AERONAUTICAL TELECOMMUNICATIONS NETWORK PANEL

Working Group 2

15th Meeting

Utrecht, The Netherlands

28 June - 1 July 1998

SME V (Internet Communications Service) Status Report

Working Paper

Presented by Klaus-Peter Graf (Subvolume V SME)

Summary

This paper provides a summary on the status of the PDRs which have been raised against the ATN ICS SARPs (Subvolume 5).

There are currently eight accepted PDRs concerning the ATN ICS SARPs waiting for final resolution. These PDRs including draft technical solutions are attached to this paper.

WG 2 members are invited to note the current status, to review the attached PDRs and to contribute to the development of appropriate technical solutions for these PDRs.

1

Introduction

This paper provides a summary on the status of Proposed Defect Reports (PDRs) raised against the ATN Internet Communications Service (ICS) SARPs for information of WG 2 members.

2   PDR Status

Table 1 presents the list of those PDRs which have been submitted to the ATNP Configuration Control Board (CCB) since its establishment in spring 1997 and which apply to the Internet Communications Service (ICS) SARPs. Column 3 of Table 1 lists the status of these PDRs in the ATNP CCB process as of 26th June 1998 and column 4 the version of the ATN ICS SARPs in which the agreed technical solution of the resolved PDR has been included.

PDR Number	PDR Title	CCB Status	Resolved in
97060028	Transport Timers Configuration	RESOLVED	ICAO Version 2.2
97060029	Various Editorial Defects (1)	RESOLVED	ICAO Version 2.2
97060030	IDRP Timers	RESOLVED	ICAO Version 2.2
97100001	Incomplete specification for use of V.42bis by Mobile SNDCF	RESOLVED	ICAO Version 2.2
97100002	SNDCF Call Request/Confirm User Data Length Indicator	RESOLVED	ICAO Version 2.2
97100003	Various Editorial Defects (2)	RESOLVED	ICAO Version 2.2
97100048	LREF Directory Management	RESOLVED	ICAO Version 2.2
98040003	X.25 Address Extension Facility	ACCEPTED	
98050001	IDRP Update Receive Process	ACCEPTED	
98060003	Predicates in ISO/IEC 8473 APRL	ACCEPTED	
98060004	Support of IDRP by Airborne Router implementing optional non-use of IDRP	ACCEPTED	
98060005	Air/Ground Route Initiation APRL	ACCEPTED	
98060006	Correlation of ATSC Class with A/G Subnetwork Type in Airborne Router	ACCEPTED	
98060007	Symmetry of Mobile SNDCF APRL and Route Initiation APRL	ACCEPTED	
98060008	IDRP Traffic Typing	ACCEPTED	

Table 1: Status of ICS PDRs in the ATNP CCB Process

As illustrated in Table 1, a total of 15 PDRs have been raised against the ICS SARPs over the last 15 months. All these PDRs have been accepted by the ATNP CCB as potential defects and have been forwarded to the WG 2 SARPs Development Mechanism (SDM) for resolution.

Seven of the accepted PDRs have been resolved by the WG 2 SDM and the proposed technical solution approved by the CCB. The relevant modifications have been included in the ICAO

Version 2.2 of the ATN SARPs and also brought forward to the Manual of Technical Provisions for the Aeronautical Telecommunication Network (ATN) - ICAO Doc 9705-AN/956 (first edition, 1998). This document currently contains the most mature and correct technical specification of the ATN Internet Communications Service.

There are eight PDRs which have been accepted by the CCB at its 6th meeting in Utrecht and which are waiting for resolution by the WG 2 SDM. These PDRs including draft technical solutions are attached to this paper (attachments A through H).

