

To: T10 Technical Committee
From: Rob Elliott, Compaq Computer Corporation (Robert.Elliott@compaq.com)
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Subject: Expansion of ASCQs for ASC 5Dh

Add the ASCQs listed below to ASC 5Dh in SPC-2 Table 73 and Table C.1, and mark them as usable by SBC devices. These are taken from RBC table 18 (page 41).

Some of the lower nibble names were slightly changed to fit the 63 character guideline:
 DRIVE ERROR THRESHOLD EXCEEDING LIMITS changed to EXCEEDING DRIVE ERROR THRESHOLD.
 CHANNEL PARAMETRICS INDICATE IMPENDING FAILURE changed to INDICATED BY CHANNEL PARAMETRICS.
 CONTROLLER DETECTED IMPENDING FAILURE changed to CONTROLLER DETECTED.

ASCQ	Description
10,	HARDWARE IMPENDING FAILURE GENERAL HARD DRIVE FAILURE
11,	HARDWARE IMPENDING FAILURE EXCEEDING DRIVE ERROR THRESHOLD
12,	HARDWARE IMPENDING FAILURE DATA ERROR RATE EXCEEDING LIMITS
13,	HARDWARE IMPENDING FAILURE SEEK ERROR RATE EXCEEDING LIMITS
14,	HARDWARE IMPENDING FAILURE LBA REASSIGNMENT EXCEEDING LIMITS
15,	HARDWARE IMPENDING FAILURE ACCESS TIMES EXCEEDING LIMITS
16,	HARDWARE IMPENDING FAILURE START UNIT TIMES EXCEEDING LIMITS
17,	HARDWARE IMPENDING FAILURE INDICATED BY CHANNEL PARAMETRICS
18,	HARDWARE IMPENDING FAILURE CONTROLLER DETECTED
19,	HARDWARE IMPENDING FAILURE THROUGHPUT PERFORMANCE
1A,	HARDWARE IMPENDING FAILURE SEEK TIME PERFORMANCE
1B,	HARDWARE IMPENDING FAILURE SPIN-UP RETRY COUNT
1C,	HARDWARE IMPENDING FAILURE DRIVE CALIBRATION RETRY COUNT
20,	CONTROLLER IMPENDING FAILURE GENERAL HARD DRIVE FAILURE
21,	CONTROLLER IMPENDING FAILURE EXCEEDING DRIVE ERROR THRESHOLD
22,	CONTROLLER IMPENDING FAILURE DATA ERROR RATE EXCEEDING LIMITS
23,	CONTROLLER IMPENDING FAILURE SEEK ERROR RATE EXCEEDING LIMITS
24,	CONTROLLER IMPENDING FAILURE LBA REASSIGNMENT EXCEEDING LIMITS
25,	CONTROLLER IMPENDING FAILURE ACCESS TIMES EXCEEDING LIMITS
26,	CONTROLLER IMPENDING FAILURE START UNIT TIMES EXCEEDING LIMITS
27,	CONTROLLER IMPENDING FAILURE INDICATED BY CHANNEL PARAMETRICS
28,	CONTROLLER IMPENDING FAILURE CONTROLLER DETECTED
29,	CONTROLLER IMPENDING FAILURE THROUGHPUT PERFORMANCE
2A,	CONTROLLER IMPENDING FAILURE SEEK TIME PERFORMANCE
2B,	CONTROLLER IMPENDING FAILURE SPIN-UP RETRY COUNT
2C,	CONTROLLER IMPENDING FAILURE DRIVE CALIBRATION RETRY COUNT
30,	DATA CHANNEL IMPENDING FAILURE GENERAL HARD DRIVE FAILURE
31,	DATA CHANNEL IMPENDING FAILURE EXCEEDING DRIVE ERROR THRESHOLD
32,	DATA CHANNEL IMPENDING FAILURE DATA ERROR RATE EXCEEDING LIMITS
33,	DATA CHANNEL IMPENDING FAILURE SEEK ERROR RATE EXCEEDING LIMITS
34,	DATA CHANNEL IMPENDING FAILURE LBA REASSIGNMENT EXCEEDING LIMITS
35,	DATA CHANNEL IMPENDING FAILURE ACCESS TIMES EXCEEDING LIMITS
36,	DATA CHANNEL IMPENDING FAILURE START UNIT TIMES EXCEEDING LIMITS
37,	DATA CHANNEL IMPENDING FAILURE INDICATED BY CHANNEL PARAMETRICS
38,	DATA CHANNEL IMPENDING FAILURE CONTROLLER DETECTED
39,	DATA CHANNEL IMPENDING FAILURE THROUGHPUT PERFORMANCE

