Framing and Sequencing

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14th August 1991, 26th February 1992
4th February 1993

1 Introduction

The purpose of this document is to describe the changes made to SAR due to the meeting of 14th August 1991. Note should be taken that throughout this document octet numbering is with reference to the FAS fields. For information on the positioning of the FAS fields within a cell or block please consult the EDL, MDL or FDL documentation as appropriate.

2 Framing and Sequencing

The FAS, otherwise known as user control information has two purposes. One purpose is to indicate framing information to allow for optimisations at a lower level for example when blocking cells together or when interrupting a host. There are two bits of this framing information. Bit 7 of the second octet is defined to be set on the first cell of a block. Bit 6 of the second octet is defined to be set on the last cell of a block.

The other six bits in the second octet and all of the first octet are available for use as sequencing, which is described here.

The format of FAS is:

Octet	7	6	5	4	3	2	1	0
0	FAS							
1	fs	fe	FAS					

Where "fs" is the frame start bit and "fe" is the frame end bit.

3 SAR1

The currently used SAR1 has the following definition.

Octet	7	6	5	4	3	2	1	0	Description
0	sequence								Number of cells remaining.
1	st	pf	assemble						Flags, increasing counter

Where "st" is set on the first cell of a block and "pf" indicates that the cell is partly full, which may only happen on the last cell of a block.

This is the UDL SAR used on Unison. The cell sequence number will count down from a maximum value in the first cell of a block, to 1 in the last cell. Thus the sequence number in the first cell of a block is the expected cell count, and indicates the block size.

The assemble field starts at zero when a circuit is opened and is incremented (modulo 64) after each block is transmitted.

Unfortunately this is not compatible with FAS.

Note that on EDL networks the part-full bit should never be set.

Note also that on EDL networks the two octets of the sar are sent in reverse order. This is for the historical reason that the network does not have hardware imposed endian swap on the header.

4 SAR1a

SAR1a is an instance of MSSAR which is as similar to SAR1 as possible but which is compliant with FAS.

SAR1a has the following definition.

Octet	7	6	5	4	3	2	1	0	Description
0	sequence								Number of cells remaining.
1	fs	fe	assemble						Framing, increasing counter

Where “fs” is the frame start bit and “fe” is the frame end bit.