In addition to the PDRs listed in Table 1 a substantial number of editorial defects has been identified during the review of the ATN SARPs ICAO Version 2.0 (distributed at the Langen ATNP meetings), ICAO Version 2.1 (distributed at the Redondo Beach ATNP meetings), and ICAO Version 2.2 (distributed at the Rio ATNP meetings). These editorial defects have been introduced by the ATN SARPs editing process within ICAO. These defects have been documented in three editorial PDRs which apply to multiple sub-volumes, including sub-volume V. These are summarised in the following table:

PDR Number	PDR Title	CCB Status	Resolved in
97060001	Corrections to ICAO V2.0 produced by ICAO secretariat	RESOLVED	ICAO Version 2.1
97110001	Corrections to ICAO V2.1 produced by ICAO secretariat	RESOLVED	ICAO Version 2.2
98040005	Corrections to ICAO V2.2 produced by ICAO secretariat	RESOLVED	ICAO Doc 9705

Table 2: Status of PDRs Documenting Editorial Defects of Sub-Volume V

3   Un-resolved PDRs

Attachments A through H present the eight un-resolved PDRs raised against the ATN ICS SARPs (Subvolume 5) including initial proposed technical solutions. Most of the reported defects have been identified during an AEEC review of the APRLs for the Mobile SNDCF, Route Initiation, and CLNP and in the frame of the design of the Reference Router Implementation (RRI). Thanks to Tony Whyman and Conor Molloy for highlighting the defects.

Another problem which relates to a performance issue for CLNP forwarding has been reported. The problem statement is reproduced below in italics. However, this performance issue can only by avoided by changing the ICS SARPs to be non-compliant with the ISO/IEC 10747 standard. This is considered to be not acceptable. No PDR has been issued concerning this subject so far.

"The SARPs 5.8.3.9.2 specify that prefixes for routes must be octet-aligned when originating or reducing routes. The intent being to simplify prefix matching as the note in the SARPs states. The notes also state that an implementation must still be able to handle bit-aligned prefixes. The problem here is that if our design caters for bit-aligned prefix our prefix

matching must also therefore be bit-aligned. Therefore losing any of the savings intended by the SARPs.

Prefix matching is of course a key event. It will be carried out multiple times for every CLNP packet forwarded. So it is a performance issue. Currently the only possibility of a bit-aligned prefix being generated is from NLRI aggregation. It seems an unlikely event that two routes for aggregation will only differ in the last bit.

The question boils down to whether the SARPs can mandate that all prefixes in the ATN internet must be octet-aligned in order to reap the benefits of this restriction."

4   Recommendation

WG 2 members are invited to

1. note the status information provided

2. assess the relevance of the performance problem (reported in section 3 above)

3. review the attached PDRs, and

4. progress the resolution of these PDRs.

Attachment A

Title:	Use of X.25 called/calling address extension facility
PDR Reference:	98040003
Originator Reference:	
SARPs Document Reference:	ICS SARPs, Section 5.7
Status:	ACCEPTED
PDR Revision Date:	
PDR Submission Date:	29 April 1998
Submitting State/Organization:	France/STNA
Submitting Author Name:	Tamalet Stephane
Submitting Author E-mail Address:	
Tamalet_stephane@ccmail.dgac.fr	
Submitting Author Supplemental Contact	
Information	STNA, Toulouse, France
	Tel. +33/562/145483
SARPs Date:	ICAO Version 2.2
SARPs Language:	English

Summary of Defect:

During its 14th meeting, ATNP/WG2 reviewed a communique from SICASP about addressing issues concerning a GDLP connected to an ATN router via a ground ISO/IEC 8208 subnetwork. The SICASP communique described a proposed solution of the experienced addressing problem. This proposed solution is planned for inclusion in the Mode S guidance material.

ATNP/WG2 considered that the SICASP proposal is perfectly valid and solves the experienced addressing problem raised by the connection of a GDLP to an ATN ground router via an ISO/IEC 8208 WAN. It consists in the use of the called and calling address extension facility in the X.25 call request packet as the way to convey end-to-end the DTE address of the airborne and air/ground ATN Router. According to the SICASP communique, the same solution will be retained for the VDL subnetwork.

Implementation of the proposed SICASP solution at the DTE ISO 8208 interface of the Mode S GDLP (or VDL ground station respectively) requires a corresponding implementation of the DTE ISO 8208 interface of the air/ground ATN router to ensure interoperability. In the current version of the ATN ICS SARPs, the specification of the mobile SNDCF is generic and assumes that the mobile subnetwork provides a standard X.25 interface where the end-to-end DTE address of the airborne and A/G router are passed in the default calling/called address field of the X.25 call request packet. Neither in the ATN ICS SARPS nor in the GM it is made clear that there may be ground network configurations which will need specific adaptations of the mobile SNDCF to support ATN operation over the Mode S or VDL subnetwork.

