, (to be based on WG2/275, WG3/WP6-15);
- Consistency of format between the 5 Sub Volumes under development, (to be based on WG3\Flimsy #5, Matters of Style");
- ATSC Routing Policy (to be based on WG2/WP273 (WG3/WP6-14) & WG2/WP266).

10.2 Mr. Jones presented the proposed draft JWG Validation Report (attachment to WG3/WP6-15) , which, as agreed at the Brisbane WG1 meeting, would be an ATNP/2 WP (in the order of 5/6 pages) developed by WG1 describing the CNS/ATM-1 SARPs validation initiatives and would include a recommendation that

ATNP/2 approve the draft SARPs based upon the validation results. It was agreed that the detailed validation results to be consolidated and agreed at the October WG meetings would serve as an attachment to this ATNP/2 WP and would be submitted to the Panel Secretary at the conclusion of the October meetings. A number of comments were noted which Mr. Jones undertook to consider for implementation in the next draft of the WP. In particular it was agreed that section 2 of the document should be divided into 2 parts - the first part addressing the structured approach to requirements definition and the second part defining the Validation process itself based on a comment from Mr. Van Roosbroek. Mr. Sharma agreed that WG2 should review the Sub Volume 5 ATN Validation Objectives (AVOs) and map them against the System Level Requirements (SLRs) defined in Sub Volume 1. Mr. Briand commented on the WPs need to reflect the "quality approach" that had been adopted by the WGs and that the final recommendation to adopt the SARPs at ATNP/2 should be based on a qualitative assessment/judgment by the WGs of the validation results presented in October.

10.3 Mr. VanTrees presented WG3/Flimsy #5 ("Matters of Style, WG2/WP277). The Flimsy proposed a number of conventions on editorial/presentation/format matters for adoption by all WGs for implementation in their respective Sub Volumes. Mr. Jones opined that the editors should try and ensure that the final text submitted to ICAO is as "camera ready" as possible in order to avoid any unnecessary delays that might be introduced by ICAO. Mr. VanTrees undertook to update Flimsy #5 in order to correct a number of inconsistencies/errors. All editors undertook to implement the requirements of the Flimsy as far as was practically possible. The meeting spent some time discussion the need to translate the draft SARPs material from Word 6 to WordPerfect. A number of people strongly believed that it was not the work of the WGs to concern themselves with such issues and that any such effort on translation should not detract from the mainline technical activities of the WGs.

10.4 Mr. Jones presented WG2/WP273 (WG3/WP6-14), "Use of ATSC Traffic Types". After considerable discussion it became clear that the meeting could not conclude on whether or not "strong" routing policy was required, i.e. that ATSC data be discarded by the Internet when only routes with a lower than requested class of service were requested. Due to lack of available time available to the Joint Session the meeting agreed to set up a sub-group to consider WP/273 and WP/266 further in order to present a consolidated proposal to a Joint Session of the WGs scheduled for Thursday morning.

## **11. Agenda Item 5.2 - Review of Proposed Changes (Continued)**

11.1 Mr. Hennig presented WP/271, "Sub Drafting Group Interim Report", which was a report on the progress of the drafting group set up at the Brisbane WG2 meeting to review the draft Sub Volume SARPs against the ATN Systems Inc. RRI Specification with the objective of identifying defect reports in the SARPs. Mr. Cossa reported that the CCB did not consider the report at their recent meeting held in the last week of March. Mr. Cossa agreed to convene an ad-hoc CCB session to review the entire WP in detail and propose a draft CP in Flimsy #11. Mr. Hennig reported that he had not received any feed-back from Pat Feighery on the CLNP review and therefore concluded that the RRI was consistent with the draft SARPs for the protocol in question.

11.2 WP/270, "Change Proposal for ATN SNDCF to Accommodate VDL", was presented by Mr. Roy as a result of Action 7/19 (Submit Change Reqs (CR's), DR's & CP's based on WP/247 & AMCP WG VDL specific Mobile SNDCF requirements) agreed at the Brisbane WG2 meeting. The paper documented the results of an analysis of the VDL SNDCF requirements developed by ICAO AMCP WG-C and recommended changes to the CNS/ATM-1 SARPs for consistency between the internetworking and VDL subnetwork requirements. At the conceptual level the WP proposed two changes to the current Sub Volume 5 SARPs.

11.2.1 The first of these related to the ability of the SNDCF to support the sharing of compression tables between at least two virtual circuit connections. This, it was proposed, could be accomplished through the use of the fifth bit of the compression technique octet (i.e. the sixth octet of the Call User data field) to indicate whether the SNDCF context is to be maintained from an old SVC to a new SVC. It was noted that the VDL SARPs refer to this bit as the "Maintained/Initiated M/I" bit and that the Sub Volume 5 SARPs currently denoted this bit as "spare". Mr. Sharma noted that before any such proposal could be accepted the impact on other ATN compliant mobile subnetworks needed to be addressed. Mr. Roy believed that the other subnetworks could use such a facility for their benefit. Mr. Whyman was of the opinion that the SNDCF should be kept as simple as possible and preferred that the additional complexity be dealt with by the VDL subnetwork.

Mr. Sharma pointed out, that from a political perspective, ATNP must look at these proposals with a will to implement them if there was to be any chance of proposing removal of the Mobile SNDCF requirements from the VDL SARPs. Mr. Roy believed that, from a total system perspective, the proposed change would result in a simpler & more efficient system. Mr. Sharma questioned whether there had been any validation of the proposed change within the context of on-going VDL validation work. Mr. Roy believed that validation of VDL in general was underway though no results to date had been made available. The meeting agreed to the proposed change in principle whilst recognising that validation was planned and that further issues may be raised when the WG reviewed the detailed changes to the SARPs text. With reference to Attachment 1 (of WP/270) which simply listed the proposed changes it was agreed that Mr. Roy develop a Flimsy (#12) that would transcribe the proposed changes into a draft CP visibly indicating the proposed changes to the draft SARPs text.

11.2.2 The second change related changing the current "recommendation" in the SARPs with respect to the use of the Fast Select facility to a mandatory requirement, i.e. when a subnetwork supports the Fast Select facility it "shall" be used. The meeting noted that, in this context the "subnetwork" comprises all subnetworks between two BISs irrespective of whether they are interconnected through means such as an X.75 gateway. It was questioned as to how a BIS would know whether or not a "subnetwork" supports the fast select facility since it was believed by a number of participants particularly Mr. Herber that the actual end-to-end subnet path (i.e. between BISs) path could not be known a-priori. Mr. Roy & Hennig explained that, based on current trials experience, the airborne SNDCF DTE does in fact know a-priori the actual end-to-end (i.e. between BISs) that will be used. Mr. Herber reluctantly accepted the explanation. The WG finally accepted the proposal to mandate the use of Fast Select when the subnetwork supports its use. Mr. Roy agreed to incorporate the required changes to the SARPs text in Flimsy #12.

11.2.3 Mr. Cossa presented WP/269 ("Action 7/15 - Review of CIDIN SNDCF Requirements in ATNP Internet SARPs"). The paper concluded that the current CIDIN SNDCF provisions defined in the draft Sub Volume 5 SARPs were adequate and consequently did not propose any change proposals or defect reports. The WG noted the conclusions and agreed to provide a response to WG1 from where the back-ground to Action 7/15 originated.

## **12. Agenda Item 7 - Development of Sub-Volume V of the CNS/ATM-1 Guidance Material**

12.1 Mr. Whyman presented WP/260, ("Proposed Guidance Material for Congestion Avoidance in the ATN Internet"). In his presentation Mr. Whyman pointed out that the material contained in this paper was essentially companion material to the papers on congestion management that had been discussed under Agenda Item 5 earlier in the meeting. He specifically pointed out one recommendation in WP/260 that ATN complaint End Systems do not make use of the transport back-off algorithms typically found in COTS implementations. There were no comments or questions raised. It was concluded that the material in WP/260 be integrated into the next version of the Sub Volume 5 guidance material (i.e. Version 1.2).

12.2 Mr. Whyman presented WP/274, ("Proposed Guidance Material for Section Four of the Internet SARPs Guidance Material (Part 2 - Network Layer)"). Mr. Whyman stated that this paper had been originally been intended for submission to the Brisbane WG2 meeting as a companion to WP/234 (guidance material for the Transport Layer). No comments or questions were raised. It was agreed that the material be integrated into the next draft of the guidance material i.e. Version 1.2.

12.3 Mr. Sharma presented WP/265 which was a copy of an e-mail he had received from the guidance material editor (Mr. Pellegrino) who had been unable to attend this meeting. Mr. Pellegrino had reported that he had been unable to complete his action to produce the next consolidated draft of guidance material due to the fact that he had not received any input. He further reported that he had made arrangements for the guidance material drafting group meeting that he would be hosting in Rio in the period 20<sup>th</sup> - 24<sup>th</sup> May as had been tentatively agreed at the Brisbane WG2 meeting. Mr. Sharma asked which of the WG2 participants would be in a position to support the drafting group. Whilst the US, EUROCONTROL, France, SITA and the UK indicated their positive intentions to support guidance material drafting none of the participants were in a position to support the drafting group in the scheduled period, this primarily being due to the fact that validation activities were considered to be a higher priority activity. Consequently it was agreed that the drafting group meeting be postponed and that the precise dates be agreed under Agenda Item 11. Mr.

Sharma agreed to relay this decision to Mr. Pellegrino whilst thanking him for efforts he had made with respect to arrangements for hosting the drafting group.

12.4 All attendees were actioned to review the guidance material that was available to date which was being consolidated by Ms. Cosgrove into Version 1.2.

**ACTION 8/8 - ALL - TO REVIEW VERSION 1.2 GUIDANCE MATERIAL & PROVIDE COMMENTS TO NEXT WG2 MEETING.**

12.5 Mr. Sharma noted that, given the relative immaturity of the guidance material, it was now impossible that the WG would be in a position to review a final draft at the Munich meeting in order to submit it to ICAO by mid July for presentation to ATNP/2 as proposed “green pages”. He further pointed out that the guidance in WGs 1 & 3 for their respective Sub Volumes was also relatively immature and that based on discussions that he had had with the Rapporteurs of WGs 1 & 3 that it looked likely that the only avenue open to the WGs on this subject was that it be proposed to ICAO that it be published as a “Manual”. This, it was noted, would allow the WGs up to the October meetings to finalise the material.

