ATNP WG2 – ICS Drafting Group (IDG)
Third Meeting
03-05 November 1999

1 Introduction.

The ATNP WG2 ICS Drafting Group (IDG) held its third meeting in Gatwick, UK on 03-05 November 1999. The following people participated in the meeting:

R. Jones
T. McParland
K-P. Graf
T. Whyman
S. Tamalet
B. Cardwell

Mr. Cardwell served as the IDG chairman.

The IDG reviewed and approved the agenda (WP1) proposed by Mr. Cardwell with a few minor additions (attachment 1 to this report).

The IDG reviewed 18 working papers and 2 flimsies (the list of WPs is provided as attachment 2 to this report).

2 Review of the IDG2 Report, WG2-19 Report and the IDG Status Report.

WPs 2, 3 & 4 were reviewed to determine which actions had been progressed and which still required further work. Detailed discussion of the issues/solutions was postponed to the relevant agenda items; all items had been progressed.

3 Current Status of Redline 3rd Edition of SV5.

Mr. Graf had updated the WG2 redline version of SV5 presented at WG2-19 in accordance with that meeting's decisions and it made available in soft copy to this meeting (WP5). The updates were:

- editorials raised at WG2-19,
- US comments about references to SV1
- the descriptor of the S/T flag of the SNDCF header
- the solution of PDR 99070005 was included
- PDR 99100005 re ATSC class
- NB - the solution of PDR 99090002 was included in a separate file and this could be used if the solution was adopted.

Mr. Graf presented WP7, "Change Control Log for 3rd Edition of SV5", which lists all the changes made to Draft Edition 3 of SV5. The changes are indexed by paragraph/change type/enhancement number and also by enhancement number/affected paragraphs. This document clearly indicates all the changes in this redline version and which enhancement or PDR has caused each change.

4 ICS Enhancements

4.1 ICS3-02

Requirement for IS-SME to respect quarantine time before processing next Join event from mobile subnetworks having issued a Leave event (IDG Work Item 2).

Mr. Cardwell presented WP6, “Draft SARPs for Join/Leave Event Churn” which addressed the changes discussed at WG2-19. After discussion it was confirmed that hand-off events were indicated differently and would not be affected by the proposed quarantining of Join Events. The general concept discussed at IDG2 and Gran Canaria remained unchanged but a clearer way of expressing that concept in SARPs text was proposed. After a re-write or two, WP6 was accepted and, with further minor modifications, will be incorporated into the redlined SV5 Ed. 3.

4.2 ICS3-06

Requirements for enhanced IDRP security consistent with the ATN Security architecture (IDG Work Item 10)

Mr. McParland presented WP17, "Proposed SARPs text to enable security ". There was discussion about which parameters should be TLV and which can be fields. After a minor re-write, the WP was agreed and the text will be incorporated into the redlined SV5 Ed. 3.

There are a few outstanding IOUs, which would be addressed in the Security Sub-Group meeting the following week. They were: identification of octet boundaries in the figures, the format of the Certificate Path Parameter, checking references, and consistency of field labels/names. Mr. McParland would inform Mr. Graf of the outcome of those discussions by 12th November.

ACTION IDG3-1

4.3 ICS3-08

Suppression of re-advertisement of routes in the case of changing mobile subnetwork connectivity (IDG Work Item 14)

There was no further comment on the changes proposed at IDG2 and so this enhancement was closed.

4.4 ICS3-09

Conveyance of data link capability parameter in air/ground ISH PDU exchanges to signal protocol capabilities which are beyond 1st edition Doc 9705 between air/ground and airborne routers in a backwards compatible manner (IDG Work Items 2, 15, 17)

Mr. Graf presented WP15, "ATN Parameters in ISO/IEC 9542 ISH PDUs", which identified the extra parameter fields that were being introduced in Edition 3. After a lengthy discussion the IDG concluded that the ATN Datalink Capabilities Parameter and the ATN Authentication Parameter should be merged into a single parameter, with a new descriptor, with bits allocated to provide the functionality of the bits utilised in the two deleted parameters. Mr. Graf would re-work the draft SARPs to accomplish this task and of course the Change Control Log would be updated to identify the changes made.

ACTION IDG3-2

4.5 ICS3-11

Modification of the TP4 Local Acknowledgement Timer, A

There was no further comment on the changes proposed at IDG2 and so this enhancement was closed.

