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To: T10 Committee (SCSI)

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Subject: Flat Space Addressing Method

1 Overview

In rev 10 of SAM-2 the Virtual Device addressing method was removed and replaced with an undefined Device Type Specific addressing method. This change had the effect of removing the large (14 bit) LUN space from usage by all device types except for SCC devices. However, many other device types have large numbers of logical units and could benefit from a large flat address space. There following proposal defines the 01b address method to allow access up to 16,383 logical units. This definition is identical to that defined in SCC-2 so there are no compatibility issues.

2 SAM-2 section 4.12.3 table 6

Table 1 - ADDRESS METHOD

Codes	Description	Clause
10b	Logical unit addressing method	xxx
00b	Peripheral device addressing method	xxx
01b	~~Virtual device~~ Flat space addressing method	3.0.1
11b	Reserved	

3 New SAM-2 section 4.12.6

3.0.1 Flat Space Addressing Method

All SCSI commands are allowed when the flat space addressing method is used, however, the addressed logical unit is not required to support all SCSI commands. Any command that is not supported shall be terminated with a CHECK CONDITION status. The sense key shall be set to ILLEGAL REQUEST and the additional sense code shall be set to INVALID COMMAND OPERATION CODE.

In the response to an INQUIRY command the addressed logical unit shall return a valid SCSI peripheral device type.(e.g., direct access device, streaming device)

See table 2 for the definition of the ADDRESS METHOD SPECIFIC field used when the flat space addressing method is selected.

Table 2 - Flat space addressing

Bit Byte	7	6	5	4	3	2	1	0
n-1	0	1	(MSB)					
n	LUN							(LSB)

The LUN field indicates the address of the logical unit the current level shall direct the received command to.