Voting Results on T10 Letter Ballot 02-305r0 on
Forwarding SMC-2 to First Public Review

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Organization                      Name                 S Vote Add'l Info
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Adaptec, Inc.                     Ron Roberts          P Yes
Amphenol Interconnect             Michael Wingard      P Yes
Andiamo Systems, Inc.             Claudio DeSanti      P Yes
BREA Technologies, Inc.           Bill Galloway        P Yes
Brocade Comm. Systems, Inc.       Brian Forbes         P Yes
Cisco Systems, Inc.               David Peterson       P Yes
Congruent Software, Inc.          Peter Johansson      P Abs   Cmnts
Crossroads Systems, Inc.          Robert Griswold      P Yes
Dallas Semiconductor              James A. Lott, Jr.   A Yes
Dell Computer Corp.               Kevin Marks          P Yes
EMC Corp.                         David Black          A Yes
Emulex                            Robert H. Nixon      P Yes
ENDL Texas                        Ralph O. Weber       P YesC Cmnts
Exabyte Corp.                     Joe Breher           P YesC Cmnts
FCI                               Douglas Wagner       P Yes
Fujitsu                           Mike Fitzpatrick     P Yes
General Dynamics                  Nathan Hastad        P Yes
Hewlett Packard Co.               Michael Banther      A No    Cmnts
Hitachi Cable Manchester          Zane Daggett         P Yes
Honda Connectors                                         DNV
IBM / Tivoli Systems              George O. Penokie    P Abs   Cmnts
Intel Corp.                       Cris Simpson         P Yes
Iomega Corp.                      Tim Bradshaw         P Yes
KnowledgeTek, Inc.                Dennis Moore         P Yes
LSI Logic Corp.                   John Lohmeyer        P Yes
Maxtor Corp.                      Mark Evans           P Yes
Microsoft Corp.                   Emily Hill           P Yes
Molex Inc.                        Jay Neer             P Yes
Network Appliance Inc.            James R. (Bob) Davis P Yes
Nishan Systems Inc.               Charles Monia        P Yes
Ophidian Designs                  Edward A. Gardner    P Abs   Cmnts
Panasonic Technologies, Inc       Terence J. Nelson    P Yes
Philips Electronics/CD Edge       William P. McFerrin  P Yes
Pirus Networks                    Charles Binford      P YesC Cmnts
QLogic Corp.                      Skip Jones           P Yes
Quantum Corp.                     Paul Entzel          P No    Cmnts
Seagate Technology                Gerald Houlder       P No    Cmnts
Silicon Image                     Mark O'Dell          P Yes
Storage Technology Corp.          Erich Oetting        P No    Cmnts
Sun Microsystems, Inc.            Vit Novak            P Yes
Texas Instruments                 Paul D. Aloisi       P YesC Cmnts
Toshiba America Elec. Comp.       Tasuku Kasebayashi   P Yes
Madison Cable Corp.               Jie Fan              P Yes
UNISYS Corporation                Phil Shelton         A Yes
Veritas Software                  Roger Cummings       P Yes
Vixel Corp.                       Kenneth Hirata       P Yes
Western Digital Corporation       Tom Hanan            P Yes
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Ballot totals: (39:4:3:1=47)
 39 Yes
  4 No
  3 Abstain
  1 Organization(s) did not vote
 47 Total voting organizations
 11 Ballot(s) included comments

This 2/3rds majority ballot passed.
39 Yes are more than half the membership eligible to vote minus abstentions
  [greater than 22] AND
39 Yes are at least 29 (2/3rds of those voting, excluding abstentions [43]) AND
39 Yes are equal to or exceed a quorum [15]

Key:
P   Voter is principal member
A   Voter is alternate member

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YesC    Yes with comments vote
Abs     Abstain vote
DNV     Organization did not vote
Cmnts   Comments were included with ballot
NoCmnts No comments were included with a vote that requires comments
DUP     Duplicate ballot (last ballot received from org. is counted)
PSWD    The password was not correct (vote not counted)
ORG?    Organization is not voting member of T10 (vote not counted)
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Comments attached to Abs ballot from Mr. Peter Johansson of
Congruent Software, Inc.:

My abstention is for lack of technical expertise in the subject matter.

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Comments attached to YesC ballot from Mr. Ralph O. Weber of
ENDL Texas:

In case the comments fail to get included fully here, they have been
mailed separately to John Lohmeyer.