4.6 ICS3-12

Potential amendment of existing mobile SNDCF and/or development of additional mobile SNDCFs to include new subnetwork types (IDG Work Item 7)

Mr. Whyman presented WP14, "A New Mobile SNDCF for 2nd Generation Air/Ground Datalinks". This version of the paper was an update of the WP13 presented to IDG2. It was fairly complete but there was still some work in progress. Essentially the paper presents a new streamlined packet level protocol to run over the frame mode

There is more work to be done, but the concept was endorsed by the IDG. There are administrative problems however: the concept cannot be prepared as draft SARPs before the Tokyo WGW meeting and obviously no validation is underway. The group consensus was that a separate WG2 paper should be submitted to the Panel Meeting that explains the need for and the concept of this new SNDCF. Further the paper should indicate that SARPs are being drafted, that this requires coordination with AMCP hence the delay, that validation will be undertaken prior to the post-ATNP/3 WGW meeting and that should that validation be satisfactory, then the SARPs would be included in Edition 3 of Doc 9705. Mr. Whyman would re-work WP14 to provide the basis of this paper for the WG2 meeting in Tokyo.

ACTION IDG3-3

It was once again necessary to inform AMCP about the progress and intent of ATNP WG2 regarding Frame Mode SNDCFs. Mr. Jones prepared Flimsy #1 as the basis of a communiqué to AMCP explaining the further progress of ATNP on this matter. The communiqué page will be a cover page for the more substantial paper Mr. Whyman will complete under action IDG3-3. Mr. Jones will present this Flimsy to WG2-20, subject to WG2 approval, forward it to the WGW meeting.

ACTION IDG3-4

As the Frame Mode SNDCF had included an LREF mechanism, Mr. Tamalet presented WP10, "A very simple and efficient alternative to LREF mechanism". This paper identified where LREF added compression benefits and how these can be gained without the need for LREF (i.e. by re-ordering the packet header fields and letting DEFLATE do the compression). The IDG agreed the proposal had merits, but that it was beyond to scope of the current IDG work items. Instead, when WP14 is re-worked, some elements of this WP10 will be incorporated as well as a header checksum.

ACTION IDG3-5

At IDG2, a related subject was raised under this enhancement which was referred to as "Make before Break". There were no further inputs proposing ideas/solutions to this problem, but Mr. Whyman made WP18, "The Issue of Make Before Break", from the AEEC Datalink Systems

Sub-committee available for further information. No IDG action was required, but WG2 should track the discussion of the AEEC DLK S/C on this subject. Mr. Whyman would forward further AEEC -mails on this subject to the IDG members in the lead up to WG2-20.

ACTION IDG3-6

Mr. Tamalet presented WP12, "Alternative backup solution to the VDL Mode 2 Leave Event Latency problem". The purpose of this paper was to document an alternative solution to the leave event latency problem which could be considered it AMCP are unable to improve the timeliness of VDL mode 2 leave event generation. The proposal is to use any other a/g sub-network in existence at the time that the VDL Mode 2 SN is lost to carry an out-of-band IS-SME message exchange to notify the ground that VDL Mode 2 connectivity has ceased. This is only possible when another SN exists, but this is exactly the time that timely generation of leave events is important. No further action will be taken with this idea, but it can be re-considered if AMCP are unable to resolve the VDL mode 2 problems directly.

Also related to Leave Event Latency, the IDG considered Table 5.2-2 which lists the transit delays and leave event latencies required for the various ATSC classes. It was noted the Class G required 300 sec. and Class H 600 seconds. There is no class assigned for leave event latencies of >600 seconds. It was decided the Class H should be changed to >300 sec. This change will be included in the redline version of SV5 Ed. 3 that will be presented at WG2-20 in Tokyo.

4.7 ICS3-13

Potential enhancements to the DEFLATE algorithm to allow for the dynamic negotiation for the use of pre-stored dictionaries (part of IDG Work Item 12).

Was considered with ICS3-14. See below.

4.8 ICS3-14

Potential additional mobile SNDCF option to allow maintenance of DEFLATE history window when changing ground stations or air/ground routers respectively (part of IDG Work Item 12)

Mr. Graf presented WP8, "Proposed SARPs text for PDR 99090002" which addressed the need for an SNDCF header extension field to flag extended capabilities. The solution proposed was backward compatible. If a version 2 router requests version 2 from a version 1 router then the request will be cleared. A second attempt would then be made requesting version 1 that a version 1 router could accept. It was noted that a version 2 router need not always request version 2 in its initial request, especially if there is a low probability of finding another version 2 router, so it does always mean that two call attempts will be required.
Alternatives were discussed, but it was concluded that a version roll was the cleanest way of implementing this PDR solution. Mr. Jones would update WG2's backward compatibility statement to reflect this version roll and will submit that paper to the Tokyo WG1 meeting.