12.6 Mr. Whyman briefly presented WP/272 (“Route Aggregation - Proposed Guidance Material”) as an information paper. He pointed out that the initial part of the material introduced the subject of Route Aggregation in an informal style and requested feedback from the WG if it was considered to adopt such an approach for guidance material or whether guidance material should be of a strictly technical nature. Mr. Adnams stated that he would progress the development of the material based on comments received from the WG & within Eurocontrol.

### **13. Agenda Item 9 - CNS/ATM-2 Internet Requirements**

13.1 No WPs were presented under this Agenda Item. However, it was agreed that the WG “brainstorm” some ideas that may be required for CNS/ATM-2 from an internet perspective and that this list of ideas be incorporated into the WP that Mr. Cossa is developing in response to Action 4/1 agreed in March last year. The following areas were agreed by the WG to be candidate functionality for incorporation in CNS/ATM-2:

- Security;
- QoS Management in a non-deterministic network, maintenance of real QoS;
- Systems Management;
- incorporation of new subnetwork technology, e.g. Asynchronous Transfer Mode (ATM), Frame Relay etc.;
- Multi-Cast/Broadcast;
- incorporation of the HF subnetwork;
- Data/Voice integration;
- Directory requirements though it was recognised that the majority of such functionality was an application issue;
- airborne Routers as Transit Routing Domains (i.e. air-air, ground-air-ground communications);

13.2 Mr. Cossa was also requested to consider the WPs that EUROCONTROL had submitted to the Toulouse WG1 meeting which addressed Security, Systems Management and QoS for CNS/ATM-2. Mr. Cossa agreed to develop his WP as a draft ATNP/2 Working Paper. It was, however, recognised that the WP may be eventually integrated with material from WGs 1 & 3 into a single ATNP/2 WP.

### **14. Review of Flimsy #13 (“User Requirements for ATSC Class Routing & Number of ATSC classes required for CNS/ATM-1”).**

14.1 Mr. Sharma presented Flimsy #13 which he had developed as a result of the sub-group that had been established at the Joint Session (Agenda Item 6) being unable to develop a solution to the problem since it was unclear as to what the “User Requirement” actually was. Flimsy #13 therefore documented a perceived User Requirement and was intended to be presented to WG3 for endorsement and/or modification of the perceived requirement. In particular Flimsy #13 identified 4 questions to which it sought a “yes/no”

answer from WG3. The WG reviewed the Flimsy, agreed a number of changes and forwarded the final version to WG3. The WG3 responses are reported under para. 22 of this report.

**15. Review of Flimsy #6 (“IDRP Activation during a/g Route Initiation”)**

15.1 Flimsy #6 (Appendix G), related to ensure minimal exchange of IDRP OPEN BIS PDUs during routing initiation was presented by Mr. Tamelet which he had been actioned to develop during the review of WP/252 (Version 4.1 of the draft SARPs). The WG agreed with the problem summary, proposed resolution and detailed change proposals with one minor editorial change. It was consequently agreed that the final version of the Flimsy #6 changes be incorporated into the next draft of the SARPs.

**16. Review of Flimsy #8 ( Proposed Modifications to Table 8-5 of the Draft ATN Internet SARPs)**

16.1 Mr. Whyman presented Flimsy #8 (Appendix I) the development of which had been actioned during the WGs review of the draft SARPs (WP/252). The proposed changes were accepted without comment and it was agreed they be incorporated into the next draft of the SARPs.

**17. Review of Flimsy #9 (Proposed Changes to 8.3.1.4.2 of Version 4.1 of the draft ATN Internet SARPs)**

17.1 Mr. Whyman presented Flimsy #9 (Appendix J) the development of which had been actioned during the WGs review of the draft SARPs (WP/252). The proposed changes were agreed with amendment. Since Flimsy #2 (i.e. DR 84/CP 69) would also propose changes to the same sections of the SARPs as Flimsy #9 it was agreed to incorporate the Flimsy#2 changes into the next version of Flimsy #9. It was agreed that the final version of Flimsy #9 be incorporated into the next draft of the SARPs.

**18. Review of Flimsy #11 (“CCB Review of Proposed Defects indicated in WP/271”)**

18.1 Mr. Cossa presented Flimsy #11 which had been developed by the members of the CCB that were present at the WG. The Flimsy documented the results of the CCBs consideration of WP/271 (Interim Report of the “ATNSI” Drafting Group). The WG endorsed the CCB recommendations which required a small number of editorial changes to the draft SARPs which, it was agreed, would be incorporated into the next version.

**19. Review of Flimsy #5 (“Proposed Changes to the draft ATN Internet SARPs Congestion Avoidance Algorithm”)**

19.1 Mr. Whyman presented Flimsy #5 which contained a consolidated Change Proposal based on the inputs in WPs 254 and 267. Mr. Whyman confirmed that the Flimsy had been agreed by Mr. Rose who had left the meeting earlier. The WG reviewed the proposed changes in Flimsy #5 and agreed a number of detailed changes. It was agreed that the final version of Flimsy #5 incorporating the WG amendments be incorporated into the next version of SARPs.

**20. Review of Flimsy #7 (“Changes to TP4 Timer Specification”)**

20.1 Mr. Cossa presented Flimsy #7 the development of which was actioned during the WGs review of Version 4.1 of the draft SARPs (WP/252). The proposed changes were agreed. It was noted that this revised the WG2 decision in Brisbane with respect to the resolution of the TP4 acknowledgment timer where it had been agreed that it be expressed in seconds rather than milli-seconds (the latter being an ISO requirement).



## **21. Agenda Item 8 - Development of the CNS/ATM-1 Internet SARPs Validation Report**

21.1 Mr. Briand presented WP/257 ("CNS/ATM-1 Package Internet SARPs Validation Objectives") which included a number of revisions to the ATN Validation Objectives (AVOs) that had been presented to and adopted by the Brisbane WG2 meeting. The WG reaffirmed its Brisbane decision that WP/257 become a WG2 "standing document". No comments or questions were raised with respect to the changes proposed in the paper. The paper further proposed that the WG endorses the fact that the document be used as the basis of the WG2 validation process and validation reporting procedure. The proposal was adopted. It was noted that the majority of the AVOs listed in WP/257 were referenced against entries in the ATN Requirements Database and thereby provided assurance in the total coverage of the draft SARPs. The meeting recalled that the ATN RDB would be aligned with Version 6.0 of the draft SARPs expected to be baselined at the next WG2 meeting in Munich and thereafter submitted to ICAO for ATNP/2 processing. It was agreed that Validation results submitted to the WG by participating States and Organisations should reference both the AVOs and ATNRDB entries. Mr. Sharma undertook an action to request the Validation Report editor, Mr. Whitfield (who had been unable to attend this meeting), to start to gather detailed input from participating States/Organisations on their plans to contribute to the WG2 Validation Report.

**ACTION 8/9 - MR. SHARMA - REQUEST MR. WHITFIELD TO GATHER DETAILED INPUT FROM PARTICIPATING STATES/ORGANISATIONS ON THEIR VALIDATION PLANS.**

21.2 Mr. Cossa reported that the FAA should be in a position to provide validation results referenced against the agreed AVOs & ATN RDB. Mr. Crenais reported that he would be reporting against the ATN RDB and AVOs based on validation work with the EURATN system, ADS Europe directly as STNA and through the co-operative validation work with EUROCONTROL. Mr. Hennig reported that he would present validation results based on the NUT trial at the Munich meeting. Mr. Briand reported that EUROCONTROL would be reporting results of both their internal and European co-operative validation activities to the WG. Mr. Graf reported that he believed that the DFS would also be presenting validation results based on the "DART" environment and via Eurocontrol as a result of the DFS contribution to the co-operative European initiative. Ms. Thulin reported that SITA expected to provide validation results based on their VDL validation work and would try and ensure that they could reference the agreed AVOs and ATN RDB. Mr. Sharma reported that NATS would also be reporting validation results based on the ADS Europe project. Mr. Briand stated that the ATNRDB would be available in late July and that in addition it was necessary to develop a guide to validators as to how to feed the ATN RDB with their validation results, i.e. the ATN RDB would essentially be used as a PICS. It was agreed that this was the best way forward since it would allow WG2 to conduct a fair AVO coverage assessment once all inputs against the database had been received. It was agreed that the June WG2 meeting would conduct a detailed assessment of the AVOs in order to assess the coverage planned and identify any visible gaps in order to encourage remedial action.

21.3 Mr. Cossa presented WP/263, ("COTP Analysis in the ATN/AMSS Computer Model"). The paper presented the results of on-going simulation work in the area of optimal TP4 timer settings valid for all air/ground subnetworks envisaged for implementation within the ATN infrastructure. The paper concluded that the only way realistic way in which optimal settings of TP4 timers could be achieved for each subnetwork would be based on a dynamic algorithm that was based on measured round trip delays. It was agreed that such a solution would be candidate for implementation in CNS/ATM-2.

21.4 Mr. Whyman presented WP/258 ("Results of IDRP Large Scale Simulations") on behalf of Mr. Kircher who was unable to attend. The paper concluded, based on the simulation work performed, that IDRP in a large scale environment works. Mr. Whyman stated the next stage of the work may include integration of the IDRP model with a CLNP model with the ultimate objective of developing a capacity planning tool to support network design for operational implementations. Mr. Whyman confirmed that the results were applicable to environments where IDRP was operating over air/ground links in response to a question from Mr. Hennig. However, he did state that the simulations had not investigated the amount of IDRP data that would be exchanged over air/ground links in a typical operating scenario. Mr. Sharma stated that the UK trials were

considering the implementation of an airborne IDRPs in an BA aircraft and hoped to be able to provide validation results to ATNP/2 in this area.

21.5 WP/268 ("AMCP/3-WP/53 - Report on Agenda Item 4") was presented by Mr. Cossa in response to action 6/8. The meeting noted the approach that the AMSS had adopted in validating the AMSS SARP's and agreed that the report should be reviewed in detail to assess whether any of the techniques could be applicable to the Internet SARP's validation.

## **22. WG3 Response to WG2 Flimsy #13**

22.1 Mr. Jones (Rapporteur WG3) and Mr. VanTrees joined the meeting to present the results of WG3's deliberations of WG2 Flimsy#13.

