

**Official Meeting Minutes**  
**AD HOC Meeting- ACARS to VDL Transition**  
**AEEC DataLink Systems Subcommittee**  
**March 17 to March 19, 1998**  
**RTCA Offices, Washington, D.C.**

**Note 1:** Attendance List : See attached

**Note 2:** Updates to ARINC documents 631 and 637 discussed in this meeting are due to ARINC, [rnelsen@arinc.com](mailto:rnelsen@arinc.com), by April 8, 1998.

**Note 3:** ARINC will distribute updates to 631 and 637, received by April 8, on April 13.

**Note 4:** Interim architecture for air/ground communications system which is being discuss by this subcommittee has been officially named "ATN Package 1" or "ATN-1".

**March 17, 1998 (Tuesday)**

- Alope Roy (ARINC) presents interim datalink solution for an ACARS transition to VDL and ATN environment. Alope's handout is included electronically with the distribution of these minutes.
- Concern raised by Philip Clinch (SITA) about common interface to VDL should be similar to HF datalink and SATCOM.
- Discussion of need for modifications to ARINC 631
- Switching between VHF modes between ACARS subnetwork and VDL Mode 2 subnetwork should be in 631.
- Aeronautical Communication International LLC (ACI) presents a proposal of ACARS transition to bit oriented ICAO datalinks. This presentation introduced the now called "ATN-1" solution. Presented by Tony Whyman (EUROCONTROL) and Forest Collier (ACI).
- Philip Clinch (SITA) presents opposition to ATN-1 for use to support legacy ACARS applications as discussed in ACI's presentation. Philip favors an X.25 (ISO 8208) only solution.
- Boeing/CNS ATM Focus Team (C-AFT) has endorsed ATN solution. (Alope Roy).
- Eurocontrol also favors ATN solution
- Honeywell/Sofreavia noted that the CLNP/TP4 was used successfully in ADS Europe Trials
- ACI discussed its commitment to ATN-1 Solution - Clayton Woods

ACI is developing a router for ATNS

ACI plan calls for development of a portable ATN protocol stack.

Industry access to ATN protocol software to all vendors by to allow implementation by early 2000

Refer to ACI presentation. Electronically included with this e-mail

- Discussion turns to the use of CLTP and TP4 transport protocols

TP4 will be required to support future implementation of ATN bit oriented applications.

Group felt it is acceptable to use CLTP for a transport protocol over CLNP when supporting ACARS character oriented applications.

- The group recognized more information about HF datalink logical routing is required to understand how ACARS messages are currently switched/routed between network service.
- Meeting discussion turns to mapping functionality to ARINC documents. Following lists the new functionality and which document to place it in:

1) Switching VHF modes

Squitter, Media Advisory Message

Format of Squitter stays in 620

Use of squitter goes into 631

Media Advisory goes in 631

2) ACARS application interface to Comm Services. (ARINC 620)

Fix overlap between ARINC 620 and 618

Want to make 620 just reflect application interface to network

3) Use of multiple subnets.

Squitter, Media Advisory Messages.

ARINC 620, 631

4) Emulation of 618 Service. (ARINC 637))

Called "ACARS to ATN convergence function"

5) Definitions of Protocol Profiles

ARINC 637

ARINC 631

- Following is a document outline for ARINC 637 and a list of members assigned complete drafts for these sections by next Datalink System Subcommittee in April.
- ARINC will compile all updates to the following document

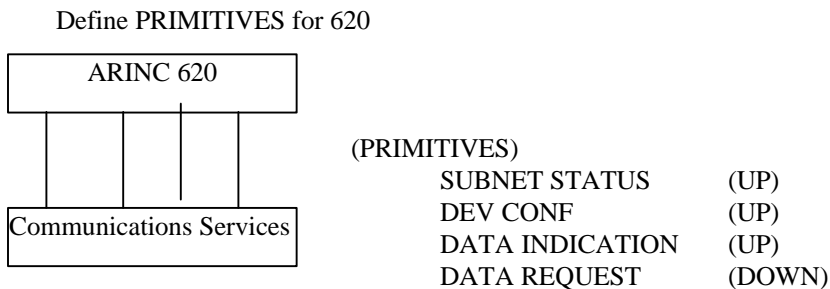
ARINC 637	ARINC
ARINC 631	ARINC
ARINC 620	SITA
ARINC 618	SITA
- Updates are due to ARINC by April 8, 1998
- ARINC will compile and distribute updated documents by April 13.
- Group agrees that the content of ARINC 637 is out of date and can be completely replaced. Following is an new outline for ARINC 637 and members assigned to fill in the sections in the outline :

