memorandum

T10/05-310r1

To	From	Subject		Date
INCITS T10 Committee	Michael Banther, HP	ADC-2	Add Identification Descriptors to SMC Logical Unit Descriptor Format	9 August 2005

Revision History

Revision 0 – Initial document.

Revision 1 – Corrected value of ADDITIONAL DESCRIPTOR LENGTH field.

Background

At present a local SMC logical unit can acquire its identification descriptor(s) only by having the bridging manager request them from the remote SMC logical unit through an INQUIRY command for VPD page 83h. This method presents some difficulties:

a) The automation device may present multiple logical units to the bridging manager. How does the bridging manager know which one to use to obtain its identification descriptor(s)?

b) Nothing in the definition of remote SMC logical unit behavior requires it to respond to different bridging managers with different values of identification descriptor. If a remote SMC logical unit uses a constant value for an identification descriptor, then a configuration with multiple bridged DT devices may result in the same logical unit world-wide name appearing in different local SMC logical units within different DT devices. SAM-x clearly states that a logical unit exists within a SCSI device, i.e. the separate local SMC logical units cannot claim to be a single logical unit, so this situation represents a breakdown of world-wide uniqueness.

This proposal will request addition of an identification descriptor list to the SMC Logical Unit descriptor format. The identification descriptors will be limited to association equal to zero (logical unit identification descriptors).

Changes to draft standard

6.2.2.4.3 SMC logical unit descriptor format

The descriptor format for an SMC logical unit is defined in table 53.

Table 53 — SMC logical unit descriptor format

Byte \ Bit	7	6	5	4	3	2	1	0
0	LOGICAL UNIT INDEX							
1	DEVICE TYPE (08h)							
2	(MSB)							
3	ADDITIONAL DESCRIPTOR LENGTH (~~04h~~n-3)							(LSB)
4	LOGICAL UNIT NUMBER							
5								
6	MLUD	Reserved					CACHE	ENABLE
7	Reserved							
15								
	Identification descriptor list							
16	Identification descriptor (first)							
	.							
	.							
n	Identification descriptor (last)							

A CACHE bit set to one and the ENABLE bit set to one indicates that the local SMC device server shall cache SMC data and status (see 4.2.3.5). If the ADC device server receives a MODE SELECT command with parameter data of the ENABLE bit set to zero and the CACHE bit set to one, then the ADC device server shall return CHECK CONDITION status with the sense key set to ILLEGAL REQUEST and an additional sense code of INVALID FIELD IN PARAMETER LIST. A CACHE bit set to zero indicates that the local SMC device server shall not cache SMC data and status.

The modify logical unit descriptor (MLUD) field (see table x) modifies and reports modifications to the SMC logical unit's device identifiers.

Table x — MLUD field

Value	MODE SENSE command [a]	MODE SELECT command [a]
00b	The MLUD field shall be set to zero for a MODE SENSE command. The identification descriptors shall contain the currently assigned values.	Do not modify the SMC logical unit's device identifiers. The identification descriptors shall be ignored.
01b	Invalid value for a MODE SENSE command.	Reserved.
10b	Invalid value for a MODE SENSE command.	Set the SMC logical unit's device identifiers to the manufacturer's default values. The identification descriptors shall be ignored.
11b	Invalid value for a MODE SENSE command.	Set the SMC logical unit's device identifiers to the values in the identification descriptors.
[a] See SPC-3		

The identification descriptors are the same as those in the Device Identification VPD page (see SPC-3). Only identification descriptors with the ASSOCIATION field set to 0h shall be used. On MODE SELECT commands, if any identification descriptor contains an ASSOCIATION field set to a value other than 0h, then the ADC device server shall return CHECK CONDITION status, setting the sense key to ILLEGAL REQUEST and the additional sense code to INVALID FIELD IN PARAMETER LIST.