ENDL
TEXAS

Date: 10 September 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
r1   Incorporate changes requesed by the July CAP working group

Substantive changes between r0 and r1 are indicated by change bars.

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

Proposed Changes in SPC-4 r16

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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

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4.5.2.4.1 Sense key specific sense data descriptor introduction

The sense key specific sense data descriptor (see table 30) provides additional information about the exception condition described in 4.5.2.1. The format and content of the sense-key specific data depends on the value in the SENSE KEY field (see 4.5.2.1).

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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 to provide progress indications for operations other than the one described in 4.5.2.1.

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	SENSE KEY							
1	ADDITIONAL SENSE CODE							
2	ADDITIONAL SENSE CODE QUALIFIER							
3	Reserved							
4	(MSB)			PROGRESS INDICATION				
5								(LSB)

The sense key field indicates operation for which this this progress indication descriptor provides a progress indication. A list of sense key values is in 4.5.6.

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 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.