22.2 With respect to point (a) of Flimsy #13 Mr. Jones reported that WG3 considered it unacceptable for ATSC data to be discarded. With respect to point (b) Mr. Jones confirmed that WG3 did not require an indication from the internet of the lowest class route traversed by any NPDU since the air/ground applications use time stamps and could therefore make use of this information. With respect to point (c) Mr. Jones confirmed that WG3 agreed to restrict the number of ATSC classes for CNS/ATM-1 to eight with classes A and B being "reserved". With respect to point (d) Mr. Jones reported that WG3 agreed to remove the subnetwork preference requirement for ATSC data. Mr. Jones concluded that the WG3 response would be documented in WG3 Flimsy 6-8 which would be presented to the meeting by Mr. VanTrees. It was concluded that the WG3 responses essentially supported the proposed change to the draft SARP's in WP/266.

22.3 Whilst in the meeting Mr. Jones took the opportunity to request feedback from WG2 on the need to schedule an editorial meeting to take place following the conclusion of the Munich WG meetings the objective of which would be to conduct one final review of all CNS/ATM-1 SARP's material to ensure consistency across all Sub Volumes. Mr. Crenais supported the proposal in principle but was unsure whether he could commit resource to support such a meeting. Mr. Graf confirmed that, from an Organisational perspective, he could make the necessary arrangements.

## **23. Review of Flimsy 10/12 (combined)**

23.1 Mr. Roy presented Flimsy 10/12 which had been developed as a result of the discussions documented in para. 11.2 on WP/270. Due to the considerable amount of changes that were being proposed and the fact that the material was on the table for the first time on the last day of the meeting it was agreed that the WG was not in a position to adopt the proposals contained therein. Mr. Sharma undertook to issue the Flimsy to the technical mailing list in order to solicit comments on the proposed changes. The meeting did, however, review the material and agreed a number of changes that would be incorporated into the final version of the Flimsy that would be submitted to the mailing list.

**ACTION - 8/10 - MR. SHARMA - ISSUE FLIMSY 10/12 TO ATN-TECHNICAL MAILING LIST REQUESTING FEEDBACK ON PROPOSED CHANGES.**

## **24. WG3 Flimsy# 6-8**

24.1 Mr. VanTrees joined the meeting to present the latest version of WG3 F# 6-8 (WG2\WP282). The WG's review of WP/282 resulted in the development of Flimsies 15 & 16 (Appendices N & O) which it was agreed would be incorporated into the next version of the SARP's.

## **25. Agenda Item 10 - WG2 Papers for ATNP/2**

25.1 The meeting agreed that drafts of the following WPs be developed for the Munich meeting:

- Progress Report of WG2 since ATNP/1;

**ACTION 8/11 - MR.SHARMA - DEVELOP DRAFT ATNP/2 WP TITLED  
"PROGRESS REPORT OF WG2 SINCE ATNP/1"**

- Introduction to the Sub Volume 5 SARPs;  
**ACTION 8/12 - MS COSGROVE - - DEVELOP DRAFT ATNP/2 WP  
TITLED "INTRODUCTION TO SUB VOLUME 5 SARPS"**
- Introduction to the Sub Volume 5 Guidance Material;  
**ACTION 8/13 - MS COSGROVE - - DEVELOP DRAFT ATNP/2 WP  
TITLED "INTRODUCTION TO SUB VOLUME 5 SARPS"**
- Assumed CNS/ATM-2 Internet Requirements. It was noted that this WP was being developed by Mr. Cossa in response to action 4\1;
- Proposed Amendments to Version 6.0;  
**ACTION 8/14 - MR.SHARMA - DEVELOP DRAFT ATNP/2 WP  
INTRODUCING PROPOSED AMENDMENTS TO SUB-VOLUME 5**

Proposals for the on-going change control and maintenance of the Sub Volume 5 SARPs post ATNP/2;

**ACTION 8/15 - MR.HOF - DEVELOP DRAFT ATNP/2 PAPER  
PROPOSING MECHANISMS & PROCEDURES FOR ON-GOING  
MAINTENANCE OF SARPS POST ATNP/2**

Proposal for the approach to develop Package 2 SARPs.

**ACTION 8/16 - MR.HOF - DEVELOP DRAFT ATNP/2 PAPER  
PROPOSING APPROACH FOR THE DEVELOPMENT OF CNS/ATM-2  
INTERNET SARPS**

## **26. Agenda Item 11 - Future Work Plan up to ATNP/2**

26.1 Mr. Graff presented WP/279 ("Information on forthcoming ATNP WG Meetings in Munich"). which confirmed the following schedule:

- WG1 - 17th - 20th June
- JWG - 21st June
- WG2 - 24th - 28th June
- WG3 - 24 - 28th June

26.2 Mr. Sharma confirmed that the October WG2 meeting was currently scheduled to take place in the period 7th - 16th October in the USA and that ATNP/2 was currently scheduled to take place 4th - 15th November.

26.3 With respect to the further development of the SARPs it was agreed that Flimsies 5, 6, 7, 8, 9, 11, 15 & 16 be incorporated into the next version, i.e. Version 5.0 and that this version be made available on 15th May.

26.4 As had been agreed in Brisbane that no further technical requirements be introduced after this meeting it was confirmed that all future proposed changes to the SARPs will be "logged".

26.5 It was agreed that the "WG2 Edit Committee" meeting will take place in the period 3rd - 7th June in Toulouse, kindly hosted by the STNA and that the resulting Version 5.1 be available on 7th June as an input of the final draft to the Munich WG2 meeting. The UK, France, Germany, EUROCONTROL and US offered to support the Edit Committee.

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26.6 Mr. Graff confirmed that he would be available as a “back-up” editor for the post Munich WG editorial committee that had been earlier proposed by Mr. Jones in the event that STNA were unable to support the meeting.

26.7 With respect to the guidance material it was noted that Ms. Cosgrove has consolidated the Brisbane draft (Version 1.1) with the additional WPs on guidance that had been presented at this meeting and that all participants had been actioned to review the material contained therein (action 8/8). It was noted that the Rapporteurs of the WGs would be submitting a proposal to the Secretary that ICAO accept the guidance material for publication as a Manual rather than proposed green pages as had been originally envisaged. Due to unavailability of the drafting group meeting in Rio had to be postponed. The meeting agreed on revised dates for a drafting group meeting as 5th - 9th August at a venue to be determined.

26.8 With respect to the WG2 validation report it was agreed that Mr. Sharma contact the report editor (Mr. Whitfield) to confirm his further involvement in the work and to ensure the draft report is further developed for the Munich meeting (action 8/9). Mr. Hof hoped that the overall validation programme would ensure that the whole spectrum of validation objectives is adequately covered.

### **27. Agenda Item 12 - Any Other Business**

27.1 No other business was raised.

### **28. Agenda Item 13 - Conclusions & Action List**

28.1 Mr. Sharma apologised for not having an up to date action list available and promised to issue one as soon as it was complete.

28.2 The meeting concluded that its objectives had been achieved. Mr. Sharma thanked EUROCONTROL for hosting the meeting and the excellent administrative support that had been provided throughout. The meeting was then closed.

*ICAO ATNP WG2 (ATN Internet WG) - Report of the Eighth Meeting*

**29. Appendix A - WG2 ATTENDANCE LIST**

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30. Appendix B - List of Working Papers

No.	Title	Presented By	Agenda Item
234	Proposed Guidance material for Section Four of the ATN Internet SARPs Guidance Material (Part 1 - Transport Layer)	A Whyman	7
251	Proposed Objectives, Schedule & Planning	A Sharma	1,2
252	CNS/ATM-1 SARPS & Guidance Material - Sub-Volume V: Internet Communications Service (Version 4.1, 15/4/96)	JM Crenais	5
253	Status of WG-2 VRCIs	CM Ricci	5.1
254	Comments on the Congestion Avoidance Algorithm proposed for the ATN	A Herber	5.2
255	Simulation Exercises on Congestion Management Techniques	A Herber	5.2
256	Fast Select	S Tamelet	5.2
257	CNS/ATM-1 Package Internet SARPs Validation Objectives	JP Briand	8
258	Results of IDRP Large Scale Simulations	H Hof	8
259	Sub Volume 1, Version 0.4 Introduction and System level Requirements	S Cosgrove	3
260	Proposed Guidance Material for Congestion Avoidance in the ATN Internet	A Whyman	7
261	ATNP Change Control Board (CCB) Procedures Document	R Cossa	5.1
262	WG 2 Configuration Control Board Activity in Support of CNS-ATM-1 Internet SARPS	R Cossa	5.1
263	COTP Timers Analysis in the ATN/AMSS Computer Model	R Cossa	8
264	The Impact of Sub Volume 1 on Sub-Volumes 2 through 5 SARPs and Guidance Material	S Cosgrove	3
265	Guidance Material Actions for Brussels Meeting - Arrangements	A Sharma	7
266	The Use of ATSC class in ATN Internet	H Hof	6, 5.2
267	Report on the Further investigation of Network Layer Congestion Management in the ATN Internet	H Hof	5.2
268	AMCP/3 (Validation)	R Cossa	8
269	Action 7/15 - review of CIDIN SND CF Requirements in ATNP Internet SARPS	R Cossa	5.2
270	CP for ATN SND CF to accommodate VDL	A Roy	5.2
271	ATNP WG2/8 Brussels 22-26 April 1996 Sub Drafting Group Interim Draft Report		5.2
272	Route Aggregation Proposed Guidance Material (Information Paper)	M Adnams	7
273	Use Of ATSC Traffic Types	R Jones	6
274	Proposed Guidance Material for Section Four of the ATN Internet SARPs Guidance Material (Part 2 - Network Layer)	M Adnams	7
275	Proposed WG3 Inputs on Validation for JWG WP to ATNP/2	R Jones	6, 8
276	WG3 Matters of Interest to WG2 (WG 3 Flimsy # 6-6)	WG 3	6
277	Matters of Style (WG 3 Flimsy # 6-5)	WG 3	6
278	Guidance Material for Sub-Volume V Version 1.1 of the Internet CNS/ATM-1 Package	A Sharma	7
279	Information of the Forthcoming ATNP Working Group Meetings in Munich	K Platz	11
280	VDL SARPS		5.2
281	Guidance Material for Sub-Volume V Version 1.2 of the Internet CNS/ATM-1 Package	A Sharma	7
282	WG2/WG3 Standardisation of Traffic Type and Class (WG3 Flimsy 6-8)	S Van Trees	3