3A,	DATA CHANNEL IMPENDING FAILURE SEEK TIME PERFORMANCE
3B,	DATA CHANNEL IMPENDING FAILURE SPIN-UP RETRY COUNT
3C,	DATA CHANNEL IMPENDING FAILURE DRIVE CALIBRATION RETRY COUNT
40,	SERVO IMPENDING FAILURE GENERAL HARD DRIVE FAILURE
41,	SERVO IMPENDING FAILURE EXCEEDING DRIVE ERROR THRESHOLD
42,	SERVO IMPENDING FAILURE DATA ERROR RATE EXCEEDING LIMITS
43,	SERVO IMPENDING FAILURE SEEK ERROR RATE EXCEEDING LIMITS
44,	SERVO IMPENDING FAILURE LBA REASSIGNMENT EXCEEDING LIMITS
45,	SERVO IMPENDING FAILURE ACCESS TIMES EXCEEDING LIMITS
46,	SERVO IMPENDING FAILURE START UNIT TIMES EXCEEDING LIMITS
47,	SERVO IMPENDING FAILURE INDICATED BY CHANNEL PARAMETRICS
48,	SERVO IMPENDING FAILURE CONTROLLER DETECTED
49,	SERVO IMPENDING FAILURE THROUGHPUT PERFORMANCE
4A,	SERVO IMPENDING FAILURE SEEK TIME PERFORMANCE
4B,	SERVO IMPENDING FAILURE SPIN-UP RETRY COUNT
4C,	SERVO IMPENDING FAILURE DRIVE CALIBRATION RETRY COUNT
50,	SPINDLE IMPENDING FAILURE GENERAL HARD DRIVE FAILURE
51,	SPINDLE IMPENDING FAILURE EXCEEDING DRIVE ERROR THRESHOLD
52,	SPINDLE IMPENDING FAILURE DATA ERROR RATE EXCEEDING LIMITS
53,	SPINDLE IMPENDING FAILURE SEEK ERROR RATE EXCEEDING LIMITS
54,	SPINDLE IMPENDING FAILURE LBA REASSIGNMENT EXCEEDING LIMITS
55,	SPINDLE IMPENDING FAILURE ACCESS TIMES EXCEEDING LIMITS
56,	SPINDLE IMPENDING FAILURE START UNIT TIMES EXCEEDING LIMITS
57,	SPINDLE IMPENDING FAILURE INDICATED BY CHANNEL PARAMETRICS
58,	SPINDLE IMPENDING FAILURE CONTROLLER DETECTED
59,	SPINDLE IMPENDING FAILURE THROUGHPUT PERFORMANCE
5A,	SPINDLE IMPENDING FAILURE SEEK TIME PERFORMANCE
5B,	SPINDLE IMPENDING FAILURE SPIN-UP RETRY COUNT
5C,	SPINDLE IMPENDING FAILURE DRIVE CALIBRATION RETRY COUNT
60,	FIRMWARE IMPENDING FAILURE GENERAL HARD DRIVE FAILURE
61,	FIRMWARE IMPENDING FAILURE EXCEEDING DRIVE ERROR THRESHOLD
62,	FIRMWARE IMPENDING FAILURE DATA ERROR RATE EXCEEDING LIMITS
63,	FIRMWARE IMPENDING FAILURE SEEK ERROR RATE EXCEEDING LIMITS
64,	FIRMWARE IMPENDING FAILURE LBA REASSIGNMENT EXCEEDING LIMITS
65,	FIRMWARE IMPENDING FAILURE ACCESS TIMES EXCEEDING LIMITS
66,	FIRMWARE IMPENDING FAILURE START UNIT TIMES EXCEEDING LIMITS
67,	FIRMWARE IMPENDING FAILURE INDICATED BY CHANNEL PARAMETRICS
68,	FIRMWARE IMPENDING FAILURE CONTROLLER DETECTED
69,	FIRMWARE IMPENDING FAILURE THROUGHPUT PERFORMANCE
6A,	FIRMWARE IMPENDING FAILURE SEEK TIME PERFORMANCE
6B,	FIRMWARE IMPENDING FAILURE SPIN-UP RETRY COUNT
6C,	FIRMWARE IMPENDING FAILURE DRIVE CALIBRATION RETRY COUNT