ACTION IDG3-7

After inclusion of some minor modifications, Mr. Graf will issue this proposed solution to the WG2 SDM list for consideration.

ACTION IDG3-8

Mr. Tamalet presented WP11, "Enhancements to the ISO 8208 mobile SNDCFs", which proposed SARPs for identification and use of pre-stored dictionaries. The SARPs text was accepted and the IDG decided that it would be better to re-load the pre-stored dictionary rather than void the compression windows after reset. Also a note would be added to indicate the risk of loss of data communication is a pre-stored dictionary contains a corruption. The proposed changes were re-presented as Flimsy #2 and these were accepted. The text of WP11, as modified by Flimsy #2, will be incorporate into the redlined SV5 Ed. 3.

4.9 ICS3-15

Potential use of additional security tags to introduce new routing capabilities in a backward compatible manner (IDG Work Item 17)

PDR 99100005 had been generated to address this enhancement and the subject is discussed under that PDR.

5 Review of current SV5 PDRs

PDRs 99070001, 99070005 and 99090001 had been progressed through the CCB and the agreed solutions were already included in the redlined draft SV5 Ed. 3 presented to this meeting.

PDR 99090002 had been discussed earlier in the meeting (see para. 4.8) and the way forward had been agreed by the IDG.

Mr. Graf presented WP9, "New SV5 PDRs", which included three new PDRs.

PDR99100003, "LREF compression and CLNP Echo NPDUs", highlighted that two ATN router implementations had taken different action to process CLNP ECHO REQUESTs when forwarded over an A/G link using LREF compression. One of the implementations had now been changed, but the SARPs need tidying up. The proposed solution was thought to be the best solution and the PDR was expected to progress through the SDM and CCB to be included in the SV5 draft SARPs presented at WGW/3 in Tokyo.

PDR99100004, "ISO/IEC 8208 Non-standard Default Packet Size Facility", raised an issue that the SARPs were overly restrictive. A proposed change was agreed in the meeting and would be submitted to the SDM and CCB for approval. It was expected that the changes would be included in the SV5 draft SARPs presented at WGW/3 in Tokyo.

PDR99100005, "Reservation of Unassigned/Undefined Values", was a PDR arising from an action on the Editor in WG2-19. The IDG agreed that there were further similar changes that could be made throughout SV5, but that only the changes identified on the PDR should be processed now. It was expected that the changes would be included in the SV5 draft SARPs presented at WGW/3 in Tokyo.

Mr. Tamalet presented WP16, "Potential PDR" which discussed use of multiple A/G VCs at the same priority level between a pair of DTEs. The IDG discussed this at length and the conclusion was that because of a/g bandwidth limitations it is not a good idea to have multiple VCs at the

same priority except during hand-off between ground stations. As a result it was decided that the material provided should not be put forward as a PDR.

6 XMIB Review

Mr. Tamalet presented WP13, "Overview of the XMIB content for review by ATN ICS experts" for information. The GDMO material for the MOs has been compiled and will be incorporated into SV6 at the System Management meeting follows this IDG meeting. The only controversial item was whether it was really necessary to be able to initiate echo requests in a remote domain. It was concluded that whilst it may be more functionality than is absolutely required, it does provide an additional, valuable debugging tool. It was expected that this subject would be discussed again in WG2-20.

7 Guidance Material for ICS Enhancements and PDRs.

The IDG did not have time to compile proposed changes to the SV5 GM, instead a record of the sources of suitable GM was maintained by Mr. Graf. A short WP will be presented to the WG2-20 meeting that reports this fact and provides this list of suitable GM source material.

ACTION IDG3-9

8 Validation of ICS Enhancements and PDRs.

No material was presented under this agenda item. It was noted that Christine Ricci of STNA was the editor of the ICS Validation Report and that all validation activities should be notified to her.

9 IDG input to WG2-20, Tokyo

To main actions arose from this meeting. First, Mr. Graf will update the redlined SV5 Ed. 3 and issue it via the CENA server two weeks before the Tokyo WG2 meeting.

ACTION IDG3-10

Second, Mr. Cardwell will prepare a summary paper that indicates how each of the work items delegated from WG2 has been discharged.

ACTION IDG3-11

10 Action Items

An action item list was prepared, referenced against each ICS SARPs Enhancement number (cross-referenced to work programme item) as necessary, and is included as attachment 3 to this report.

