memorandum

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T10/06-477r1

| To | From | Subject | Date |
|---|---|---|---|
| INCITS T10 Committee | Michael Banther, HP | SMC-3 Command table and INQUIRY clean-up | 8 March 2007 |

**Revision History**

Revision 0 – Initial document.

Revision 1 – Updated with comments from the November 30, 2006 SMC-3 teleconference.

**Related Documents**

smc3r04 – SCSI Media Changer Commands - 3 revision 04

spc3r23 – SCSI Primary Commands - 3 revision 23

T10/04-313r1 – SPC-3: Mandatory REPORT LUNS Support

T10/05-074r1 – SPC-3 SPC-4 SES-2 SMC-3 Command requirements

**Overview**

The media changer portions of 05-074 have been languishing in the SMC-3 working group for some time. This proposal re-introduces the SMC-3 portions of 05-074 taking into account changes in SMC-3 since the writing of the original proposal.

1. SCSI Controller (SCC) commands (VOLUME SET, SPARE, REDUNDANCY GROUP, MAINTENANCE) are allowed on logical units with almost all peripheral device types, including independent medium changers (SMC), so the SCC commands need to be listed in the SMC-3 command table.
2. REPORT LUNS should be marked as mandatory in SMC-3 as requested by 04-313r1 and as noted in SPC-4 table D.2.
3. The new REPORT/SET PRIORITY and REPORT/SET TIMESTAMP commands should be optional for SMC-3.
4. Clearer rules are needed regarding how media changers set the MCHNGR bit in standard INQUIRY data for SPC-3 and earlier standards.

**Changes to draft standard**

## 5.1 Introduction

A media changer is a device server that returns 08h (i.e., medium changer) in the PERIPHERAL DEVICE TYPE field (see SPC-3) of the standard INQUIRY ~~command response~~ data.

Communication with a data transfer device may use the same service delivery subsystem as the media changer device, or a different SCSI service delivery subsystem. Data transfer devices that are not SCSI devices are also permitted. Multiple data transfer devices may be attached to a media changer.

If a data transfer device served by the media changer is a SCSI device, the data transfer device may be addressed on a SCSI service delivery subsystem though the same SCSI target port as the media changer but with a different LUN. The data transfer device may also be addressed through independent SCSI target ports and any LUN on the same or a different service delivery subsystem.

The READ ELEMENT STATUS command response data page for each data transfer element may provide the identity of the data transfer device serviced by a media changer device. This support is optional since a data transfer device is not required to be a SCSI device.

A media changer shall set the MCHNGR bit in the standard INQUIRY data to zero (see SPC-3).

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### 6.1 Summary of commands for media changers

**Table 3 – Commands for media changers**

| Command name | Operation code | Type | Reference |
|---|---|---|---|
| Editor's Note: Not showing all rows. | | | |
| LOG SENSE | 4Dh | O | SPC-3 |
| MAINTENANCE IN | A3h/00h – 04h [a]<br>A3h/06h – 09h | X [c] | SCC-2 |
| MAINTENANCE OUT | A4h/00h – 05h [a]<br>A4h/07h – 09h | X [c] | SCC-2 |
| MODE SELECT (6) | 15h | O | SPC-3 |
| RECEIVE DIAGNOSTIC RESULTS | 1Ch | O/M [b] | SPC-3 |
| REDUNDANCY GROUP IN | BAh | X [c] | SCC-2 |
| REDUNDANCY GROUP OUT | BBh | X [c] | SCC-2 |
| RELEASE(6) | 17h | O | SPC-2 |
| REPORT LUNS | A0h | ~~O~~ M [d] | SPC-3 |
| REPORT PRIORITY | A3h/0Eh [a] | O | SPC-3 |
| REPORT TARGET PORT GROUPS | A3h/0Ah [a] | O | SPC-3 |
| REPORT TIMESTAMP | A3h/0Fh [a] | O | SPC-3 |
| REQUEST VOLUME ELEMENT ADDRESS | B5h | O | 6.11 |
| SET DEVICE IDENTIFIER | A4h/06h [a] | O | SPC-3 |
| SET PRIORITY | A4h/0Eh [a] | O | SPC-3 |
| SET TARGET PORT GROUPS | A4h/0Ah [a] | O | SPC-3 |
| SET TIMESTAMP | A4h/0Fh [a] | O | SPC-3 |
| SPARE IN | BCh | X [c] | SCC-2 |
| SPARE OUT | BDh | X [c] | SCC-2 |
| TEST UNIT READY | 00h | M | SPC-3 |
| VOLUME SET IN | BEh | X [c] | SCC-2 |
| VOLUME SET OUT | BFh | X [c] | SCC-2 |
| WRITE ATTRIBUTE | 8Dh | O | 6.13 |
| WRITE BUFFER | 3Bh | O | SPC-3 |

Key: M = command implementation is mandatory.
O = command implementation is optional.
X = command implementation requirements detailed in reference.

[a] This command is defined by a combination of operation code and service action. The operation code value is shown preceding the slash and the service action value is shown after the slash.
[b] If the ENCSERV bit is set to one in the standard INQUIRY data (see SPC-3), the device server shall support this command. If the ENCSERV bit is set to zero, the device server may support this command.
[C] If the SCCS bit is set to one in the standard INQUIRY data (see SPC-3), SCC-2 specifies the requirements for the device server supporting this command. If the SCCS bit is set to zero, the device server shall not support this command.
[d] Only mandatory as specified in SPC-3.