TO: T10 Membership, SMC-3 Working Group
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DATE: June 13th, 2005
SUBJECT: SMC-3 REQUEST DATA TRANSFER ELEMENT INQUIRY command
(document T10/05-243r0)

Rev0 – Initial draft.

Introduction
This document proposes a change to SMC-3 that creates a new media changer command, REQUEST DATA TRANSFER ELEMENT INQUIRY.

Discussion
The purpose of this command is to provide a better method for an application client that is common to both a media changer and one or more data transfer devices contained within the media changer to correlate the data transfer devices to the media changer.

Current practice is for an application client to request identification descriptor information from the data transfer devices via INQUIRY, then request device identifiers for the data transfer elements from the media changer via READ ELEMENT STATUS. This technique has become problematic in the consistency of the returned data from both sources, coupled with no flexibility with respect to which device identifiers are to be used.

This proposal attempts to address the problem by defining a command that allows an application client to "tunnel" the same INQUIRY command to the data transfer device as it sends directly to the same device. With this method, the media changer returns the response data unmodified, allowing the application client to use any of the data to perform the correlation (or obtain additional information from the media changer regarding the data transfer devices it contains).

The command is defined such that only a single data transfer element INQUIRY can be requested per command. This is due to the anticipated processing time required for each request and the potential amount of data to return.

Proposed Changes to SMC-3

Changes to 6.1:
Table 3 has the following addition (the entire table is not reproduced here):

Command	Operation Code	Type	Reference
REQUEST DATA TRANSFER ELEMENT INQUIRY	A3h/06h [a]	O	6.11

Changes to 6.3:
Table 5 has the following addition (the entire table is not reproduced here):

REQUEST DATA TRANSFER ELEMENT INQUIRY	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed

New sub-clause 6.11:
(Note: existing subclauses 6.11 through 6.13 shift to become 6.12 through 6.14 with the addition of this new subclause)

6.11 REQUEST DATA TRANSFER ELEMENT INQUIRY command

The REQUEST DATA TRANSFER ELEMENT INQUIRY command (see table X) requests that the device server issue an INQUIRY command (see SPC-3) to the data transfer device at the specified element address and return the requested standard INQUIRY data (see SPC-3) or vital product data (see SPC-3) to the application client.

Table X — REQUEST DATA TRANSFER ELEMENT INQUIRY command

Bit Byte	7	6	5	4	3	2	1	0
0	OPERATION CODE (A3h)							
1	Reserved			SERVICE ACTION (06h)				
2	(MSB)							
3	DATA TRANSFER ELEMENT ADDRESS							(LSB)
4	Reserved							EVPD
5	PAGE CODE							
6	(MSB)							
9	ALLOCATION LENGTH							(LSB)
10	Reserved							
11	CONTROL							

See SPC-3 for a description of the OPERATION CODE byte and SERVICE ACTION field. This byte and field shall be set to the values shown in table X.

The DATA TRANSFER ELEMENT ADDRESS field specifies the data transfer element that is to be used in processing this command. If the address specified has not been assigned or has been assigned to an element other than a data transfer element, the device server shall return CHECK CONDITION status. The sense key shall be set to ILLEGAL REQUEST and the additional sense code shall be set to INVALID ELEMENT ADDRESS.

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If the DATA TRANSFER ELEMENT ADDRESS field specifies a data transfer element that has been disabled (see 6.10.4), the device server shall return CHECK CONDITION status. The sense key shall be set to ILLEGAL REQUEST and the additional sense code shall be set to ELEMENT DISABLED.

(Note: an ASC of ELEMENT DISABLED is not yet defined)

See SPC-3 for descriptions of the EVPD bit, PAGE CODE field, and ALLOCATION LENGTH field.

See SAM-3 for a description of the CONTROL byte.