**PRELIMINARY OUTLINE FOR ARINC 637**

1.0	Introduction	ARINC
1.1	Scope	
1.2	Background	
2.0	Architecture	
2.1	ATN-1 (note : better wording)	ACI (diagram only) ARINC (word)
2.2	ACARS to ATN convergence function	Tony Whyman Eurocontrol
3.0	Sub-net selection	Eurocontrol
4.0	ATN Addressing Converting NSAP to Tail Num	Eurocontrol
5.0	Routing over network services.	Eurcontrol/ARINC
6.0	Access to subnetwork management information	AlliedSignal
7.0	Protocol Options/Profiles CLTP CLNP Mobile SNDCF ES/IS X.25	ACI (Forest Colliver)

**March 18, 1998 (Wednesday)**

- Philip presents his plan for modification to ARINC 620 document. See handout prepared by Philip Clinch “*Modification of AEEC Specification 620 to facilitate ACARS use of ATN and VDL*”
- Agreement : Goal is to make 620 a stand-alone user of datalink services.
- Agreement : ARINC 618 should look like subnetwork service and ARINC 620 should specify ACARS message protocol
- The following is an attempt to specify the basic primitive that will be needed to make ARINC 620 a stand-alone document.



**DATA REQUEST (primitive)**

MESSAGE IDENTIFICATION

-LABEL

-SUB-LABEL

SOURCE/DESTINATION NSAP ADDRESS

TRANSACTION # (Data Request Only)

ACARS DATA

QOS

Sub-network selector (i.e., VHF, AMSS, HF DL, IRIDIUM, General)

An ordered list is used today and should be.

Priority

**DATA INDICATION (primitive)**

MESSAGE IDENTIFICATION

-LABEL

-SUB-LABEL

ACARS DATA

QOS

Sub-network used

Priority

**DATA DELIVERY CONFIRMATION (primitive)**

-MESSAGE IDENTIFICATION

-TRANSACTION NUMBER

-DELIVERY STATUS

Network Used

Success/Failure Cause Code

Failure Cause Codes to be provided by Tom MCGuffin (AlliedSignal)

**NETWORK STATUS (primitive)**

Net Id

Status

Net Id

Status

n'-times, once for each installed network

- Action Items discussed at meeting
  - 1) Text changes to 620 and 618 will be accomplished by. -- SITA Jocelyn Descaillot
  - 2) Choosing a service provider or service. ATC would choose service/provider differently that AOC's would. **Mike Russo will provide commentary for this.**
  - 3) Review of PICs from ATNSI protocols PICs to be done by the group 3 weeks from today.
    - a) Comments due to ACI March 31 (send email to Forest Collier)
    - b) April 8 at 11am Eastern Time Teleconference
    - c) ARINC will distribute PICs in ARINC 637 by April 13.

4) ACI said that they will do the PICs for CLTP as well. Due to ARINC by March 27

- The group agreed that more information regarding the ATN-1 architecture should be added to ARINC 631. The following are the modifications to ARINC 631

### **ADDITIONAL SECTIONS FOR ARINC 631**

#### **ACARS vs VDLM2 selection**

Announcement of VDLM2 Services	ARINC / SITA
Criteria	
Procedure	

#### **Protocol Switchover**

Aircraft Initiated  
Criteria  
Procedure

Ground Initiated ACARS to VDL command message (optional)  
Criteria  
Procedures

Fall back to ACARS service  
Criteria  
Procedures

### **March 19, 1998 (Thursday)**

- Discussion of modification to ARINC 750 VHF Data Radio. No action needed at present
- Group suggested that we come up with a name for the “ATN Lite” Solution.

ATN PACKAGE 1 or “ATN-1”

- Agreement to point to Table 6-53 and 6-54 from VDL SARPs in ARINC 631 rather than putting that information in the ARINC 631.
- Table 6-52 from VDL SARPs. Accept the timer values as is. No action.
- Link Parameter Negotiation TABLE 6-51. Action Item to Allied Signal (TOLI)
- Section 6.5.4.4.1.2 Link Connectivity Procedures
  - a) Ground Station Identification YES
  - b) Initial Link Establishment YES
  - c) Link Parameter Modification YES
  - d) Aircraft-initiated handoff YES
  - e) Aircraft requested ground based initiated handoff OPTIONAL
  - f) Ground based initiated handoff YES

- g) Ground based requested aircraft initiated handoff OPTIONAL
- h) Ground based requested broadcast requested broadcast handoff OPTIONAL
- i) Autotune YES

- During the AVLC connection establishment procedures the optional items from above will be conveyed
- Test Frame capability mandatory. See table 6-9 VDL SARPs
- Administration of CLNP Address's - Mike Murphy (ATNSI) will resolve with airlines and CAAs
- Compression implemented for Mobile SND CF = LREF, STREAM.