

**Proposed
Draft**

**Serial ATA
International Organization**

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**Serial ATA Revision 3.2 Technical Proposal
TPR075
Title : Add DATA SET MANAGEMENT XL
command**

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Document History

Version	Date	Comments
0	8 Aug 15	Initial release (posted w/o a D number)
1	10 Aug 15	Add correct D number. Apply updates requested by SATA editor, mostly making field names small caps.
2	30 Aug 15	Member review, D205 changed to TPR075.

Introduction

In two weeks, T13 will consider adding a DATA SET MANAGEMENT XL command whose big selling point is the 64-bit RANGE LENGTH field, a heart-stopping size that is nonetheless big enough to take anything 2015 SCSI can throw at it through a SATL.

Normally, one would wait to see whether T13 was prepared to swallow this *big gulp* before troubling the SATA Digital group with the details, but ... Deadlines being deadlines, a swap at parallelism would seem to be in order.

Additions are in blue underline, deletions are in ~~red-strikeout~~, comments are in *green italic*.

1 Technical Specification Changes

1.1 Add subcommand

13.6.8.5 SEND FPDMA QUEUED subcommands

Subcommands for the SEND FPDMA QUEUED commands are contained within the **Count** **COUNT field** (12:8)-**field**. The allowed values are defined in Table 111. Support for each subcommand is reported in the NCQ Send and Receive log (see 13.7.6).

Table 111 – Subcommands for SEND FPDMA QUEUED

Value	SubcommandDescription	Reference
00h	DATA SET MANAGEMENT subcommand (see 13.6.8.6)	13.6.8.6
01h	HYBRID EVICT subcommand (see 13.6.8.7)	13.6.8.7
02h	WRITE LOG DMA EXT subcommand (see 13.6.8.8)	13.6.8.8
03h	<<Already used for ZAC Management Out (see TPR071)>>	13.6.8.9
04h	DATA SET MANAGEMENT XL subcommand	13.6.8.x
05h..1Fh	Reserved	

1.2 Add definition subclause

[13.6.8.x DATA SET MANAGEMENT XL subcommand \(04h\)](#)

[13.6.8.x.1 DATA SET MANAGEMENT XL subcommand definition](#)

The [DATA SET MANAGEMENT XL subcommand functionality and behavior](#) is dependent on all requirements of the [DATA SET MANAGEMENT XL command](#) and the [IDENTIFY DEVICE command](#) defined in ACS-4.

[13.6.8.x.2 Inputs](#)

Field	7	6	5	4	3	2	1	0
LBA(7:0)	DSM SPECIFIC(7:0)							
LBA(15:8)	DSM SPECIFIC(15:8)							
LBA(23:16)	DSM SPECIFIC(23:16)							
LBA(31:24)	DSM SPECIFIC(31:24)							
LBA(39:32)	DSM SPECIFIC(39:32)							
LBA(47:40)	DSM SPECIFIC(47:40)							
AUXILIARY(7:0)	Reserved							TRIM
AUXILIARY(15:8)	DSM FUNCTION(7:0)							
AUXILIARY(23:16)	Reserved							
AUXILIARY(31:24)	Reserved							

[Figure New – DATA SET MANAGEMENT XL subcommand = 04h](#)

Field Definitions

DSM SPECIFIC

As defined by the DATA SET MANAGEMENT XL command in ACS-4.

TRIM

As defined by the DATA SET MANAGEMENT XL command in ACS-4.

DSM FUNCTION

As defined by the DATA SET MANAGEMENT XL command in ACS-4.

13.6.8.x.3 Success outputs

See 13.6.8.3.

13.6.8.x.4 Error outputs

See 13.6.8.4.

13.6.8.x.5 Output from the host to the device data structure

As defined in the DATA SET MANAGEMENT XL command in ACS-4.

1.3 Add support bit

13.7.6 NCQ **s**Send and **r**Receive log (13h)

13.7.6.1 NCQ **s**Send and **r**Receive log overview

To determine the supported SEND FPDMA QUEUED and RECEIVE FPDMA QUEUED subcommands and their respective features, host software may read log 13h [\(see figure 383\)](#).

This log shall be supported if the SEND FPDMA QUEUED and RECEIVE FPDMA QUEUED command is supported (i.e., IDENTIFY DEVICE data Word 77 bit 6 is set to one-).

Dword	Bits	Description	Reference	
0	Subcommands Supported			
	31..23	Reserved		
	2	SUPPORTS DATA SET MANAGEMENT XL bit	13.7.6.x	
	1	SUPPORTS HYBRID EVICT bit (see 13.7.6.2)	13.7.6.2	
1	0	SUPPORTS DATA SET MANAGEMENT bit (see 13.7.6.3)	13.7.6.3	
	Data Set Management			
	31..1	Reserved		
	0	SUPPORTS TRIM bit (see 13.7.6.4)	13.7.6.4	
<<No other changes proposed in figure 383.>>				

Figure 383 – NCQ **s**Send and **r**Receive log (13h) data structure definition

13.7.6.x Supports Data Set Management XL

If the SUPPORTS DATA SET MANAGEMENT XL bit is set to one, then the device supports the DATA SET MANAGEMENT XL subcommand (see 13.6.8.x) of the SEND FPDMA QUEUED command. If the SUPPORTS DATA SET MANAGEMENT XL bit is cleared to zero, then the device does not support the DATA SET MANAGEMENT XL subcommand of the SEND FPDMA QUEUED command.