For the particular addressing problem raised by the SICASP communique, the ATN ICS SARPs or the GM should make clear that:
1) when an X.25 call request is to be issued over a Mode S or VDL subnetwork, the mobile SNDCF must:
  a) copy the source and destination SNPA address of the related SN-UNITDATA request into the calling and called address extension facilities of the CALL REQUEST packet
  b) insert the local DTE addresses configured for addressing the adjacent mobile subnetwork interface equipment (i.e. the GDLP or VDL ground station respectively) into the (default) called and calling address fields of the CALL REQUEST packet

2) when an X.25 incoming call is received over a Mode S or VDL subnetwork, the mobile SNDCF must:
  a) copy the addresses conveyed in the calling and called address extension facilities into the source and destination address fields of the associated SN-UNITDATA-indication
  b) ignore the value of the (default) called and calling address fields of the INCOMING CALL packet

3) the call collision detection procedure over a Mode S or VDL subnetwork relies on the comparison of addresses conveyed in the called and calling address extension facilities.

Assigned SME: Subvolume V SME (K.-P. Graf)

Proposed SARPs amendment:

(Note from the initiator of the PDR:
In this initial version of the PDR new SARPs requirements are proposed to be added. However, the question on whether a modification to the ATN ICS SARPs or to the GM is more appropriate has to be discussed).

1) Insert a new section 5.7.6.2.1.5 as follows: (the current section 5.7.6.2.1.5 is renamed 5.7.6.2.1.6)

5.7.6.2.1.5 called and calling address extension facilities

Note. -- The addressing scheme in use over Mode S and VDL subnetworks requires that the end-to-end source and destination DTE addresses of the ATN routers be encoded in the called and calling address extension facilities. The called and calling address fields of the call request packet are only used for local addressing between the ATN router and the adjacent mobile subnetwork interface equipment.

5.7.6.2.1.5.1 When the addressing scheme in use over the mobile subnetwork is such that the called address field cannot be used to address the remote ATN router, the calling and called address extension facilities shall respectively be used to convey the end-to-end SN-Source-Address of the local ATN router and end-to-end SN-Destination-Address of the remote ATN router.

Note 1. -- In such a case, the use of the calling and called address fields is a local matter.

Note 2. -- Whatever the addressing scheme in use over the mobile subnetwork, in the remainder of this specification the terms 'called DTE' and 'remote DTE' always refer to the called ATN router. Likewise, the terms 'calling DTE' always refer to the calling ATN router.

5.7.6.2.1.5.2 The called and calling address extension facilities shall be used in the form specified by ISO/IEC 8208 for carrying addresses that are not assigned according to X.213|ISO/IEC 8348.

2) Insert the following note after paragraph 5.7.6.2.2.1.2

Note. -- When the called and calling address extension facilities are used over the mobile subnetwork, the call collision detection procedure is based on the comparison of addresses conveyed with these facilities.

SME Recommendation to CCB:

It is recognised that the addressing problem reported by the SICASP communique may be considered as a pure local problem as it is strictly limited to the DTE/DTE interface of an ATN A/G router and a GDLP (or VDL ground station). At the same time, it is noted that the ground configuration which is described in the SICASP communique and which exhibits the identified problem seems to be a quite common one (use of X.25 ground network for connecting GDLP and A/G router). Therefore, it is deemed appropriate to accept the reported problem as a PDR.

However, the question on whether a modification to the ATN ICS SARPs or to the GM is more appropriate is raised and has to be discussed by the WG2 SDM. At this stage of the discussion, the SME proposal would be to highlight the problem in the form of a note in the ICS SARPs (e.g. in the Note of para 5.7.6.2.1.1.3) and to detail the background to the problem and the particular solution in the CAMAL. This approach would also be consistent with the procedure proposed for tackling the problem on the Mode S subnetwork level.

The following note is proposed to be added following para 5.7.6.2.1.1.3:

Note 1.- If an ISO/IEC 8208-compliant network is used to connect the ground ATN router to the ground station of the mobile subnetwork, then the called and calling address extension facilities of the ISO/IEC 8208 packet layer protocol may be used to convey the DTE addresses specified in the SN-Unitdata Request, whereas

the DTE addresses configured for the ATN router and the ground station in the local ISO/IEC 8208 ground access network may be carried in the calling and called address fields of the ISO/IEC 8208 CALL REQUEST packet.

