

T10/08-432r4 SMC-3 Use of element descriptor sense codes

To: T10 Technical Committee

From: Noud Snelder, BDT (noud.snelder@bdt.de)

Date: 9 November 2009

Subject: T10/08-432 SMC-3 Use of element descriptor sense codes

Revision History

Revision 0 (30 October 2008): initial revision

Revision 1 (10 September 2009): incorporated comments from august SMC3 WG telephone conference

Revision 2 (25 September 2009): incorporated comments from September SMC3 WG meeting

Revision 3 (8 November 2009): incorporated comments from October SMC3 WG telephone conference

Revision 4 (9 November 2009): incorporated comments from November SMC3 WG meeting

Related Documents

SMC3r13 - SCSI Media Changer Commands - 3

08-272r2 – SMC-3 New additional sense codes tracking document

Overview

The SMC3 working group is attempting to define commonly used sense codes in the standard to increase level of standardization. The document 08-272 lists new SMC-3 error codes. Some of these error codes are element descriptor sense codes used in the returned data of the READ ELEMENT STATUS command and REPORT ELEMENT INFORMATION command. This document describes new element descriptor sense codes.

Suggested Changes to SMC-3

Proposed new text is shown in *blue*. Proposed deletions are shown in ~~red-strikeout~~.

[Add paragraph:]

5.xx Element state additional information

Element state additional information is reported using additional sense codes (see SPC4) in the ELEMENT STATE ADDITIONAL SENSE CODE field and the ELEMENT STATE ADDITIONAL SENSE CODE QUALIFIER field in element descriptors (see 6.11.3) and element information pages (see 6.13.1). Table x describes some additional sense codes used to report element state additional information.

Table x – Element state additional information

Additional sense code	Description
DUPLICATE VOLUME IDENTIFIER	The volume identifier of the volume in this element is identical to a volume identifier of a volume in a different element.
ELEMENT STATUS UNKNOWN	This element has not been scanned by an inventory scan. Element status is unknown.
VOLUME IDENTIFIER INVALID	The volume identifier of the volume in this element is not consistent does not comply with the rules defined by this media changer.
VOLUME IDENTIFIER MISSING	The volume in this element does not have a volume identifier.

[Modify paragraph:]

6.12.4 Medium transport element descriptor

...

[not all text is copied here]

...

Table 27 — Medium transport element descriptor

Bit Byte	7	6	5	4	3	2	1	0
0	(MSB) _____ ELEMENT ADDRESS _____ (LSB)							
1								
2	Reserved					EXCEPT	Reserved	FULL
3	Reserved							
4	ELEMENT STATE ADDITIONAL SENSE CODE							
5	ELEMENT STATE ADDITIONAL SENSE CODE QUALIFIER							
6	Reserved							
8								
9	SVALID	INVERT	Reserved		ED	MEDIUM TYPE		
10	(MSB) _____ SOURCE STORAGE ELEMENT ADDRESS _____ (LSB)							
11								
...								
(36 bytes)	PRIMARY VOLUME TAG INFORMATION (field omitted if PVOLTAG=0)							
(36 bytes)	ALTERNATE VOLUME TAG INFORMATION (field omitted if AVOLTAG =0)							
...								
(1 byte)	Reserved					CODE SET		
(1 byte)	Reserved					IDENTIFIER TYPE		
(1 byte)	Reserved							
(1 byte)	IDENTIFIER LENGTH (x)							
(x bytes)	IDENTIFIER							
...								
To z-1	Vendor-specific							

~~The ADDITIONAL SENSE CODE field may provide specific information on an abnormal element state. The values in this field are as defined for the ADDITIONAL SENSE CODE field of REQUEST SENSE command response data (see SPC-3). This field is valid only if the EXCEPT bit is set to one.~~

~~The ADDITIONAL SENSE CODE QUALIFIER field may provide more detailed information on an abnormal element state. The values in this field are as defined for the ADDITIONAL SENSE CODE QUALIFIER field of REQUEST SENSE command response data (see SPC-3). This field is valid only if the EXCEPT bit is set to one.~~

An EXCEPT bit is set to one indicates that the ELEMENT STATE ADDITIONAL SENSE CODE field and the ELEMENT STATE ADDITIONAL SENSE CODE QUALIFIER field are valid and contain element state additional information (see 5.xx). An EXCEPT bit set to zero indicates that the content of the ELEMENT STATE ADDITIONAL SENSE CODE field and the ELEMENT STATE ADDITIONAL SENSE CODE QUALIFIER field are not valid.

6.12.5 Storage element descriptor

Table 29 defines the storage element descriptor.

Table 29 — Storage element descriptor

Bit Byte	7	6	5	4	3	2	1	0
0	(MSB) _____ ELEMENT ADDRESS _____ (LSB)							
1								
2	Reserved			ACCESS	EXCEPT	Reserved	FULL	
3	Reserved							
4	ELEMENT STATE ADDITIONAL SENSE CODE							
5	ELEMENT STATE ADDITIONAL SENSE CODE QUALIFIER							

6.12.6 Import/export element descriptor

Table 30 defines the import/export element descriptor.

Table 30 — Import/export element descriptor

Bit Byte	7	6	5	4	3	2	1	0
0	(MSB) _____ ELEMENT ADDRESS _____ (LSB)							
1								
2	OIR	CMC	INENAB	EXENAB	ACCESS	EXCEPT	IMPEXP	FULL
3	Reserved							
4	ELEMENT STATE ADDITIONAL SENSE CODE							
5	ELEMENT STATE ADDITIONAL SENSE CODE QUALIFIER							

6.12.7 Data transfer element descriptor

Table 31 defines the data transfer element descriptor.

Table 31 — Data transfer element descriptor

Bit Byte	7	6	5	4	3	2	1	0
0	(MSB) _____ ELEMENT ADDRESS _____ (LSB)							
1								
2	Reserved			ACCESS	EXCEPT	Reserved	FULL	
3	Reserved							
4	ELEMENT STATE ADDITIONAL SENSE CODE							
5	ELEMENT STATE ADDITIONAL SENSE CODE QUALIFIER							

6.13.5 Element State Data information page

...

[not all text is copied here]

...

A sense data valid (SDV) bit set to one indicates that the ELEMENT STATE ADDITIONAL SENSE CODE field and the ELEMENT STATE ADDITIONAL SENSE CODE QUALIFIER field ~~is-are~~ valid and contain ~~an additional~~ element state additional information (see 5.xx) ~~sense code associated with the specified element~~. A SDV bit set to zero indicates that the content of the ELEMENT STATE ADDITIONAL SENSE CODE field and the ELEMENT STATE ADDITIONAL SENSE CODE QUALIFIER field ~~is-are~~ not valid.