ENDL 1
PDF pg 1, Global
remove change bars

ENDL 2
PDF pg 1, Global
SCSI-3 Media Changer Commands - 2 s/b
SCSI Media Changer Commands - 2

ENDL 3
PDF pg 1, Global
Change SPC to SPC-2.

ENDL 4
PDF pg 3
Remove revision history before sending SMC-2 to Public Review.

ENDL 5
PDF pg 6, Foreword, p2, s2
SCSI-3 Architecture Model (SAM) s/b either just SAM or just SCSI-3
Architecture Model. The SAM acronym should be defined in the acronyms
glossary (if used).

ENDL 6
PDF pg 7, Introduction, s for clause 2
Put a period at the end of this sentence.

ENDL 7
PDF pg 12, Clause 1, 1st bullet
Delete 'over a SCSI service delivery subsystem'.

ENDL 8
PDF pg 12, Clause 1, 3rd bullet
commands s/b commands and parameter data

ENDL 9
PDF pg 12, Clause 1, Figure 1
Transport Protocols s/b SCSI Transport Protocols

ENDL 10
PDF pg 13, Clause 1, top of page
SCSI-3 s/b SCSI

ENDL 11

PDF pg 13, Clause 1
Transport Protocols s/b SCSI Transport Protocols

ENDL 12
PDF pg 13, Clause 1
The example SCSI standards need a lot of work. FC-AL is no longer
current, FC-AL-2 is. FC-PH should be replaced by FC-PI. SSA-PL2 needs a
year after the NCITS.307. ...

If the intention is to take SMC-2 to ISO, it would be best to switch to
ISO reference numbers wherever possible. ANSI will accept ISO references
but ISO prefers not to use ANSI references.

Look at the list in SPC-3 r08.

ENDL 13
PDF pg 13, Clause 1, b of pg
RE: 'The term SCSI is used wherever it is not necessary to distinguish
between the versions of SCSI.'

In these modern times, SCSI refers to SCSI-3, since SCSI-2 is thought of
as ancient history.

ENDL 14
PDF pg 14, Clause 2, p 2, s1
can be obtained s/b may be obtained

ENDL 15
PDF pg 14, Clause 2
ANSI X3.270-1996 s/b ISO/IEC 14776-411

ENDL 16
PDF pg 14, Clause 2
ANSI X3.301-1997, Information Technology - SCSI-3 Primary Commands
s/b
ISO/IEC 14776-312, Information Technology - SCSI Primary Commands - 2

ENDL 17
PDF pg 14, Clause 2
The discussion of ports in SMC-2 requires that a reference be added to
SAM-2. Currently, that would have to be a reference to a standard in
development. As soon as SAM-2 goes to public review, it should be
possible to make the reference a normative reference.

ENDL 18
PDF pg 14, Clause 2
The discussion of MAM in SMC-2 requires that a reference be added to
SPC-3. This will have to be reference to a standard in development. MAM
is discussed only in SPC-3.

ENDL 19
PDF pg 15, 3.1.1
of REQUEST SENSE command response data s/b of the sense data

ENDL 20
PDF pg 15, 3.1.2
the SCSI-3 Architecture Model (SAM) s/b SAM

ENDL 21
PDF pg 15, 3.1.5
So that the definition of byte is not a sentence (as is the case with
most other glossary entries) 'Indicates an' s/b 'An'.

ENDL 22
PDF pg 15, 3.1.7
command descriptor block: s/b command descriptor block (CDB):

ENDL 23
PDF pg 15, 3.1.7
To acknowledge variable length CDBs, delete 'up to 16 bytes in length'.

ENDL 24
PDF pg 15, 3.1.11
can serve s/b may serve

ENDL 25
PDF pg 15, 3.1.12
Delete the definition for 'extent' because the term should not be used
in SMC-2.

ENDL 26
PDF pg 16, 3.1.15
Delete the definition for 'host' because the term should not be used in
SMC-2.

ENDL 27
PDF pg 16, 3.1.16
can be accessed s/b may be accessed

ENDL 28
PDF pg 16, 3.1.18
initiator s/b SCSI initiator device [note this will move the entry to a
different position in the glossary]

ENDL 29
PDF pg 16, 3.1.18
an initiator may be found in SAM s/b a SCSI initiator device may be
found in SAM-2

ENDL 30
PDF pg 16, 3.1.19
Delete 'which collectively make up a discrete I/O operation' Or at a
minimum, change 'which' to 'that'.