P.S: For reference, the SICASP communique can be retrieved from the atnp archive by downloading the file "dte_adr.zip" from the directory atnp/ccb/sme5/*

CCB Decision:

Attachment B

Title: Unnecessary Requirement for IDRP Update Receive Process
PDR Reference: 98050001
Originator Reference:
SARPs Document Reference: ICS SARPs, Section 5.8.3.5.5
Status: ACCEPTED
PDR Revision Date:
PDR Submission Date: 18 May 1998
Submitting State/Organization: DFS/Germany
Submitting Author Name: Klaus-Peter Graf
Submitting Author E-mail Address: klaus.graf@unibw-muenchen.de
Submitting Author Supplemental Contact
Information: Tel. +49/89/6004 4123
                                            Fax. +49/89/680 735 13
SARPs Date: ICAO Version 2.2
SARPs Language: English

Summary of Defect:
The following defect was reported by Conor Molloy (Retix):
In para 5.8.3.5.4 (IDRP Update Send Process) Item INT, i.e. support of the internal update procedures, is optional for an Airborne Router. In para 5.8.3.5.5 (IDRP Update Receive Process) Item INCONS, i.e. the verification of the local preference field for internal updates, is mandatory for an Airborne Router. But the previous requirement INT (in para 5.8.3.5.4) means that airborne routers may not exchange internal updates. Consequently, Airborne Routers should not be mandated to support the detection of inconsistent routeing information in the local preference field. i.e. item INCONS, if they do not support the internal update procedures.

Assigned SME: Subvolume V SME (K.-P. Graf)

Proposed SARPs amendment:
In para 5.8.3.5.5, last line of table (Item INCONS), replace "M" by "INT:O" in the very last column of this table (i.e. for Airborne Router).

SME Recommendation to CCB:

CCB Decision:

Attachment C

Title:	Predicates in ISO/IEC 8473 APRL
PDR Reference:	98060003
Originator Reference:	
SARPs Document Reference:	ICS SARPs, Section 5.6.4.14 and 5.6.4.15
Status:	ACCEPTED
PDR Revision Date:	
PDR Submission Date:	22 June 1998
Submitting State/Organisation:	DFS/Germany
Submitting Author Name:	Klaus-Peter Graf
Submitting Author E-mail Address:	klaus.graf@unibw-muenchen.de
Submitting Author Supplemental	Tel: +49/89/6004 4123
Contact Information:	Fax: +49/89/680 735 13
SARPs Date:	ICAO Version 2.2
SARPs Language:	English

Summary of Defect:

1) In the APRL table 5.6.4.14 (Intermediate System - Supported DT Parameters), the last column (ATN Support) of the item "idCRR-s" should be empty, as the conditional requirement for the item „idCRR-s", i.e. the item „iCRR", can never be true for ATN-compliant implementations. ATN-compliant implementations are not allowed to implement the complete route recording function (iCRR = OX).

2) In the APRL table 5.6.4.15 (Intermediate System - Supported ER Parameters), the entries in the last column (ATN Support) and the last but one column (Status) of the item "ieCRR-s" should be conditional concerning the item "iCRR". This correction is required to be compliant with ISO/IEC 8473.

Assigned SME: Sub-Volume V SME (K.-P. Graf)

Proposed SARPs amendment:

1) In the APRL table 5.6.4.14 (Intermediate System - Supported DT Parameters), change the entry of the last column (ATN Support) of the item "idCRR-s" (line 11) from "M" to " - "

2) In the APRL table 5.6.4.15 (Intermediate System - Supported ER Parameters), change the entries in the last column (ATN Support) and the last but one column (Status) of the item "ieCRR-s" (line 11) from "M" to "iCRR:M"

SME Recommendation to CCB:

CCB Decision:

Attachment D

Title:	Support of IDRP by Airborne Routers implementing optional non-use of IDRP
PDR Reference:	98060004
Originator Reference:	
SARPs Document Reference:	ICS SARPs, Section 5.2.4.1.2
Status:	ACCEPTED
PDR Revision Date:	
PDR Submission Date:	22 June 1998
Submitting State/Organisation:	DFS/Germany
Submitting Author Name:	Klaus-Peter Graf
Submitting Author E-mail Address:	klaus.graf@unibw-muenchen.de
Submitting Author Supplemental	Tel: +49/89/6004 4123
Contact Information:	Fax: +49/89/680 735 13
SARPs Date:	ICAO Version 2.2
SARPs Language:	English

