

To: T10 Technical Committee
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Subject: Increased defect list lengths for SBC-2

00-248r2 outlined several SBC-2 issues. Item 4 from that proposal is expanded upon here.

READ DEFECT DATA (10) (section 5.1.10) is defined in the block device section of SBC-2 revision 2, while READ DEFECT DATA (12) is defined in the optical device section (section 5.2.5). SBC and SPC-2 do not define READ DEFECT DATA (12) as a command for block devices. Modern block devices can have more defects to report than READ DEFECT DATA (10) supports, so READ DEFECT DATA (12) needs to be defined for them.

After making this change, the defect list lengths supported by FORMAT UNIT and REASSIGN BLOCKS need to increase.

Current defect list length field sizes are:

- READ DEFECT DATA (10) - 2 byte DEFECT LIST LENGTH field in its CDB.
- READ DEFECT DATA (12) - 4 byte DEFECT LIST LENGTH field in the CDB.
- FORMAT UNIT(6) - 2 byte DEFECT LIST LENGTH in its parameter list, used if FMTDATA=1.
- REASSIGN BLOCKS(6) - 2 byte DEFECT LIST LENGTH in its parameter list.

Suggested changes

[Move Section 5.2.5 into 5.1.x and update cross references in Table 8 and Table 67.]

5.1.1.1 FORMAT UNIT command overview

[Add another bit in the CDB indicating that a long parameter list format is being provided.]

	7	6	5	4	3	2	1	0
0	OPERATION CODE (04h)							
1	Reserved	LONGLIST	FMTDATA	CMPLST	DEFECT LIST FORMAT			
2								
3	INTERLEAVE							
4								
5	CONTROL							

A format data (FMTDATA) bit of zero indicates that data-out buffer shall not be transferred. The source of defect information is not specified.

A FMTDATA bit of one indicates that the FORMAT UNIT parameter list (see Table 10) shall be in the data-out buffer transfer. The data-out buffer transfer consists of a defect list header (see Table 11), followed by an initialization pattern descriptor, followed by zero or more defect descriptors. Each defect descriptor identifies a location on the medium that the device server shall map out of the user-accessible area.

A LONGLIST bit of zero indicates that the defect list header follows the short format in Table 11. A LONGLIST bit of one indicates that the defect list header follows the long format in Table 11b.

Table 11 – **SHORT** DEFECT LIST HEADER

	7	6	5	4	3	2	1	0
0	Reserved							
1	FOV	DPRY	DCRT	STPF	IP	DSP	IMMED	VS
2	DEFECT LIST LENGTH							
3								

[new table]

Table 11b – LONG DEFECT LIST HEADER

	7	6	5	4	3	2	1	0
0	Reserved							
1	FOV	DPRY	DCRT	STPF	IP	DSP	IMMED	VS
2	Reserved							
3	Reserved							
4	DEFECT LIST LENGTH							
5								
6								
7								

5.1.12 REASSIGN BLOCKS command

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Table 33 - REASSIGN BLOCKS command

	7	6	5	4	3	2	1	0
0	OPERATION CODE (04h)							
1	Reserved							LONGLIST
2	Reserved							
3	Reserved							
4	Reserved							
5	CONTROL							

The REASSIGN BLOCKS defect list (see Table 34) contains a four-byte header followed by one or more defect descriptors. The length of each defect descriptor is four bytes. *If LONGLIST is set to zero, the first two bytes are reserved and bytes 2-3 contain the DEFECT LIST LENGTH. If LONGLIST is set to one, the first four bytes contain the DEFECT LIST LENGTH.*

Table 34 - REASSIGN BLOCKS defect list with LONGLIST set to zero

	7	6	5	4	3	2	1	0
0	Reserved							
1	Reserved							
2	DEFECT LIST LENGTH							
3								
4	DEFECT DESCRIPTOR(s)							
							

Table 34 - REASSIGN BLOCKS defect list with LONGLIST set to one

	7	6	5	4	3	2	1	0
0	DEFECT LIST LENGTH							
1								
2								
3								
4	DEFECT DESCRIPTOR(s)							
							