ENDL
T E X A S

Date: 25 June 2008
To: T10 Technical Committee
From: Ralph O. Weber
Subject: Too much to do ... Not enough Progress Counters

Introduction

Way back in the early days of SA development Rob Elliott noted that a device might find itself doing multiple time consuming tasks concurrently (e.g., factoring Pi for a security computation and performing a background medium scan from here to eternity). A promise was made to provide a way to report progress on all such activities as a group.

While not requiring anything, this proposal defines a mechanism by which a suitably inclined device server **may** report multiple progress counters in response to a single REQUEST SENSE command that is sagacious enough to have the DESC bit set to one in the CDB.

Revision History

r0   Initial revision

Unless otherwise indicated additions are shown in blue, deletions in red strikethrough, and comments in green.

Proposed Changes in SPC-4 r15

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Table 27 — DESCRIPTOR TYPE field

Code	Description	Reference
00h	Information	4.5.2.2
01h	Command specific information	4.5.2.3
02h	Sense key specific	4.5.2.4
03h	Field replaceable unit	4.5.2.5
04h	Stream commands	SSC-3
05h	Block commands	SBC-3
06h	OSD object identification	OSD
07h	OSD response integrity check value	OSD
08h	OSD attribute identification	OSD
09h	ATA Status Return	SAT
0Ah	Progress indications	4.5.2.x
0Ah 0Bh to 7Fh	Reserved	
80h to FFh	Vendor specific	4.5.2.6

…

4.5.2.4.4 Progress indication sense key specific data

{{Insert the following at the end of 4.5.2.4.4.}}

…

If progress indication information is available for multiple operations, the progress indications sense data descriptor (see 4.5.2.x) may be used instead of the sense key specific sense data descriptor.

…

4.5.2.x Progress indications sense data descriptor

{{All of 4.5.2.x is new. Markups for changed text suspended for the remainder of this proposal.}}

If the sense key is set to NO SENSE or NOT READY, the progress indications sense data descriptor (see table x1) may be used in place of the sense key specific sense data descriptor (see 4.5.2.4.4) to provide progress indications for multiple operations.

Table x1 — Progress indications sense data descriptor format

Bit Byte	7	6	5	4	3	2	1	0
0	DESCRIPTOR TYPE (0Ah)							
1	ADDITIONAL LENGTH (n-1)							
	Progress indication descriptors							
2 5	Progress indication descriptor [first]							
	. . .							
n-3 n	Progress indication descriptor [last]							

The DESCRIPTOR TYPE and ADDITIONAL LENGTH fields are described in 4.5.2.1. For the progress indications sense data descriptor, the DESCRIPTOR TYPE field shall be set to 0Ah.

Each progress indication descriptor (see table x2) contains progress indication information for one operation.

Table x2 — Progress indication descriptor format

Bit Byte	7	6	5	4	3	2	1	0
0	ADDITIONAL SENSE CODE							
1	ADDITIONAL SENSE CODE QUALIFIER							
2	(MSB)			PROGRESS INDICATION				
3								(LSB)

The ADDITIONAL SENSE CODE (ASC) field indicates the operation for which this progress indication descriptor provides a progress indication. A list of additional sense codes is in 4.5.6.

The ADDITIONAL SENSE CODE QUALIFIER (ASCQ) field indicates detailed information related to the additional sense code for the operation for which this progress indication descriptor provides a progress indication. The value returned in the ADDITIONAL SENSE CODE QUALIFIER (ASCQ) field shall be as specified in 4.5.6.

The contents of the ADDITIONAL SENSE CODE field and the ADDITIONAL SENSE CODE QUALIFIER field in one progress indication descriptor shall match the contents of the ADDITIONAL SENSE CODE field and the ADDITIONAL SENSE CODE QUALIFIER field in the descriptor format sense data header (see 4.5.2.1).

The PROGRESS INDICATION field indicates a percent complete for the operation indicated by the ADDITIONAL SENSE CODE field and the ADDITIONAL SENSE CODE QUALIFIER field. The value is a numerator that has 65 536 (10000h) as its denominator. The progress indication shall be based upon the total operation.