**31. Appendix C - Meeting Agenda**

<b>0. Meeting Organisational Issues</b>	
<b>1. Approval of Agenda and Objectives</b>	<b>251</b>
<b>2. Approval of the Brisbane WG2 Meeting Report - Review of Action List</b>	<b>251</b>
<b>3. Issues Arising out of other ATNP WGs &amp; other Related Bodies</b>	<b>259, 264</b>
<b>4. CNS/ATM-1 Registration Authority</b>	
<b>5. Review of Sub-Volume V of the CNS/ATM-1 SARPs (Version 4.1)</b>	<b>252,</b>
<b>5.1 Report of the CCB/Review of CCB Recommendations</b>	<b>262, 253, 261</b>
<b>5.2 Review of Proposed Changes</b>	<b>254, 255, 256, 266, 267, 269, 270, 271</b>
<b>5.3 General</b>	
<b>6. Joint Session with WG3 on Validation &amp; Other Common Subjects</b>	<b>266, 273, 275, 276, 277</b>
<b>7. Development of Sub-Volume V of the CNS/ATM-1 Guidance Material</b>	<b>260, 265, 272, 274, 278</b>
<b>8. Development of the CNS/ATM-1 Internet SARPs Validation Report</b>	<b>257, 258, 263, 268, 275</b>
<b>9. CNS/ATM-2 Internet Requirements</b>	
<b>10. WG2 Papers for ATNP/2</b>	<b>259</b>
<b>11. Future Work Plan up to ATNP/2 - arrangements for next WG2 meeting (Munich) - arrangements for October WG2 meeting (USA) - dates for ATNP/2</b>	<b>279</b>
<b>12. Any Other Business - translation of WG2 material into WordPerfect 5.1</b>	
<b>13. Conclusions and Action List</b>	

**32. Appendix D - Flimsy # 3 - Change Proposal for Sub-Volume 5**

The following changes to Sub-Volume 5 are proposed as a result of WG2 WP 264 “The Impact of Sub-Volume 1 on Sub-Volumes 2 through 5”. This action enhances the common material included in Sub-Volume 1 for coordination and stability throughout all of the Sub-Volumes.

I. The following sections have been extracted from Sub-Volume 5 and included in Sub-Volume 1:

- A. Glossary pages I - IX
- B. Acronyms and Abbreviations pages X - XVIII
- C. List of References pages XIX - XX

II. The following tables have been extracted from Sub-Volume 5 Chapter 2:

- A. Table 2-3 “Relationship of Communication priorities in the ATN”
- B. Table 2-2 “ATSC Transit Delay semantics”

All references to these tables within the text of Sub-Volume 5 have been modified to reflect the change. These change pages have been attached to this flimsy.

III. Sub-Volumes 1 through 4 have aligned the definition of “ATSC traffic types” and “ATSC traffic classes” to those used in Sub-Volume 5.

33. Appendix E - Flimsy #4 - Proposed changes to Sub-Volume 1

**Proposed Changes to Sub-Volume 1**

The following are the comments/concerns from WG2 after reviewing WG2 WP 259 (“CNS/ATM-1 Package Sub-Volume 1”) and WG2 WP 264 (“The Impact of Sub-Volume 1 on Sub-Volumes 2 through 5”).

- I. WG2 accepts all actions detailed in WP 264 and has assigned members of WG2 to complete these actions.
- II. Proposed changes to Sub-Volume 1:
  - A. **para 1.1.1 e)** proposed to read “Air Traffic Services”(ACCEPTED)
  - B. **para 1.1.1 g)** proposed to read “Upper Layer\_”(CHANGED Upper Layers)
  - C. **figure 1.1-2** 2<sup>nd</sup> level heading proposed to read “CNS/ATM-1 application services” (DENIED)
  - D. **para 1.2.1.1** provide the following note to explain use of “The ATN” vice CNS/ATM-1. The note should read: “*Note. This requirement refers to “The ATN” vice “CNS/ATM-1” to impose the requirement on the ATN infrastructure, vice the SARPs.*”(DENIED)
  - E. **para 1.2.1.1** proposed to read “The ATN shall be based on International Organization for Standardization (ISO) Open Systems Interconnection (OSI).”(changed to “use” not “be based on”)
  - F. **para 1.2.1.5** proposed to read “CNS/ATM-1 shall employ ATSC traffic types in accordance with the criteria in Table 1.2-1.” (ACCEPTED and now refer to traffic classes NOT traffic type)
  - G. **table 1.2-1** 2<sup>nd</sup> column proposed to read “ATSC Traffic Types” (ACCEPTED)
  - H. **table 1.2-1** should include a column of values for the transit delay at the mean value.
  - I. **para 1.2.1.8** proposed to read “CNS/ATM-1 shall provide means to unambiguously address all ICAO and IATA End and Intermediate Systems.”(“all ATN End and Intermediate Systems ACCEPTED)
  - J. **para 1.2.1.10** proposed to be placed immediately following para 1.2.1.1 (ACCEPTED)
  - K. **para 1.2.1.11** proposed to read “CNS/ATM-1 shall support fixed and mobile platforms.”(DENIED)
  - L. **para 1.2.1.12** This system level requirement is too generic (possible reference to ISO 8208) (
  - M. **para 1.2.1.13** proposed to read “CNS/ATM-1 shall enable an aircraft Intermediate System to be connected to a ground Intermediate System via simultaneous multiple concurrent mobile subnetworks.” (DENIED use “Concurrent”)
  - N. **paras 1.2.1.16 - 1.2.1.21** all are proposed to read “CNS/ATM-1 shall be capable of establishing, maintaining, releasing, forwarding and aborting...” (ACCEPTED)
  - O. **para 1.2.1.22** proposed to read “CNS/ATM-1 shall enable communication priorities to ensure that safety related communications are given preference over non-safety related communications.” (DENIED use “safety and regularity of flight”)
  - P. **para 1.2.1.22** propose to move after 1.2.1.5 (related to traffic types)
- III. New derived requirements proposed by WG2”
  - A. extract priority tables from Sub-Volume 5 for inclusion in Sub-Volume 1.
  - B. “CNS/ATM-1 shall employ policy based routing” (ACCEPTED)
  - C. “CNS/ATM-1 shall enable the migration to future communication services through new subnetwork types, protocol types, services and a scaleable architecture”(DENIED)

**34. Appendix F - Flimsy # 5 - Proposed Changes to the ATN Internet SARPS  
Congestion Avoidance Algorithm (Rev B)**

## Introduction

WP 254 and WP267 both provided proposed changes to the draft Internet SARPs Congestion Avoidance Algorithm, derived from the analysis contained in WP254 and used in preparing the validation exercises for which WP267 reported on. This flimsy provides a consolidation change proposal for consideration by WG2.

### Proposed Changes to Chapter 5

#### 1. Deletion of 5.2.5.2.3.2

It is proposed to delete section 5.2.5.2.3.2.” Congestion Notification”, as these function are fully specified in 6.2.4.

#### 2. Change to 5.2.6 “Transport Layer Congestion Avoidance”

*Note 1.— The congestion avoidance mechanisms in the transport layer make use of the notification by the network layer of Congestion Experience flags in received NPDUs. This mechanism allows transport entities to reduce the window, i.e. the number of DT TPDUs allowed to be sent without acknowledgement, when the proportion of NPDUs indicating congestion reaches a certain threshold.*

*Note 2. - This congestion information consists of the total length of the sequence of NPDUs forming the associated NSDU, and the number of NPDUs of that sequence that had their congestion experienced flag set upon reception.*

*Note 23.— Transport Congestion Avoidance measures are applicable to connection oriented transport service only.*

*Note 34.— The algorithm defined in this section is applied for each transport connection individually.*

The transport entity shall implement the congestion avoidance algorithm defined in this section.

#### 5.2.6.1. Advertised window

A receiving transport entity ~~that is receiving~~ TPDUs shall provide the sending transport entity ~~that is sending the~~ TPDUs with the lower window edge and the size of the *advertised window* ( $W$ ) by using the explicit flow control mechanisms specified in ISO/IEC 8073.

*Note.— The **advertised window** is the window advertised by the receiver of the data to the sender of the data. It indicates the number of DT TPDUs that the receiver is willing to accept.*

##### 5.2.6.1.1. Initialisation of the advertised window

The initial value of the advertised window  $W_0$  that will be advertised to the sending transport entity shall have a locally configurable value upper bound. This initial window value shall be sent to the sending transport entity in the first CDT field transmitted.

#### 5.2.6.2. Receiving Transport Entity Congestion Avoidance

Congestion avoidance shall be performed within repeated update phases. Each update phase shall terminate with the possible advertisement of a new window size to the sending transport entity.

##### 5.2.6.2.1. Initialisation of the advertised window

The initial value of the advertised window  $W_0$  that will be advertised to the sending transport entity shall have a locally configurable upper bound. This initial window shall be sent to the sending transport entity in the first CDT field transmitted.

##### 5.2.6.2.1. Start of Update Phase Sampling Period

An update phase of the advertised window shall start after the receiving transport entity has advertised a new value of the window  $W_{new}$  to the sending transport entity.

##### 5.2.6.2.2. Ignoring Congestion Information

After having advertised a new window size, the receiving transport entity shall ignore congestion information coming from the network layer, until it has received  $W$  (i.e. the “old” advertised window size) further DT-TPDUs. It then shall enter the sampling sub-phase.

When the sending transport entity advertises the initial window size  $W_0$ , it shall set  $W$  to 0.

**5.2.6.2.3. Sampling Congestion Information**

The receiving transport entity shall maintain a count  $N$  equal to the total number of NPDUs that convey DT-TPDUs, and a count  $NC$  equal to the number of such NPDUs that had their *congestion experienced* flag set upon reception.

Upon entering the sampling sub-phase, these counts shall be reset to zero.

These counts shall be updated upon receipt of a DT-TPDU using the congestion information supplied by the network layer.

The sampling sub-phase shall end as soon as the transport entity has received  $W_{new}$  DT-TPDUs within the sampling sub-phase. The end of the sampling sub-phase also terminates the update phase.

The receiving transport entity shall maintain a fixed value for the size of the advertised window  $W$  during a sampling period. The sampling period ends after  $2*W$  DT TPDUs have been received by the receiving transport entity.

*Note.— The end of a sampling period determines the beginning of the next sampling period. The size of the advertised window may be modified at the end of a sampling period.*

**5.2.6.2.4. Counting of Received TPDUs in a Sampling Period**

The receiving transport entity shall maintain a count  $N$ , equal to the number of TPDUs received, and a count,  $NC$ , equal to the total number of TPDUs received with an indication that congestion is experienced. All types of TPDUs shall be included in the counts for  $N$  and  $NC$ .