Summary of Defect:

Item b) of para 5.2.4.1.2 mandates the support of the ISO/IEC 10747 Inter-Domain Routing Protocol (IDRP) for the all ATN Inter-Domain Routers, i.e. Router Classes 4 to 7 inclusive. However, Router Class 7 describes an Airborne Router without IDRP, and consequently should not be included in the list of routers concerned by para 5.2.4.1.2.

Assigned SME:	Sub-Volume V SME (K.-P. Graf)

Proposed SARPs amendment:

1) Change para 5.2.4.1.2 to read:

5.4.2.1.2   All ATN Routers (i.e. Router Classes 1 to 7 inclusive) shall support the ISO/IEC 8473 Connectionless Network Protocol (CLNP) as specified in 5.6, including the use of .....

2) Add new para 5.2.4.1.3 to read:

5.2.4.1.3   With the exception of Airborne Routers that implement the procedures for the optional non-use of IDRP (i.e. Router Class 7), all ATN Inter-Domain Routers (i.e. Router Classes 4 to 6 inclusive) shall support the ISO/IEC 10747 Inter-Domain Routing Protocol (IDRP) as specified in 5.8 for the exchange of ....

3) Renumber existing para number 5.2.4.1.3 to 5.2.4.1.4

SME Recommendation to CCB:

CCB Decision:

Attachment E

Title:	Air/Ground Route Initiation APRL
PDR Reference:	98060005
Originator Reference:	
SARPs Document Reference:	ICS SARPs, Section 5.3.5.2.14
Status:	ACCEPTED
PDR Revision Date:	
PDR Submission Date:	22 June 1998
Submitting State/Organisation:	DFS/Germany
Submitting Author Name:	Klaus-Peter Graf
Submitting Author E-mail Address:	klaus.graf@unibw-muenchen.de
Submitting Author Supplemental	Tel: +49/89/6004 4123
Contact Information:	Fax: +49/89/680 735 13
SARPs Date:	ICAO Version 2.2
SARPs Language:	English

Summary of Defect:

1) In the tables

    5.3.5.2.14.2 Airborne Router - Subnetwork Connection Responder
    5.3.5.2.14.3 Airborne Router - Subnetwork Connection Initiator
    5.3.5.2.14.4 Air/Ground Router - Subnetwork Connection Responder
    5.3.5.2.14.5 Air/Ground Router - Subnetwork Connection Initiator

of the APRLs for Air/Ground Route Initiation the conditional compliance requirement used in the first entry of the tables is not carried forward to subsequent entries even though they are similarly conditional.

2) In the APRL table 5.3.5.2.14.3 (Airborne Router - Subnetwork Connection Initiator), the last column (ATN Support) of the item "ISHinCR-ai " has a typo in the predicate. The predicate should be "SendISH-ai and fsSubnet" instead of "SendISH-ar and fsSubnet"

3) In the APRL table 5.3.5.2.14.6 (Termination Procedures), the ATN Support (last column) of the items "Watchdog" (line 2) and "ConfigWD" (line 3) should be conditional on "no support of clear indication" (leave event ?) from the mobile subnetwork.

4) In the APRL table 5.3.5.2.14.1 (General), incorrect ATN SARPs references (third column) are listed for the items "noIDRP-a", "noIDRP-ag", and "lvSubnet".

Assigned SME: Sub-Volume V SME (K.-P. Graf)

Proposed SARPs amendment:

1) In Table 5.3.5.2.14.2 (Airborne Router - Subnetwork Connection Responder) add predicate "giOragSubnet" to the last column of the entries in line 4 through 10 to read:

Item	Description	ATN SARPs Reference	ATN Support
respAR-ar	Response to incoming Call Request	5.3.5.2.2	giOragSubnet: M
valCR-ar	Validation of incoming Call Request	5.3.5.2.2	giOragSubnet:O
RespISH-ar	Generation of ISH PDU	5.3.5.2.6	giOragSubnet: M
ISHinCC-ar	Encoding ISH PDU in Call Accept User Data	5.3.5.2.6	giOragSubnet and RespISH-ar and fsSubnet: O
negNoIDRP-	Transmission of ISH PDU with SEL field of	5.3.5.2.6	giOragSubnet and