11 AOB

There was no AOB.

ATTACHMENT 1

IDG Third Meeting
Gatwick, UK
03-05 November 1999

1 Approval of the agenda

2 Collection of working papers

3 Review of the IDG2 report, WG2-19 Report and an IDG Status Report.

4 Report current status of redline 3rd Ed. of SV5

5 ICS Enhancements
- 5.1 ICS3-02
- 5.2 ICS3-06
- 5.3 ICS3-08
- 5.4 ICS3-09
- 5.5 ICS3-11
- 5.6 ICS3-12
- 5.7 ICS3-13/14
- 5.8 ICS3-15

6 Review of current SV5 PDRs
- 6.1 PDR99070001
- 6.2 PDR99070005
- 6.3 PDR99090001
- 6.4 PDR99090002
- 6.5 PDR99100003
- 6.6 PDR99100004
- 6.7 PDR99100005

7 XMIB Review

8 Guidance Material for ICS Enhancements and PDRs

9 Validation of ICS Enhancements and PDRs

10 Input to WG2-20, Tokyo

11 Action Items

12 Any other business

ATTACHMENT 2

ATNP WG2 IDG 3rd Meeting
03-05 November 1999
Gatwick, UK

LIST OF WORKING PAPERS

WP No.	Agenda Item	Presenter	WP Title
1	1	B. Cardwell	Proposed Agenda
2	3	B. Cardwell	WG2 IDG Meeting 2 Report
3	3	R. Jones	WG2-19 (Gran Canaria) Report
4	3	B. Cardwell	IDG Status report
5	4	K-P Graf	Draft 3rd Edition of Sub-Volume 5
6	5.1	B. Cardwell	Draft SARPs for Join/Leave Event Churn (Enhancement ICS3-02)
7	4	K-P Graf	Change Control Log for 3rd Edition of Sub-Volume 5
8	5.6 / 6.4	K-P Graf	Proposed SARPs text for PDR 99090002
9	6	K-P Graf	New Sub-Volume 5 PDRs
10	5.6	S. Tamalet	A very simple and efficient alternative to the LREF mechanism
11	5.6	S. Tamalet	Enhancements to the ISO 8208 mobile SNDCFs
12	5.5	S. Tamalet	Alternative backup solution to the VDL Mode 2 Leave Event Latency problem
13	7	S. Tamalet	Overview of the XMIB content for review by the ATN ICS experts
14	5.5	J. Moulton	A new mobile SNDCF for 2nd Generation Air/Ground datalinks
15	5	K-P Graf	ATN Parameters in ISO/IEC 9542 ISH PDUs
16	6	S. Tamalet	Potential PDRs
17	5.2	T. McParland	Proposed SARPs text for ICS security provisions
IP 18	IP	C/o AEEC	The Issue of Make Before Break
Flimsy No.			
1		R. Jones	Communiqué to AMCP re Frame Mode SNDCF
2		S. Tamalet	Re-worked sections of WP11

ATTACHMENT 3

Action Items

	Action	Reference	Who	When
IDG3-1	Conclude Security text development and checking, and report to Mr. Graf	Para 4.2	T. McParland	12/11/99
IDG3-2	Re-edit ATN Datalink Capabilities and ATN Authentication Parameters into a single parameter	Para 4.4	K-P. Graf	19/11/99
IDG3-3	Re-work Frame Mode SNDCF Paper and issue to Tokyo WG2 meeting	Para 4.6	T. Whyman	26/11/99
IDG3-4	Issue Flimsy #1 and present to WG2 as covering communiqué to AMCP	Para 4.6	R. Jones	26/11/99
IDG3-5	Include relevant material from WP10 into the re-work of WP14	Para 4.6	T. Whyman	26/11/99
IDG3-6	Track and forward AEEC Make Before Break discussions	Para 4.6	T. Whyman	03/12/99
IDG3-7	Update and re-issue WG2's backward compatibility statement	Para 4.8	R. Jones	03/12/99
IDG3-8	Issue PDR99090002 solution to SDM for comment/progression	Para 4.8	K-P. Graf	Asap
IDG3-9	Prepare summary statement of SV5 Guidance Material sources	Para 7	K-P. Graf	03/12/99
IDG3-10	Re-issue redline SV5 draft Ed. 3 and Change Control Log	Para 9	K-P. Graf	19/11/99
IDG3-11	Prepare IDG summary paper for WG2-20	Para 9	B. Cardwell	26/11/99