**5.2.6.2.4. Action upon the end of the Update Phase a Sampling Period**

The receiving transport entity shall take the following actions at the end of each update phase sampling period:

1. If the count  $NC$  is less than  $\lambda$  % of the count  $N$ , the receiving transport entity shall increase the size of the advertised window by adding  $\delta$  up to a maximum based on the local buffer management policy. Otherwise, it shall decrease the size of the advertised window by multiplying it by  $\beta$ . If the result of this multiplication has a decimal part, the new window size shall be the truncated to its integer value. The size of the advertised window shall not go to a value smaller than 1.
2. The counts  $N$  and  $NC$  shall be reset to 0.
3. The new window size shall be transmitted to the sending transport entity in accordance with the explicit flow control mechanisms specified in ISO/IEC 8073.

*Note.— This procedure does not explicitly requireIf the window size is reduced by this procedure, the transport entity may have to reduce credit gradually so as to avoid the reduction of the upper window edge, as it is possible to gradually reduce the credit window.*

**5.2.6.3. Recommended algorithm values**

*Recommendation.— The value settings defined in the following table should be implemented and configurable by a System Manager:*

Name	Description	Recommended value/range
$\beta$	Window decrease factor	0.75 to 0.95625
$\delta$	Window increase amount	1
$W_0$	Initial window	1
$\lambda$	Congestion ratio	50 %

**Proposed Changes to Chapter 6**

#### 6.2.4. Congestion Management

*Note.*— The congestion management provisions in the network layer are intended to guarantee the notification to the transport layer of potential risks of congestion via the C/E bit conveyed in QoS Maintenance parameter. The transport layer will take measures to avoid congestion if a high proportion of NPDU's are received with C/E bit set.

##### 6.2.4.1. *Setting of the congestion experienced flag*

The *congestion experienced* flag (CE-flag) in the QoS maintenance parameter in the options part of an NPDU header shall initially be set to zero by the originator of the NPDU.

When a NPDU is being forwarded by an ATN IS, the IS shall examine the depth of the output queue selected for that NPDU. If the depth of the selected output queue exceeds a threshold  $\alpha$  (see table 6-2), the ATN IS shall set the CE-flag congestion experienced flag in the QoS maintenance parameter in the options part of the NPDU header.

Once the CE-flag congestion experienced flag in the QoS maintenance parameter in the options part of an NPDU header is set, it shall not be reset by any ATN IS traversed by the NPDU further along to the path towards the destination.

##### 6.2.4.2. *Forwarding congestion information to the receiving NS-User destination transport entity*

For each sequence of NPDU's that together form an NSDU, the destination network entity shall keep two counters:

1. the first one, *n-total*, shall reflect the length of that sequence.
2. the second one, *n-CE*, shall reflect the number of those NPDU's of this sequence, that had the *CE-flag* set on reception by the destination network entity.

*Note.*— *Each NSDU is forwarded through the network as a sequence consisting of one or more NPDU's.*

When the destination network entity passes an NSDU to the receiving NS-User, it shall convey the associated counters *n-total* and *n-CE* to the NS-User.

*Note.*— *The way how the congestion information associated with an NSDU is conveyed to the NS-User is a local matter.*

When a destination network entity receives an NPDU of which the *congestion experienced* flag is set in the QoS maintenance parameter in the options part of the header of the NPDU, it shall convey the congestion experienced information to the destination transport entity by local means.

##### 6.2.4.3. *Required algorithm values*

The value settings defined in the following table shall be implemented:

Name	Description	Required value range
$\alpha$	Output queue threshold	1 packet $\geq 0\%$ and $\leq 10\%$

Table 6-2 Required Value for  $\alpha$

### 35. Appendix G - Flimsy # 6 - IDRP Activation During a/g Route Initiation

#### Problem Summary

Draft SARPs section 3.5.2.9, first and second paragraphs require that after having created the adjacentBIS MO related to the remote ATN Router, an IDRP activate action be invoked to start the BIS-BIS connection according to ISO 10747. This requirement applies to the IS\_SME on both the airborne and air/ground routers (i.e. the router in the responder role as well as the one in the initiator role).

According to ISO 10747 clause 7.6.1.1.b) (2 pages extracted from the ISO standard are attached to the flimsy), the invocation of the activate action on both sides results in the generation of an OPEN BISPDU by both routers. This means that at least 4 OPEN BISPDU's will always be exchanged in order to establish the BIS-BIS connection on the air-ground link.

This is in contradiction with the desired behavior explained in 3.5.2.9 note 1 (i.e. to minimize the route initiation exchange).

#### Problem Resolution

The second paragraph in 3.5.2.9 attempted to reach the objective of note 1 through the proper setting of the ListenForOpen MO attribute. But the invocation of the activate action on both sides prevents the achievement of this objective.

It is therefore proposed that route initiation exchange be minimized by the following way:

- The activate action shall only be invoked by the IS\_SME of the router being in the responder role in the establishment of the subnetwork connection.
- No activate action must be invoked by the IS\_SME of the router being in the initiator role in the establishment of the subnetwork connection. But the ListenForOpen attribute shall be set to true so that it can accept the OPEN BISPDU from the other BIS.

#### Proposed Change to Draft SARPs V4.1:

*See next page*



### 3.5.2.9 Establishment of a BIS-BIS Connection

The IS-SME shall append the NET received on the ISH PDU to the **externalBISNeighbor** attribute of the BIS's **idrpConfig** Managed Object, if not already present, and create an **adjacentBIS** Managed Object for the remote ATN Router identified by this NET, if one does not already exist. ~~An IDRPs activate action shall then be invoked to start the BIS-BIS connection according to ISO/IEC 10747, if such a BIS-BIS connection does not already exist.~~

If the ISH PDU was received from a subnetwork connection which was established with the local ATN Router in the responder role, then an IDRPs activate action shall be invoked to start the BIS-BIS connection according to ISO/IEC 10747, if such a BIS-BIS connection does not already exist. ~~the BIS-BIS connection shall be established with the **ListenForOpen** MO attribute set to false. Otherwise, the **ListenForOpen** MO attribute shall be set to true.~~

If the ISH PDU was received from a subnetwork connection which was established with the local ATN Router in the initiator role, then no IDRPs activate action shall be invoked, but the **ListenForOpen** MO attribute shall be set to true if a BIS-BIS connection does not already exist

*Note 1.— This procedure minimises the route initiation exchanges over a bandwidth limited mobile subnetwork. The reversal of initiator and responder roles for the BIS-BIS connection compared with the subnetwork connection ensures the fastest route initiation procedure.*

If a BIS-BIS connection was already established with the remote ATN Router, then the IS-SME shall cause the IDRPs Routing Decision function to be invoked in order to rebuild the FIB taking into account the additional subnetwork connectivity. This shall include re-update of the security information contained routes received from the remote ATN Router, according to Chapter 8. The IS-SME shall also check to ensure that the procedures for the optional non-use of IDRPs are not concurrently being applied to routing information exchange with an ATN Router with the same NET over a different subnetwork connection. This is an error and shall be reported to Systems Management; a

BIS-BIS connection shall not be established in this case.

**Recommendation.**— *When IDRPs is used to exchange routing information over an Air/Ground subnetwork, the value of the Holding Time field in the ISH PDU should be set to 65534, except when a watchdog timer is applied to the subnetwork connection (see 3.5.2.12).*

*Note 2.— The purpose of the above is to effectively suppress the generation of ISH PDUs.*

*Note 3.— Normally, the IDRPs KeepAlive mechanism is sufficient to maintain a check on the “liveness” of the remote ATN Router. However, when watchdog timers are necessary it is also necessary to ensure a “liveness” check on a per subnetwork connection basis. The ISH PDU fulfils this role.*

**3.5.2.13.2 Airborne Router - Connection Responder**

Item	Description	ATN SARPs Reference	CNS/ATM Package-1 Support
respAR-ar	Response to incoming Call Requests	3.5.2.1	giOragSubnet: M
valCR-ar	Validation of incoming Call Request	3.5.2.1	giOragSubnet:O
RespISH-ar	Generation of ISH PDU	3.5.2.5	giOragSubnet: M
ISHinCC-ar	Encoding ISH PDU in Connect Confirm User Data	3.5.2.5	RespISH-ar & fsSubnet: O
negNoIDRP-ar	Transmission of ISH with SEL field set to 0FEh	3.5.2.5	noIDRP-a:M
negIDRP-ar	Transmission of ISH with SEL field set to zero	3.5.2.5	^noIDRP-a:M
autoRoute-ar	Inference of available routes from A/G Router NET	3.5.2.11.2	noIDRP-a:M
initIDRP-ar	IDRP startup procedures - Invoke activate actionListenForOpen set to false	3.5.2.9	^noIDRP-a:M
supISH-ar	Suppression of multiple ISH PDUs	3.5.2.9	^noIDRP-a: O
valNET-ar	Validation of received NET	3.5.2.6	^noIDRP-a: O

giOragSubnet: giSubnet ^ agSubnet

**3.5.2.13.3 Airborne Router - Connection Initiator**

Item	Description	ATN SARPs Reference	CNS/ATM Package-1 Support
polling-ai	Procedures for polling a list of subnet addresses	3.5.2.2.1	pollReq: M
backoff-ai	Backoff Procedure	3.5.2.2.1.1	pollReq: M
connect-ai	Connect on receipt of Join Event	3.5.2.2.2	EventDrvn: M
ValJoin-ai	Validation of Join Event	3.5.2.2.2	EventDrvn: O
SendISH-ai	Generation of ISH PDU	3.5.2.5	EventDrvn ^ pollReq:M
ISHinCR-ai	Encoding of ISH PDU in Connect Request	3.5.2.5	SendISH-ar & fsSubnet: O
negNoIDRP-ai	Transmission of ISH with SEL field set to 0FEh	3.5.2.7	noIDRP-a:M
negIDRP-ai	Transmission of ISH with SEL field set to zero	3.5.2.7	^noIDRP-a:M
autoRoute-ai	Inference of available routes from A/G Router NET	3.5.2.11.2	noIDRP-a:M
initIDRP-ai	IDRP startup procedures - listenForOpen set to true	3.5.2.9	^noIDRP-a:M
supISH-ai	Suppression of multiple ISH PDUs	3.5.2.9	^noIDRP-a: O
valNET-ai	Validation of received NET	3.5.2.6	^noIDRP-a: O

pollReq: aiSubnet & njSubnet

EventDrvn: jSubnet & (aiSubnet ^ agSubnet)