Item	Description	ATN SARPs Reference	ATN Support
ar	NET set to Feh		noIDRP-a:M
negIDRP-ar	Transmission of ISH PDU with SEL field of NET set to zero	5.3.5.2.6	giOragSubnet and ^noIDRP-a:M
autoRoute-ar	Inference of available routes from received NET of A/G Router	5.3.5.2.12	giOragSubnet and noIDRP-a:M
initIDRP-ar	IDRP startup procedures - Invoke activate action	5.3.2.10	giOragSubnet and ^noIDRP-a:M
supISH-ar	Suppression of multiple ISH PDUs	5.3.5.2.10	giOragSubnet and ^noIDRP-a: O
valNET-ar	Validation of received NET	5.3.5.2.7	giOragSubnet and ^noIDRP-a: O

giOragSubnet: giSubnet or agSubnet

2) In Table 5.3.5.2.14.3 (Airborne Router - Subnetwork Connection Initiator) add predicate "EventDrv or pollReq" to the last column of the entries in line 6 through 12 to read:

Item	Description	ATN SARPs Reference	ATN Support
polling-ai	Procedures for polling a list of subnet addresses	5.3.5.2.3.1	pollReq: M
backoff-ai	Backoff Procedure	5.3.5.2.3.1.2	pollReq: M
connect-ai	Connect on receipt of Join Event	5.3.5.2.3.2	EventDrvn: M
ValJoin-ai	Validation of Join Event	5.3.5.2.3.2	EventDrvn: O
SendISH-ai	Generation of ISH PDU	5.3.5.2.6	EventDrvn or pollReq:M
ISHinCR-ai	Encoding of ISH PDU in Call Request	5.3.5.2.6	SendISH-ar and fsSubnet: O
negNoIDRP-ai	Transmission of ISH PDU with SEL field of NET set to Feh	5.3.5.2.8	EventDrvn or pollReq and noIDRP-a:M
negIDRP-ai	Transmission of ISH PDU with SEL field of NET set to zero	5.3.5.2.8	EventDrvn or pollReq and ^noIDRP-a:M
autoRoute-ai	Inference of available routes from received NET of A/G Router	5.3.5.2.12.3	EventDrvn or pollReq and noIDRP-a:M
initIDRP-ai	IDRP startup procedures - listenForOpen set to true	5.3.5.2.10	EventDrvn or pollReq and ^noIDRP-a:M
supISH-ai	Suppression of multiple ISH PDUs	5.3.5.2.10	EventDrvn or pollReq and ^noIDRP-a: O
valNET-ai	Validation of received NET	5.3.5.2.7	EventDrvn or pollReq and

Item	Description	ATN SARPs Reference	ATN Support
			^noIDRP-a: O

pollReq: aiSubnet and njSubnet

EventDrvn: jSubnet and (aiSubnet or agSubnet)

3) In Table 5.3.5.2.14.4 (Air/Ground Router - Subnetwork Connection Responder) add predicate "aiOragSubnet" to the last column of the entries in line 5 through 11 to read:

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

aiOragSubnet: aiSubnet or agSubnet

4) In Table 5.3.5.2.14.5 (Air/Ground Router - Subnetwork Connection Initiator) add predicate "goOragSubnet" to the last column of the entries in line 2 through 10 to read:

Item	Description	ATN SARPs Reference	ATN Support
connect-agi	Connect on receipt of Join Event	5.3.5.2.4	goOragSubnet: M
ValJoin-agi	Validation of Join Event	5.3.5.2.4	connect-agi: O
SendISH-agi	Generation of ISH PDU	5.3.5.2.6	connect-agi: M
ISHinCR-agi	Encoding of ISH PDU in Call Request	5.3.5.2.6	Send-ISH-agi and fsSubnet: O
negNoIDRP-agi	Receipt of ISH PDU with SEL field of NET set to Feh	5.3.5.2.8	goOragSubnet: M

