To: INCITS T10 Committee

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Subject: ADC-2 Primary port index

1 Revision History

Revision 0:
Initial revision posted to the T10 web site on 30 March 2007.

Revision 1:
Minor editorial change requested by the ADI working group.

2 Reference

T10/ADC-2 revision 7c
T10/06-475, ADC-2 Letter Ballot Comments Resolution

3 General

Several letter ballots comments against ADC-2 pointed out problems relating to the use of the field name RELATIVE TARGET PORT in the DT Device Primary Port descriptor as it relates to the term “relative target port identifier” defined in SAM-3. The following letter ballot comments are addressed directly by this proposal:

1. Dell-118, “change "RELATIVE TARGET PORT" to "RELATIVE TARGET PORT IDENTIFER" if you are going to reference SPC-3”.
2. Dell-120, “change "RELATIVE TARGET PORT field" to "RELATIVE TARGET PORT IDENTIFIER field"”.
3. HPQ-248, “RELATIVE TARGET PORT field. SCSI architecture defines a two-byte relative target port value, not one-byte. ADC ought to avoid imposing artificial restrictions. I suggest increasing this to two bytes (make the header 8 bytes long)”.

The following letter ballot comments are addressed indirectly by this proposal:

1. QTM-123, “The reference to SPC-3 is for what? None of the terms appear in SPC-3. The closest is relative target port, but SPC-3 has a relative target port identifier (which is a two-byte field)”.
2. HPQ-208, “The PARAMETER CODE numbering rules imply that relative ports must be numbered from 01h to FFh. SCSI architecture defines the relative port identifier as being 2 bytes long, however. ADC ought to avoid placing artificial restrictions. The full range could be accommodated by defining a new page (subpage format is fine) just for DT Device Status, and letting the parameter code be equal to the relative port identifier.”

The ADI working group has already agreed to reject HPQ-208 because it would not be compatible with existing implementations. During the discussion the point was raised that support for a single DT device supporting more than 255 ports is not a reasonable goal. Using this as a guideline would lead us to reject HPQ-248 also, however, taken together with Dell-118 and Dell-120 there is indication that confusion exists with regards to this field that we need to fix in ADC-2.

These comments indicate there is a possibility of an inferred relationship between the “relative target port” value and the “relative target port identifier” defined by SAM-3 which may be alleviated by removing the reference to SAM-3 per QTM-123, but then again may not.

This proposal attempts to further disassociate the two terms by changing the name of the field to PRIMARY PORT INDEX and introducing a model clause that describes how a DT device assigns and uses primary port indexes.

4 Changes to ADC-2

4.1 Modifications to model clause 4.9

4.9 DT device primary ports

4.9.1 DT device primary port index

The DT device shall assign a primary port index value that uniquely identifies the DT device primary port relative to other DT device primary ports in the DT device, independent of DT device primary port type. Once assigned, the primary port index value for a DT device primary port shall not be changed as long as the DT device primary port remains on the DT device. A value of 00h is reserved. The primary port index value assigned to a DT device primary port may or may not be the same as the relative target port identifier (see SPC-3) assigned to the port.

4.9.2 Enabling and disabling DT device primary ports

A DT device shall allow the DT device primary port(s) to be disabled and enabled via MODE SELECT commands (see SPC-3) to the ADC device server that modify the ADC Device Server Configuration mode page (see 6.2.2).

When in the disabled state, the DT device primary port shall not accept commands or task management functions and shall not respond to transport-level actions (e.g., SCSI Bus Reset, Fibre Channel Loop Initialization, or Loop Port Enable primitives).

The disabling of a DT device primary port shall be treated as an I_T nexus loss event for any existing I_T nexus associated with the disabled DT device primary port, as specified in SAM-3. If the command disabling a DT device primary port is received through the DT device primary port being disabled, then the ADC device server shall return command completion status before disabling the DT device primary port.

4.2 Modifications to LOG parameters clause 6.1.2.4.1

6.1.2.4 DT device primary port status log parameter(s)

6.1.2.4.1 DT device primary port status log parameter(s) overview

The DT device primary port status log parameter(s) format is shown in table 20.

Table 20 – DT device primary port status log parameter(s) format

Bit / Byte	7	6	5	4	3	2	1	0
0	(MSB)			PARAMETER CODE				
1								(LSB)
2	DU (0)	DS (1)	TS (0)	ETC (0)	TMC (00)		LBIN (1)	LP (1)
3	PARAMETER LENGTH (n-3)							
4				DT device primary port status data				
n								

The PARAMETER CODE field ~~contains a value from 0101h to 0200h, as assigned by the DT device, that uniquely identifies the DT device primary port relative to other DT device primary ports in the DT device, independent of port type. Once assigned, the parameter code value for a DT device primary port shall not~~

~~be changed as long as the DT device primary port remains on the DT device. For each DT device primary port, the parameter code value shall be equal to 0100h plus the value of the RELATIVE TARGET PORT field associated with that DT device primary port (see 6.2.2.2.2).~~ shall be set to the value of the primary port index for the port (see 4.9.1) plus 0100h.

See SPC-3 for descriptions of the DU bit, DS bit, TSD bit, ETC bit, TMC field, LBIN bit, and LP bit. These bits and fields shall be set to the values shown in table 20.

The PARAMETER LENGTH field contains the length in bytes of DT device primary port status data that follows.

~~The DT device primary port status data is described in this subclause.~~ The DT device primary port status data is determined by the protocol of the port with which the parameter is associated. The protocol for each port is reported in the PROTOCOL IDENTIFIER field in the DT Device Primary Port mode subpage (see 6.2.2.2) by ~~relative target port~~ primary port index value. Based on the reported protocol for each primary port ~~relative target port~~, the DT device primary port status data shall be determined by table 21.

Editor's note: the last sentence in the paragraph above does not read well and should be flipped around (i.e., The DT device primary port status…, based on the reported…)

4.3 Modifications to the mode parameters clause 6.2.2.2.2

6.2.2.2.2 DT device primary port descriptor format

The DT device primary port descriptor format is shown in table 37.

Table 37 – DT device primary port descriptor format

Bit / Byte	7	6	5	4	3	2	1	0
0	~~RELATIVE TARGET PORT~~ PRIMARY PORT INDEX							
1	Reserved				PROTOCOL IDENTIFIER			
2	(MSB)	ADDITIONAL DESCRIPTOR LENGTH (n-3)						
3								(LSB)
4		DT device primary port descriptor parameters						
n								

The ~~RELATIVE TARGET PORT~~ PRIMARY PORT INDEX field contains ~~a value~~ the primary port index (see 4.9.1) assigned by the DT device ~~that uniquely identifies the DT device primary port relative to other DT device primary ports in the DT device, independent of DT device primary port type (see SPC-3). Once assigned, the relative target port value for a DT device primary port shall not be changed as long as the DT device primary port remains on the DT device. A value of 00h is reserved.~~