**3.5.2.13.4 Air/Ground Router - Connection Responder**

Item	Description	ATN SARPs Reference	CNS/ATM Package-1 Support
respAR-agr	Response to incoming Call Requests	3.5.2.1	aiOragSubnet: M
valCR-agr	Validation of incoming Call Request	3.5.2.1	aiOragSubnet:O
emgncy-agr	Emergency Procedures	3.5.2.1.1	M
RespISH-agr	Generation of ISH PDU	3.5.2.5	aiOragSubnet: M
ISHinCC-agr	Encoding ISH PDU in Connect Confirm User Data	3.5.2.5	RespISH-agr & fsSubnet: O
negNoIDRP-agr	Receipt of ISH with SEL field set to 0FEh	3.5.2.7	M
negIDRP-agr	Receipt of ISH with SEL field set to zero	3.5.2.7	M
autoRoute-agr	Inference of available routes from Airborne Router NET	3.5.2.11.1	M
initIDRP-agr	IDRP startup procedures - <u>Invoke activate action</u> ListenForOpen set to false	3.5.2.9	M
supISH-agr	Suppression of multiple ISH PDUs	3.5.2.9	O
valNET-agr	Validation of received NET	3.5.2.6	O

aiOragSubnet: aiSubnet ^ agSubnet

**3.5.2.13.5 Air/Ground Router - Connection Initiator**

Item	Description	ATN SARPs Reference	CNS/ATM Package-1 Support
connect-agi	Connect on receipt of Join Event	3.5.2.3	goOragSubnet: M
ValJoin-agi	Validation of Join Event	3.5.2.3	connect-agi: O
SendISH-agi	Generation of ISH PDU	3.5.2.5	connect-agi: M
ISHinCR-agi	Encoding of ISH PDU in Connect Request	3.5.2.5	Send-ISH-agi & fsSubnet: O
negNoIDRP-agi	Receipt of ISH with SEL field set to 0FEh	3.5.2.7	M
negIDRP-agi	Receipt of ISH with SEL field set to zero	3.5.2.7	M
autoRoute-agi	Inference of available routes from Airborne Router NET	3.5.2.11.1	M
initIDRP-agi	IDRP startup procedures - listenForOpen set to true	3.5.2.9	M
supISH-agi	Suppression of multiple ISH PDUs	3.5.2.9	O
valNET-agi	Validation of received NET	3.5.2.6	O



### 36. Appendix H - Flimsy # 7 - Changes to TP4 Timer Specification

Proposed changes agreed by the CCB and presented in ver 4.1 relating to TP4 timer values are changed based upon input from WG2/8 as follows:

#### 5.4 Implementation

Recommendation. - The following timers and variables should be configurable on a TC basis:

- the local retransmission timer (T1),
- the acknowledgment timer ( $A_L$ ),
- the window update timer (W),
- the inactivity timer (I),
- the frozen reference time (L),
- the maximum retransmission number (N),
- the persistence timer (R)

For use in the ATN, the acknowledgment timer ( $A_L$ ) shall be modified according to the following:

Code: identical to ISO 8073 standard parameter

Length: 2 or 3 octets (up to 24 bits);

Value: acknowledgment timer value expressed in milliseconds (per ISO 8073 standard)

Note 1. - This change is in response to the unique requirements of the aeronautical environment which may require longer acknowledgment times.

Note 2. - Initial values of these timers will be dependent upon the subnetwork, traffic type and routing policy requirements expressed in the associated ATN Security label.

Note 3. - In cases where the  $A_L$  value is 2 (less than 65,565 milliseconds), the ATN implementation will behave in compliance with the ISO 8073 standard.

Note 4. - Implementors are advised to permit systems administrators to readily specify such initial values.

**37. Appendix I - Flimsy # 8 - Proposed Modifications to Table 8-5 of the Draft ATN Internet SARPs**

**Problem Statement**

The following problems with table 8-5 of the draft ATN Internet SARPs were found during review by WG2:

1. The heading “Route Merging” should be aligned with the heading of 8.3.1.6.2.
2. Empty entries should be explicitly given as Not Applicable (N/A).
3. Route Merging is not required from Airborne Routers. However, Table 8-5 incorrectly makes it mandatory for Airborne Routers.

**Proposed Resolution**

The following revisions to table 8-5 are proposed:

<b>Class</b>	<b>Name</b>	<b>Aggregation of Routes with Identical NLRI</b>	<b>Policy Based Route Aggregation</b>	<b>Policy Based Route Information Reduction</b>
1.	Static Router	N/A	N/A	N/A
2.	Level 1 Router	N/A	N/A	N/A
3.	Level 2 Router	N/A	N/A	N/A
4.	Ground-Ground Router	M	O	O
5.	Air/Ground-Router (ground based)	M	O	O
6.	Airborne Router with IDRP	N/A	N/A	N/A
7.	Airborne Router without IDRP	N/A	N/A	N/A

**Table 8-5 ATN Routers and Route Aggregation**

**38. Appendix J - Flimsy # 9 - Proposed Changes to 8.3.1.4.2 of the Draft ATN Internet SARPS (V4.1)**



### Problem Statement

In a review of WP252 (Version 4.1 of the draft ATN Internet SARPs)+

1. it was noted that the text of 8.3.1.4.2 included statements not in the form of proper SARPs i.e. the use of “may” rather than a conditional “shall”. This text needs to be rephrased.
2. The second paragraph of 8.3.1.5 was recognised to be difficult to understand and needed to be re-stated.

### Proposed Resolution

#### Proposed Changes to 8.3.1.4.2

It is proposed to amend the text of 8.3.1.4.2, as follows:

When a route is advertised to an adjacent BIS, and according to local policy rules specified by a System Administrator and dependent on the BIS to which the route is being advertised and the route's NLRI, then:

- a) If the route has been originated by an Air/Ground Router according to the procedures for the optional non-use of IDRP (as specified in 3.5.2.11), and the adjacency with the Airborne Router is over an air/ground data link approved for ATSC use, then an ATSC Class Security Tag shall be added to the route identifying the ATSC Class(es) supported by the Adjacency with that Airborne Router.
- b) If the route had been received from an Airborne Router by an Air/Ground Router, over an air/ground data link approved for ATSC use, then an ATSC Class Security Tag shall be added, replacing any that may already be present, identifying the ATSC Class(es) supported by the Adjacency with that Airborne Router.
- c) If the route has been originated locally (i.e. within the same Routing Domain), by a Router other than an Airborne router, and
  - if the route is to be advertised to an adjacent BIS over an adjacency supported by one or more subnetworks approved for ATSC traffic, then
  - an ATSC Class security tag shall may be added to the route identifying the ATSC Class(es) specified by the System Administrator and formulated as part of the local policy rule supported by the Adjacency.

*Note. - In the case of an Airborne Router, the ATSC Class is inserted by the Air/Ground Router (see case (b) above), and this avoids an Airborne Router having to know which air/ground data links are approved for ATSC use.*

- d) if the route has been received from another BIS and
  - the route is to be advertised to an adjacent BIS over an adjacency supported by one or more subnetworks approved for ATSC traffic, and
  - an ATSC Class security tag is present in the route, that is higher than the ATSC Class that the System Administrator has specified as being supported by the Adjacency, then
  - the ATSC class of the route shall may be downgraded, as specified below, to the ATSC Class supported by the Adjacency a lower class, where Class A is the highest and Class H is the lowest.
- e) if the route has been received from another BIS and
  - the route is to be advertised to an adjacent BIS over an adjacency supported by subnetworks that are not approved for ATSC Traffic, then
  - the ATSC Class security tag shall be removed from the route before it is advertised to the adjacent BIS.

- e) if a route will be advertised over an adjacency supporting one or more Air/Ground subnetworks, and none of the Air/Ground subnetworks support ATSC traffic, then an ATSC Security Tag, if present in the route's security path attribute, shall be removed.

Downgrading shall be performed only when the route supports an ATSC Class higher than the highest ATSC Class supported by the local policy. When the ATSC Class is downgraded, the ATSC Class Security Tag Set shall be modified such that all bits indicating support for an ATSC Class higher than

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that supported by the local policy shall be set to zero, and the bit corresponding to the highest ATSC Class supported by local policy shall be set to one. All remaining bits shall be unaffected.

An ATSC Class Security Tag shall not be present in a route's security information, if an Air/Ground Subnetwork Security Tag is also present indicating that the Air/Ground Subnetwork does not support ATSC Traffic.

### Proposed Changes to 8.3.1.5

It is proposed to replace the second paragraph of 8.3.1.5 with:

During the Phase 2 Routing Decision process, when:

- a) ~~two or more routes to the same or overlapping destinations are found in the adj-RIB-ins identified by a RIB\_Att that includes the Security Path Attribute, but which differ in the security information contained in their security path attribute, then all such routes shall be selected and copied to the corresponding loc\_RIB unless their computed preference is less than another such route which is usable by the same or more NPDUs~~
- b) two routes are found in the adj-RIB-ins identified by a RIB\_Att that includes the Security Path Attribute, which differ in the security information contained in their security path attribute, and when the NLRI of the less preferable route is a proper subset of the NLRI of the more preferable route, then only the more preferable route shall be copied to the corresponding loc\_RIB. Otherwise, both such routes shall be copied to the corresponding loc\_RIB

**39. Appendix K - Flimsy # 11 - CCB Review of Proposed Defects Indicated in WP/271**

WP271 indicated three areas containing potential defects in the ATN Sub Volume V SARPS. Based upon the presentation of the WP, the CCB met to review and discuss the potential problem areas and produce recommendations for the Working Group.

**I.** In the first area, it was indicated that the RRI PICs do not mandate implementation of the Request of Acknowledgment of the Selective Acknowledgment. It was further indicated that, in the draft ver. 4.0 SARPs, APRL references ATN6 and ATN7 in 5.2.4.1.1.2, *Specific ATN Requirements* and APRL references T4F31 and T4F32 in section 5.2.4.1.3.1.3, *ISO 8073 Optional Functions*, do not mandate implementation of Request of Acknowledgment and of Selective Acknowledgment. It was further stated that differing interpretations of the draft SARPs could be possible when reviewing these APRLs.