Item	Description	ATN SARPs Reference	ATN Support
negIDRP-agi	Receipt of ISH PDU with SEL field of NET set to zero	5.3.5.2.8	goOragSubnet: M
autoRoute-agi	Inference of available routes from received NET of Airborne Router	5.3.5.2.12.2	goOragSubnet: M
initIDRP-agi	IDRP startup procedures - listenForOpen set to true	5.3.5.2.10	goOragSubnet: M
supISH-agi	Suppression of multiple ISH PDUs	5.3.5.2.10	goOragSubnet: O
valNET-agi	Validation of received NET	5.3.5.2.7	goOragSubnet: O

goOragSubnet: giSubnet or agSubnet

5) In Table 5.3.5.2.14.3 (Airborne Router - Subnetwork Connection Initiator), change the predicate in the last column (ATN Support) of the item "ISHinCR-ai" (line 6) from "SendISH-ar and fsSubnet" to "SendISH-ai and fsSubnet".

6) At the end of Table 5.3.5.2.14.1 (General) add new table line with the following entries:
   Item = sgClearInd
   Description = Provision of subnetwork generated Clear Indication
   ATN SARPs Reference = 5.3.5.2.13
   ATN Support = O

7) In Table 5.3.5.2.14.6 (Termination Procedures), change the entry in the last column (ATN Support) of the item "Watchdog" (line 2) from "M" to "^sgClearInd:M"

8) In Table 5.3.5.2.14.6 (Termination Procedures), change the entry in the last column (ATN Support) of the item "ConfigWD" (line 3) from "O" to "^sgClearInd:O"

9) In Table 5.3.5.2.14.1 (General), change the ATN SARPs reference (third column) of the item "noIDRP-a" (line 7) from "5.3.2.12.3" to "5.3.5.2.12.3"

10) In Table 5.3.5.2.14.1 (General), change the ATN SARPs reference (third column) of the item "noIDRP-ag" (line 8) from "5.3.2.12.2" to "5.3.5.2.12.2"

11) In Table 5.3.5.2.14.1 (General), change the ATN SARPs reference (third column) of the item "lvSubnet" (line 9) from "5.3.2.13" to "5.3.5.2.13"

SME Recommendation to CCB:

CCB Decision:

Attachment F

Title:	Correlation of ATSC class with a/g subnetwork type in Airborne Router
PDR Reference:	98060006
Originator Reference:	
SARPs Document Reference:	ICS SARPs, Section 5.8.3.2.3.3
Status:	ACCEPTED
PDR Revision Date:	
PDR Submission Date:	22 June 1998
Submitting State/Organisation:	DFS/Germany
Submitting Author Name:	Klaus-Peter Graf
Submitting Author E-mail Address:	klaus.graf@unibw-muenchen.de
Submitting Author Supplemental	Tel: +49/89/6004 4123
Contact Information:	Fax: +49/89/680 735 13
SARPs Date:	ICAO Version 2.2
SARPs Language:	English

Summary of Defect:

Section 5.8.3 specifies two types of security tag sets, namely the air/ground subnetwork type security tag set and the ATSC class security tag set, to convey subnetwork type specific or traffic type specific details respectively about available routes between adjacent BISs. Whereas the information provided in the air/ground subnetwork type security tag set(s) (i.e. the A/G subnetwork type and the permissible traffic type) is associated with the particular air/ground subnetwork(s) being components of the concerned route, the information provided in the ATSC Class security tag set (i.e. the available ATSC Class) is associated with the route.

Whereas A/G Routers are assumed to be in a position to relate the route-specific information of the ATSC Class security tag set to the air/ground subnetwork-specific information of the air/ground subnetwork type security tag set(s) due to configured relevant a priori knowledge, this correlation cannot be performed by Airborne Routers as they will not have this a priori knowledge available onboard in general. Therefore, there are difficulties for the Airborne Router to relate the ATSC Class received on a route to the individual subnetworks received on the same route, if more than one subnetwork is available over the air/ground adjacency.

For example, if the Airborne Router receives a route with the following security information:
air/ground subnetwork type security tag 1 = VDL, ATSC traffic allowed
air/ground subnetwork type security tag 2 = AMSS, ATSC and AOC traffic allowed
ATSC Class security tag = Class B
should it update its FIB so that it forwards ATSC Class B traffic via the VDL subnetwork or via the AMSS subnetwork or via both ?

