

**Proposed
Draft**

**Serial ATA
International Organization**

Version 1
6 July 2015

**Serial ATA Revision 3.2 Technical Proposal 072
Title : Add Deferred Errors to NCQ Error log**

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Introduction

T13 has approved the addition of a DEFERRED ERROR bit to the REQUEST SENSE DATA EXT Normal Output. For completeness, DEFERRED ERROR bit needs to find a home in the NCQ Queued Error log, which is what this proposal intends to accomplish.

The purpose of the DEFERRED ERROR bit is to give ATA the same ability that SCSI has to distinguish between current and deferred sense data (i.e., the difference between response codes 70h and 71h). Note: Fully replicating the SCSI response code is unnecessary because the sense data formats that other response code values indicate are not used in ATA.

Removed text is in ~~red-strikeout~~, inserted text is in underlined blue, and comment text is in *italic green*.

1 Technical Specification Changes

1.1 Figure 381

13.7.4 Queued error log (10h)

...

If the device supports NCQ Autosense (i.e., IDENTIFY DEVICE data Word 78 bit 7 is set to one), then:

- a) [the DER bit shall be set as defined in ACS-4;](#)
- b) the Sense Key field [shall be set to values defined in SPC-4;](#)
- c) the Additional Sense Code Field [shall be set to values defined in SPC-4;](#) and
- d) the Additional Sense Code Qualifier field [shall be set to values defined in SPC-4.](#)
~~shall be set to values defined in SPC-4.~~

If the device does not support NCQ Autosense (i.e., IDENTIFY DEVICE data Word 78 bit 7 is cleared to zero), then:

- a) [the DER bit shall be cleared to zero;](#)
- b) the Sense Key field shall be cleared to zero;
- c) the Additional Sense Code field shall be cleared to zero; and
- d) the Additional Sense Code Qualifier field shall be cleared to zero.

Byte	7	6	5	4	3	2	1	0
0	NQ	UNL	R DER	TAG				
1	Reserved							
2	Status(7:0)							
3	Error(7:0)							
4	LBA(7:0)							
5	LBA(15:8)							
6	LBA(23:16)							
7	Device(7:0)							
8	LBA(31:24)							
9	LBA(39:32)							
10	LBA(47:40)							
11	Reserved							
12	Count(7:0)							
13	Count(15:8)							
14	Sense Key							
15	Additional Sense Code							
16	Additional Sense Code Qualifier							
...	...							
<i>No other changes in figure 381</i>								

Figure 381 – Queued Error Log data structure definition

TAG If the NQ bit is cleared to zero, the TAG field contains the TAG corresponding to the queued command that failed.

DER [The DER bit indicates whether the Sense Key field, Additional Sense Code field, and Additional Sense Code Qualifier field describe current information or a deferred error as described in ACS-4.](#)

UNL If set to one indicates that the error condition was ...

No other changes to field descriptions