The CCB reviewed all indicated APRL items and concluded the following:

1. ATN 6, *Use of Selective Acknowledgment* and ATN7, *Use of Request Acknowledgment* are now indicated as Optional in the ver 4.1 APRLs, which correctly corresponds to the RRI PICs.
2. T4F31, *Retention and acknowledgment of TPDU's - Use of selective acknowledgment*, and T4F32, *Retention and acknowledgment of TPDU's - Use of request acknowledgment*, are indicated as "MO" Mandatory to Implement, Optional to Use. This APRL requirement again correctly corresponds to the RRI PICs which do not mandate implementation of these functions.

The CCB has therefore determined that all referenced APRL items indicate correct status in relation to RRI PICs and no defects exist.

**II.** The next area containing potential defects to be reviewed concerned section 8.3.2, *Compliance with ISO/IEC 10747*. It was indicated that partial source routing is optional for support by the ATN airborne Router (Table 8-5 and 8.3.2.1, Note 7) and excluded for support by the ATN Air/Ground Router (8.3.2.1.2.j). It was proposed that the APRLs should be changed. The entry should be set to "O" for G/G and Airborne routes and to "OX" for A/G routers.

The CCB reviewed all indicated APRL items and concluded the following:

- A review of Table 8-5, which was newly revised in the version 4.1 update process, indicates that Support of Partial Source Routing is a mandatory ISO 10747 requirement for which support is Optional for ATN Airborne routers (since there are no known user requirements).
- Section 8.3.2.1, Note 7 correctly indicates that all non-applicable ISO 10747 requirements have been removed as ATN mandatory specifications.
- Section 8.3.2.1.2.j indicates that, over adjacencies with Airborne routers, ATN Air/Ground routers are specifically excluded from use of Partial Source Routing.
- Section 8.3.3.1.8, **IDRP CLNS Forwarding**, indicates that the item PSRCRT, while mandatory for ISO is an optional parameter within ATN.

The CCB is of the opinion that the APRL PSRCRT should be modified as indicated in the problem statement to reflect the condition "OX" optional to implement - precluded from use, for A/G Routers to conform with the requirement in Section 8.3.2.1.2.j.

**III.** The third area of potential defect concerned the APRL named CTGn (ESCT Generation) in Table 8-1, *ISO 9542 - Intermediate System*. The proposal indicated that ESCT serves no purpose over mobile subnetworks which can have only Intermediate Systems as neighbors. Since the ESCT field is 4 bytes long, it was proposed that it would be preferable to exclude ESCT in an ISH when transmitted over a mobile subnetwork to save bandwidth.

The CCB agrees with the proposal and recommends that the value CTGn in Table 8-1 be changed from "O" to "OX".

**40. Appendix L - Flimsy # 13 - User Requirements for ATSC Class Routing & Number of ATSC Classes Required for CNS/ATM-1**

**1. Background**

At the Joint meeting WG2/WG3 meeting on Tuesday 23rd the subject of ATSC Routing Classes was discussed at length based upon WG3/WP6-14 (WG2/WP273). The meeting could not agree on a resolution to the question of whether ATSC data should be routed on a “strong” or “weak” basis by the underlying internetwork service. A sub-group was established to consider WG3/6-14 and WG2/WP266 (which was addressing the same issue but not addressed by the joint meeting) in order to propose a consolidated solution which was to be presented to the joint session planned for Thursday 25th.

Since then it has become apparent that before any solution can be proposed it is necessary for the User Requirement to be agreed.

**2. WG2 Schedule**

At its Brisbane meeting WG2 agreed that, in order to meet the ICAO deadline of submission of its draft SARPs by end June ‘96, the Brussels meeting would be the LAST opportunity to introduce technical changes. This allows an editorial committee to conduct one final review of the draft resulting from Brussels to be submitted to the June meeting for approval.

**3. Current Solution in Sub Volume 5**

Based upon the original User Requirements expressed at the Joint WG2/3 meetings in FairFax (May ‘95) the current version of the Sub Vol. 5 SARPs support a “strong” QoS based routing, i.e. if a route providing the requested ATSC class (or better) is not available the data is discarded.

**4. User Requirement**

Before any changes are introduced to Sub Volume V it is firstly essential to agree on the User Requirement which essentially comes down to 4 questions:

- a. Is it acceptable to WG3 that the Sub Vol. 5 SARPs define provisions that the ATN Internet discards ATSC data when routes supporting the ATSC class requested (or better) are not available ?
- b. Assuming that the answer to “a” is **NO** then does WG3 require that the internet provides an indication to the destination ULA of the lowest ATSC class Route over which data has arrived in cases where the data has been delivered over a Route which supports a lower ATSC class than that requested ? An alternative means for the destination system to detect a potential degraded service is through the use of application timestamping. WG2 **STRONGLY** prefers the latter option in order not to compromise current Sub Vol. 5 Validation programmes and completion time-scales.
- c. Sub Volume 5 currently supports up to eight ATSC classes. Definition of further classes compromises the validation programme and provides no practical benefit within the CNS/ATM-1 package timescales. WG3 is requested to confirm that they do not require the use of more than up to eight ATSC classes for CNS/ATM-1.
- d. WG3 is requested to confirm there is no ATSC User Requirement for the ATSC Security Tag value highlighted in the attached table.

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**5. Proposal**

Based upon the above questions WG3 should provide WG2 with a definitive User Requirement (i.e. **Yes/No answers to the above 4 questions**) by end of Thursday. This will allow WG2 to agree on the necessary changes to Sub Vol. 5 if required on Friday before the meeting closes thereby maintaining the current WG2 schedule.

In the event that WG3 cannot agree on the User Requirement by Close of Business on Thursday it is proposed that the Sub Vol. 5 SARPs remain unchanged on this subject, i.e. “strong” QoS based routing where ATSC data is discarded.

In the event that WG3 cannot provide a definitive user requirement the Sub Volume 5 SARPs will remain unchanged on this subject.

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<b>Traffic Type</b>	<b>Category</b>	<b>Security Tag Value</b>	<b>Semantics</b>
ATN Operational Communications	Air Traffic Service Communications (ATSC)	000 00001	No Traffic Type Policy Preference
		000 10000	Traffic only follows Class A ATSC route(s).
		000 10001	Traffic only follows Class B ATSC route(s).
		000 10010	Traffic only follows Class C ATSC route(s).
		000 10011	Traffic only follows Class D ATSC route(s).
		000 10100	Traffic only follows Class E ATSC route(s).
		000 10101	Traffic only follows Class F ATSC route(s).
		000 10110	Traffic only follows Class G ATSC route(s).
		000 10111	Traffic only follows Class H ATSC route(s).
	<b>000 00011</b>	<b>Route Traffic using an ordered preference of Mode S first, then VHF Data Link, then Satellite Data Link, then HF Data Link.</b>	
	Aeronautical Operational Control (AOC)	001 00001	No Traffic Type Policy Preference.
		001 00010	Route Traffic only via Gatelink.
		001 00011	Route Traffic only via VHF Data Link.
		001 00100	Route Traffic only via Satellite Data Link.
		001 00101	Route Traffic only via HF Data Link.
001 00110		Route Traffic only via Mode S Data Link.	
001 00111		Route Traffic using an ordered preference of Gatelink first, then VHF Data Link.	
001 01000		Route Traffic using an ordered preference of Gatelink first, then VHF Data Link, then Satellite.	
001 01001	Route Traffic using an ordered preference of Gatelink first, then VHF Data Link, then HF Data Link, then Satellite Data Link.		
ATN Administrative Communications		001 10000	
General Communications		N/A <sup>1</sup>	
ATN Systems Management Communications		011 00000	

**Table 6-1:-Encoding of Traffic Type Security Tag**

**41. Appendix M - Flimsy # 14 - Provisions for Fast Select Control in ICAO AMSS SARPs and the INMARSAT Satellite Subnetwork**

WG-2 requested to provide information on the availability of the Fast Select Functionality on the Inmarsat network.

There are provisions in the system to meet this requirement, at the user's request. However, it should be noted that this parameter is only provided in order to allow interworking with X.25 networks, and is not a standard parameter in the OSI Network Service Interface. It is only present when requested by an SNS-user interworking with such a network and requiring these specific services for a particular connection.

The Fast Select Control parameter is used to impose controls on the transfer of user data during connection establishment and release and on whether or not the connection may enter the data-transfer state.

Current edition of the ICAO Annex 10, Vol. III, Part 1 Chapter 4 contains provisions to allow Fast Select Control for the AMSS users, when the aeronautical mobile-satellite service is installed and maintained in operations as an aid to the air traffic services, however, this facility is not mandatory (Section 4.7).

The ATN Sub Volume V SARPS should take these provisions accordingly.



**42. Appendix N - Flimsy # 15 - CP resulting from WG2-8/WP276**  
(WG3 Matters of interest to WG2)

**Scope**

This flimsy contains a Change Proposal to Version 4.1 of the draft CNS/ATM-1 Internet SARPs (subvolume 5). It results from WG2-8/WP276, also referred to as WG3/Fl. 6-6, which contains WG3 matters of interest to WG2.

This Working Paper was presented to WG2 by S. Van Trees on behalf of WG3, and the following changes to Subvolume 5 of the SARPs were agreed.

**Change Proposal to SV5 of draft CNS/ATM-1 SARPs, v4.1**

*See next pages*

**.Change to section 5 :**

This change results from item 1 in WP276.

**5.1.2 TransportService Description**

*Note 1. — When the TS-USER requires use of the connection mode transport protocol the TS-USER will provide the following information to the TS-PROVIDER on a per Transport Connection basis:*

- a) *called and calling TSAP address;*
- b) *whether or not the expedited data option is required;*
- c) *the required residual error rate (RER) to determine whether or not non-use of the transport checksum is allowed~~the transport checksum is required~~;*
- d) *the Application Service Priority to be mapped into the resulting CLNP NPDUs according to Table 2-2;*
- e) *the ATN Security Label specifying the ATN Traffic Type, i.e.*
  - *ATN Operational Communications;*
  - *ATN Administrative Communications;*
  - *General Communications;*
  - *Systems Management Communications.*

**Changes to section 2 :**

This change results from item 7.3 in WP276.