Assigned SME: Sub-Volume V SME (K.-P. Graf)

Proposed SARPs amendment:

Alternative fixes to the above reported problem appear to be
1. to require a prior knowledge (concerning ATSC class) by an airborne router of all a/g subnetworks that it may come in reach of, or
2. to include the ATSC class on the ISH PDU by some extension mechanism, or
3. to link the information in the ATSC Class security tag to the information in the air/ground subnetwork type security tag by a modification of the protocol, e.g. by merging the two individual security tag sets into a common security tag set, or
4. to uplink individual routes to Airborne Routers for each pair of ATSC Class security tag and air/ground subnetwork type security tag, or
5. to ignore the ATSC class parameter on the air/ground hop when routing packets from air to ground.

SME Recommendation to CCB:
CCB Decision:

Attachment G

Title: Symmetry of Mobile SNDCF APRL and Route Initiation APRL
PDR Reference: 98060007
Originator Reference:
SARPs Document Reference: ICS SARPs, Section 5.7.7.8 and 5.3.5.2.14
Status: ACCEPTED
PDR Revision Date:
PDR Submission Date: 22 June 1998
Submitting State/Organisation: DFS/Germany
Submitting Author Name: Klaus-Peter Graf
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Submitting Author Supplemental   Tel: +49/89/6004 4123
Contact Information: Fax: +49/89/680 735 13
SARPs Date: ICAO Version 2.2
SARPs Language: English

Summary of Defect:

The Mobile SNDCF ARPLs as specified in section 5.7.7.8 are symmetric. However, operational implementations may not implement the SNDCF symmetrically. For example, an A/G Router that only supports VDL will never perform connection initiation. The APRL needs to allow for this case.

It appears that there is a similar issue for the Route Initiation APRL.

Assigned SME: Sub-Volume V SME (K.-P. Graf)

SME Recommendation to CCB: The reported problem appears to be an over-specification in the SARPs. It seems appropriate to remove this over-specification by making some requirements optional or conditional on some other requirements.

Proposed SARPs amendment:

The entries in the ATN Support column of the Tables 5.7.7.8.2 through 5.7.7.8.5 have to be complemented by appropriate conditional compliance predicates. These predicates have to be introduced and defined in Table 5.7.7.8.1.

CCB Decision:

Attachment H

Title: IDRP Traffic Typing
PDR Reference: 98060008
Originator Reference: IDRP-traffic
SARPs Document Reference: V2.2 – 5.3.2.2.3.5 and 5.8.3.2.14.1
Status: ACCEPTED
PDR Revision Date:
PDR Submission Date: 15/06/98
Submitting State/Organisation: Open Network Solutions, Inc.
Submitting Author Name: James Moulton
Submitting Author E-mail Address: moulton@ons.com
Submitting Author Supplemental
Contact Information:
SARPs Date: ICAO Version 2.2
SARPs Language: English

Summary of Defect:

The referenced paragraph (5.8.3.2.14.1) specifies that BISPDUs will be transmitted by CLNP with a traffic type of „Systems Management".

The referenced paragraph on routing policy (5.3.2.2.3.5.1) specifies that a CLNP pdu with a traffic type of „Systems Management" may only be sent on subnetworks with „ATN Systems Management Communications" set in the permissible traffic types.

The specification of permitted traffic type of „ATSC only" results in the prohibition of sending IDRP traffic on that link.

Assigned SME: Sub-Volume V SME

Proposed SARPs amendment:

There seems to be two potential solutions to this problem:

1.   Re-define IDRP pdus to a different traffic type
2.   Change the policy so that System Management traffic may be sent on any link.

The proposed solution 1 is needed if the type of system management data includes exchanges other than IDRP. That is, if system management needs to send data over a link then it may be appropriate to segregate IDRP traffic from system management traffic.

The proposed solution 2 is needed to allow IDRP traffic on ATSC-only links. (Of course, it can also be stated that all ATSC-only links must also have the System Mangament traffic type set.) It may be appropriate to establish a traffic type hierarchy where some traffic types like IDRP traffic can go on any link except higher „priority" links.

SME Recommendation to CCB: Resolve reported problem by additional SARPs note stating the need for appropriate configuration of ATN routers concerning the routing restrictions applicable to the router's adjacencies.

CCB Decision: