EDL Frame Format and Meta Signalling

Richard Black

24th February 1992

1 Introduction

This document describes the Frame format and Meta Signalling for networks which use Ethernet Data Link (EDL) as the instance of MSDL.

This document describes the third iteration of this protocol which is used within both Wanda and Unix.

This document attempts to describe the many bizarre features present and may not be entirely correct. This protocol is due a tidy!

2 Frame format

Each frame contains between one and forty four cells which must all be for the same association. For each cell two octets of FAS are carried.

2.1 Frame header

The frame carries the required ethernet source and destination addresses, and an ethernet protocol identifier of 0x6660[1] This information is followed by a two octet field which together with the destination ethernet address form the VCI of the frame. This two octet field is called the "associd".

For historical reasons only ten bits of the two octet field are significant. They are all eight bits of the first octet and bits six and seven of the second octet. The other six bits of the second octet should be set to zero.

The frame header is displayed in table 1.

Octet	7	6	5	4	3	2	1	0
0-5	Destination							
6-11	Source							
12	0	1	1	0	0	1	1	0
13	0	1	1	0	0	0	0	0
14	associd							
15	associd		0	0	0	0	0	0

Table 1: FDL Frame Header

[1] Network endian.

2.2 Frame control information

The frame header is followed by a frame control structure. It consists of one octet which contains the number of cells in the frame. This has a value in the range one to forty four. This octet is followed by a reserved octet which has value zero. These fields are followed by forty four pairs of octets which contain the FAS for each of the forty four cells in the frame. Note that these fields are always present even for a frame of less that forty four cells. For cells which are not present the FAS octets may contain any value. The *de facto* standard FAS for EDL Cells present is a variant of SAR1 where the part-full bit is never used. Consult the SAR document for details.

2.3 Payload

The payload contains between one and forty four cells of thirty two octets each.

3 Meta signalling

3.1 VCI thereof

The associd field is set to all ones. The ethernet destination address may be set to the hardware broadcast address if it is not otherwise known.

3.2 Frame control information thereof

Although conveying absolutely no semantic information these fields are all present and contain the expected values.

3.3 EDL Meta Signalling data.

The payload contains a single cell. The format adopted is as displayed in table 2. Unfortunately some endian assumptions are made by this structure. Such fields have "network endian".

Octet	Field	Description
0-1	Arptype	A 15 bit value. Bit 15 should be ignored.[2]
2-3	Prottype	A 16 bit field with value always 1
4,5	OrigVCI	The originator's munged associd
6,7	RespVCI	The responder's munged associd
8,9	Useless	Present for no good reason.[3] Value 0
10-15	Argument	Appropriate argument to the Arptype eg. QoS
16-19	OrigAddr	Four octets of the originator's local address
20-23	OrigPort	Four octets of the originator's port
24-27	RespAddr	Four octets of the responder's local address
27-31	RespPort	Four octets of the responder's port

Table 2: FDL Meta Signalling Cell format

The communicating entities construct the VCIs from the associds in this structure and the ethernet addresses present in the frame header which carried this structure. Unfortunately there is an additional munging which must take place between that used in the control structure and that which must be present in the frame header.

Octet	7	6	5	4	3	2	1	0
0	J	I	H	G	F	E	D	C
1	B	A	0	0	0	0	0	0

Table 3: Associd present in Frame Header

Octet	7	6	5	4	3	2	1	0
0	0	0	0	0	0	0	J	I
1	H	G	F	E	D	C	B	A

Table 4: Associd present in Control Structure

There is no justification for this perversity.

3.4 Meta Signalling Commands

The meta signalling commands used on EDL are identical to those used by all other current implementations of MSDL. They are therefore described in that generic document.