**2.2.2.3 Mobile RDs**

Each ATN equipped mobile platform (e.g. an aircraft), shall operate at least one ATN RD. This shall be an End Routing Domain. This ERD shall include ATSC and AINSC related Intermediate and End Systems contained within this mobile platform, and at least one Airborne Router (Router Class 6 or 7).

*Note 1.— An ATN mobile platform may operate multiple ERDs.*

*Note 2.— When more than one Airborne Router(BIS) is installed on board an aircraft, then each must be in a separate Routing Domain.*

**Recommendation.—** *ATSC and AINSC End-Systems and Intermediate Systems (non-BIS) located within a mobile platform should form a single Routing Domain including the airborne router (BIS) referred to in the above note, within the appropriate Administrative Domain.*

*Note 3.— A single routing domain minimizes the transfer of routing information over low-bandwidth air-ground subnetworks.*

*Note 4.— It is anticipated that other classes of mobile platforms (e.g. airport surface vehicles, etc.) may be operated as ATN routing domains in the future.*

**43. Appendix O - Flimsy # 16 - CP to enable the “Weak” Interpretation of ATSC Class**

## Introduction

Following the acceptance of WP282, the following Change Proposal (based on WP266) has been agreed by WG2.

### Proposed Changes to 3.2.1.2.1.2

#### 3.2.1.2.1.2 ATSC Class Specified

*Note 1.— This case corresponds to Traffic Type and Associated Routing Policy Security Tag values 000 10000 to 000 10111 inclusive.*

If the NPDU contains a CLNP Header Security Parameter in the globally unique format, and encodes:

- a) security related information according to Chapter 6 under the ATN Security Registration Identifier,
- b) a traffic type of ATN Operational Communications - Air Traffic Service Communications, and
- c) a requirement to route the NPDU over a route of a specified ATSC Class,

then the NPDU shall be forwarded over a selected route to the NPDU's destination that contains a security path attribute comprising the ATN Security Registration Identifier and security information that comprises:

- i) An Air/Ground Subnetwork Security Tag that has "ATN Operational Communications - Air Traffic Services Communications" in its set of permissible Traffic Types, or
- ii) no Air/Ground Subnetwork Security Tag

and,

an ATSC Class Security Tag indicating:

- I. -support of the required class, or a higher class, or
- II. if no such route is available then, the route with the highest ATSC Class available is chosen.

*Note 2.— ATSC Class "H" is the lowest and Class "A" is the highest.*

If no such route can be found then the NPDU shall be discarded.

If multiple routes are available which meet or exceed the required ATSC Class, then the route with the lowest relative cost shall be selected.

### Proposed Change to 8.3.1.6.3

Delete the note in this section.

### Proposed Change to Table 6-1

- 1) For ATN Operational Communications - ATSC, change "only follows" to "prefers".
- 2) Delete Security Tag Value 000 00011 and Semantics from the Table.

### Proposed Change to 2.7.1.1

Delete the 2nd list item (b)

### Proposed Change to 3.2.1.2.2

Delete all.

44. Appendix P - Action List

REF.	DELIVERABLE	ACTIONEE	BY
	<b>MELBOURNE WG</b>		
	<b>TOULOUSE WG</b>		
	<b>FAIR OAKS</b>		
ACTION - 4/1	TO DEVELOP HIGH LEVEL PROPOSALS FOR CNS/ATM-2 INTERNET REQUIREMENTS FOR PRESENTATION TO THE OCTOBER ATNP WG MEETINGS.	RON COSSA	WG2/9
	<b>ROME</b>		
	<b>BANFF</b>		
6/22	TO PROVIDE IATA TOOL SPECIFICATION INFORMATION BASED ON GUIDANCE PROVIDED AS A RESULT OF 6/17	MR. HENNIG	WG2/9
6/31	TO COMPLETE DRAFT SECTION 3 OF GUIDANCE MATERIAL	MR. SHARMA/MR. HENNIG	WG2/9
6/33	TO COMPLETE DRAFT SECTION 5 OF GUIDANCE MATERIAL	MR. ROY	WG2/9
6/35	TO COMPLETE DRAFT SECTION 7 OF GUIDANCE MATERIAL	MR. HENNIG	WG2/9
	<b>BRISBANE</b>		
7/21	DRAFT RECOMMENDATION FOR ATNP/2 REQUESTING THAT ICAO REQUEST STATES TO ESTABLISH REGISTRATION AUTHORITIES FOR NSAP ADDRESSES.	F COLLIVER	WG2/9
7/22	PROPOSE FORMAT FOR NSAP ADDRESS REPOSITORY ON CENA ARCHIVE	F COLLIVER (WG2/8 F#1)	WG2/9
7/23	DEVELOP GUIDANCE MATERIAL FOR ROUTE AGGREGATION, ROUTE MERGING & ROUTE INFORMATION REDUCTION.	H HOF	WG2/9
7/24	TO DEVELOP GUIDANCE MATERIAL FOR VDL MODE 3/CLNP PRIORITY MAPPING	R COSSA	WG2/9
7/25	TO DEVELOP GUIDANCE MATERIAL RELATED TO TP4 TIMER SETTINGS	R COSSA	WG2/9
7/26	TO DEVELOP GUIDANCE MATERIAL RELATED TO SUBNETWORK PRIORITY INVOCATION & USE OF THE X.25 IDLE TIMER	H THULIN	WG2/9
7/27	TO DEVELOP GUIDANCE MATERIAL RELATED TO SECURITY LABEL HANDLING BY TRANSPORT SERVICE/ENTITY	A SHARMA	WG2/9
7/28	TO DEVELOP GUIDANCE MATERIAL RELATED TO TRAFFIC TYPE SEMANTIC AND HANDLING WITHIN ISS.	F COLLIVER	WG2/9
7/29	TO DEVELOP GUIDANCE MATERIAL RELATED TO (A) NSAP, TSAP ADDRESS REGISTRATION AND ASSIGNMENT , (B) EFFICIENT ASSIGNMENT OF GROUND ARS VALUES TO SUPPORT EFFICIENT GLOBAL ROUTING	KP GRAF	WG2/9
7/33	PRESENT RESULTS OF NUT CONCEPT VALIDATION TRIALS	P HENNIG	WG2/9
7/35	DEVELOP PROPOSAL FOR VALIDATION ASSESSMENT PROCESS	H HOF	WG2/9

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<b>REF.</b>	<b>DELIVERABLE</b>	<b>ACTIONEE</b>	<b>BY</b>
7/39	CONSOLIDATE ALL AVAILABLE VALIDATION TOOL DESCRIPTIONS	H HOF	WG2/9
7/40	CONTINUE DEVELOPMENT OF VALIDATION REPORT FOR SUBMISSION TO WG2/8	P WHITFIELD	WG2/9
7/41	REVIEW ATN SPECIFIC PRLS WITH RESPECT TO REPLACING THE WORDS "USE OF" WITH "SUPPORT OF"	TBA	WG2/9
	<b>BRUSSELS</b>		
8/1	REMOVE REFS GLOSSARIES & ACRONYM LIST FROM SUB VOLUME 5 SARPS.	MR. CRENAIS	WG2/9
8/2	CHECK FOR DISCREPANCIES BETWEEN THE GLOSSARIES/ACRONYM LIST AND PROPOSE UPDATES TO SUB VOLUME 1	MS COSGROVE	WG2/9
8/3	REPORT WG2 RECOMMENDATION THAT THE REFERENCE SECTION IN THE SUB VOLUME 1 SARPS BE STRUCTURED TO REFLECT APPLICABLE REFERENCES TO EACH OF THE SUCCEEDING SUB VOLUMES.	MS COSGROVE	WG2/9
8/4	TO INVESTIGATE WHAT THE PANEL SECRETARY DID WITH THE COMBINED FLIMSY 9/11 AMCP WP, AND IF IT WAS NOT PRESENTED TO THE AMCP MEETING TO AGREE ON A STRATEGY WHEREBY THE RECOMMENDATIONS IN THE PAPER COULD BE ACCOMMODATED.	MR SHARMA	WG2/9
8/5	INVESTIGATE ISSUES REQUIRED TO DEVELOP CP FOR DR100 (IDRP TIMERS)	TBD	TBD
8/6	INCLUDE EXPLICIT NUMBERING IN FUTURE SARPS MODIFICATIONS LISTS.	MR. CRENAIS	WG2/9
8/7	CONTINUE SIMULATION WORK TO DETERMINE OPTIMUM VALUE FOR CONGESTION MANAGEMENT BETA VALUE.	MR. HOF	WG2/9
8/8	TO REVIEW VERSION 1.2 GUIDANCE MATERIAL & PROVIDE COMMENTS TO NEXT WG2 MEETING.	ALL	WG2/9
8/9	REQUEST MR. WHITFIELD TO GATHER DETAILED INPUT FROM PARTICIPATING STATES/ORGANISATIONS ON THEIR VALIDATION PLANS.	MR. SHARMA	ASAP
8/10	ISSUE FLIMSY 10/12 TO ATN-TECHNICAL MAILING LIST REQUESTING FEEDBACK ON PROPOSED CHANGES.	MR. SHARMA	ASAP
8/11	DEVELOP DRAFT ATNP/2 WP TITLED "PROGRESS REPORT OF WG2 SINCE ATNP/1"	MR.SHARMA	WG2/9

*ICAO ATNP WG2 (ATN Internet WG) - Report of the Eighth Meeting*

<b>REF.</b>	<b>DELIVERABLE</b>	<b>ACTIONEE</b>	<b>BY</b>
8/12	DEVELOP DRAFT ATNP/2 WP TITLED "INTRODUCTION TO SUB VOLUME 5 SARPS"	MS COSGROVE	WG2/9
8/13	DEVELOP DRAFT ATNP/2 WP TITLED "INTRODUCTION TO SUB VOLUME 5 SARPS"	MS COSGROVE	WG2/9
8/14	DEVELOP DRAFT ATNP/2 WP INTRODUCING PROPOSED AMENDMENTS TO SUB-VOLUME 5	MR.SHARMA	WG2/9
8/15	DEVELOP DRAFT ATNP/2 PAPER PROPOSING MECHANISMS & PROCEDURES FOR ON-GOING MAINTENANCE OF SARPS POST ATNP/2	MR. HOF	WG2/9
8/16	-DEVELOP DRAFT ATNP/2 PAPER PROPOSING APPROACH FOR THE DEVELOPMENT OF CNS/ATM-2 INTERNET SARPS	MR.HOF	WG2/9

**END OF REPORT !**