ENDL 31
PDF pg 16, 3.1.20
target s/b SCSI target device

ENDL 32
PDF pg 16, 3.1.21
Remove '64-bit'

ENDL 33
PDF pg 16, 3.1.26
To avoid having a glossary entry start with a complete sentence,
'Several commands use regular parameter structures that are referred to
as pages.' s/b 'A regular parameter structure (or format) used by
several commands.'

ENDL 34
PDF pg 16, 3.1.27
Delete the definition for 'port' because the correct term now is SCSI
target port.

ENDL 35
PDF pg 16, 3.1.29
SCSI-3 protocol standard s/b SCSI transport protocol standard

ENDL 36
PDF pg 17, insert after 3.1.31
Add the following new glossary entries.

SCSI initiator port: A SCSI initiator device object that acts as the
connection between application clients and and the service delivery
subsystem through which requests and responses are routed. A detailed
definition of SCSI target port may be found in SAM-2.

SCSI target port: A SCSI target device object that acts as the
connection between device servers and task managers and the service
delivery subsystem through which requests and responses are routed. A

detailed definition of SCSI target port may be found in SAM-2.

ENDL 37
PDF pg 17, 3.1.34
initiator s/b application client

ENDL 38
PDF pg 17, 3.1.38
target s/b SCSI target device (note this will move the entry to a
different position in the glossary)

ENDL 39
PDF pg 17, 3.1.38
initiator s/b application client

ENDL 40
PDF pg 17, 3.1.38, s 2
target may be found in SAM s/b SCSI target device may be found in SAM-2

ENDL 41
PDF pg 17, 3.1.40
queuing and autocontingent allegiance rules s/b queuing, contingent
allegiance, and auto contingent allegiance rules

ENDL 42
PDF pg 17, 3.1.41
reference to RESERVE or RELEASE commands s/b
reference to the RESERVE ELEMENT or RELEASE ELEMENT commands

ENDL 43
PDF pg 17, 3.1.42
initiators s/b SCSI initiator ports

ENDL 44
PDF pg 18, 3.2, Symbols and abbreviations
Add '= is equal to' as a symbol definition because of the frequent use
of bit=0 and bit=1 in several tables.

ENDL 45
PDF pg 18, 3.2
MMC SCSI-3 Multi-Media Commands standard s/b
MMC-3 SCSI Multi-Media Commands -3 standard

ENDL 46
PDF pg 18, 3.2, SMC-2
SCSI-3 Media Changer Commands - 2 standard s/b
SCSI Media Changer Commands -2, this standard

ENDL 47
PDF pg 18, 3.2
add an acronym entry for SPC-3.

ENDL 48
PDF pg 18, 3.2
The abbreviations list should just be a list, not a bulleted list.

ENDL 49
PDF pg 19, 3.3.6
this standards s/b this standard

ENDL 50
PDF pg 19, 3.3.7, s1
future extension to this standard s/b future version of this standard

ENDL 51
PDF pg 19, 3.4, s3
The text 'If a conflict arises between text, tables, or figures, ...'
should begin a new paragraph.

ENDL 52

PDF pg 20, Clause 4, p1, s1 & s2
SCSI-3 s/b SCSI [twice]

ENDL 53
PDF pg 20, Clause 4, p1, s1
they can s/b that may

ENDL 54
PDF pg 20, Clause 4, p 4, s 1 & s 3
initiators s/b SCSI initiator ports and
initiator s/b SCSI initiator port

ENDL 55
PDF pg 21, Clause 4, Figure 2
'Port' s/b 'SCSI target port' or 'SCSI Target Port' [3 times]

ENDL 56
PDF pg 21, Clause 4, last p on pg, s1
initiator s/b application client

ENDL 57
PDF pg 22, 5.1, p2, s1
the SMC-2 standard s/b this standard

ENDL 58
PDF pg 22, 5.1, p3
port s/b SCSI target port

ENDL 59
PDF pg 22, 5.1, p3
independent ports s/b independent SCSI target ports

ENDL 60
PDF pg 22, 5.3, bulleted list
The list should be an a,b,c list.

ENDL 61
PDF pg 23, 5.3, 1st p on pg, s 3
'However, multiple initiator environments may cause volumes to be moved
without notifying other initiators.' s/b 'However, in configurations
with multiple initiators, volumes may be moved by one application client
without notification to other application clients.'

ENDL 62
PDF pg 23, 5.3, 2nd p on pg, s2
Volumes can be s/b Volumes may be

ENDL 63
PDF pg 23, 5.3, 3rd p on pg, s 1
an initiator s/b a SCSI initiator port

ENDL 64
PDF pg 23, 5.3, 3rd p on pg, s2
will be lost s/b shall be released

ENDL 65
PDF pg 23, 5.3, 3rd p on pg, s3
will be retained s/b shall be retained

ENDL 66
PDF pg 23, 5.3, 4th p on pg, s2
can be s/b may be

ENDL 67
PDF pg 23, 5.3, Note 1, s 2
could be provided by a port which allows s/b
may be provided by a port that allows

ENDL 68
PDF pg 23, 5.4, p1, s2

can serve s/b may serve

ENDL 69
PDF pg 23, 5.4, last p on pg, s 2
initiator s/b application client

ENDL 70
PDF pg 24, 5.5, p1, s3
the SMC-2 device s/b the device

ENDL 71
PDF pg 25, 5.9, p1, s2
which may be s/b that may be

ENDL 72
PDF pg 25, 5.9, p 1, s 3
initiators s/b SCSI initiator ports & initiator s/b SCSI initiator port
[twice]

ENDL 73
PDF pg 25, 5.9, bulleted list
The list should be an a,b,c list.

ENDL 74
PDF pg 26, 5.10, p 1, last s
initiator s/b application client

ENDL 75
PDF pg 27, 6.1, Table 2
Table 2 should have column titles and the key on every page.

ENDL 76
PDF pg 29, 6.3, p 4, s 1, & p 5, s 1
issued by initiators s/b received from SCSI initiators [once each p]
by initiators s/b from SCSI initiator ports [once each p]

ENDL 77
PDF pg 29, 6.3, p 4, s 1
registrantsonly s/b registrants only or all registrants

ENDL 78
PDF pg 29, 6.3, p 5, s 1
registrants only s/b registrants only or all registrants

ENDL 79
PDF pg 29, 6.3, p 6, s 1 & s 2
initiators s/b SCSI initiator ports [twice]

ENDL 80
PDF pg 29, 6.3, p7 & p8
remove strikeout text

ENDL 81
PDF pg 30, 6.3, Table 4
Initiator s/b initiator [twice]

ENDL 82
PDF pg 31, 6.4, p 3
Remove the paragraph describing reservation conflicts because that
subject is now covered in 6.3.

ENDL 83
PDF pg 31, 6.4, Table 5
Add MSB and LSB information for the MEDIUM TRANSPORT ADDRESS, SOURCE
ADDRESS, FIRST DESTINATION ADDRESS, and SECOND DESTINATION ADDRESS
fields.

ENDL 84
PDF pg 31, 6.4, 1st p after table 5, s 4
which defines s/b that defines

ENDL 85
PDF pg 32, 6.4, last p on pg, s2
a logical unit which is not capable s/b
a device sever that is not capable

ENDL 86
PDF pg 33, 6.5, p 1, s 2
Initiator s/b application client

ENDL 87
PDF pg 33, 6.5, 3rd p after table 6
Remove the paragraph describing reservation conflicts because that
subject is now covered in 6.3.

ENDL 88
PDF pg 34, 6.6, p 1, s 1
ELEMENT STATUS WITH RANGE s/b INITIALIZE ELEMENT STATUS WITH RANGE

ENDL 89
PDF pg 34, 6.6, p 1, s 2
Initiator s/b application client

ENDL 90
PDF pg 34, 6.6, p 1, s 3
power failure, or if a s/b power failure, if a [currently there are two
'or's in the sentence where there should be one]

ENDL 91
PDF pg 34, 6.6, Table 7
Add MSB and LSB information for the STARTING ELEMENT ADDRESS and NUMBER
OF ELEMENTS fields.

ENDL 92
PDF pg 34, 6.6, 4th p after table 7
Remove the paragraph describing reservation conflicts because that
subject is now covered in 6.3.

ENDL 93
PDF pg 35, 6.7, p 1, s 1
target s/b device server

ENDL 94
PDF pg 35, 6.7, p 2
Remove the paragraph describing reservation conflicts because that
subject is now covered in 6.3.

ENDL 95
PDF pg 35, 6.7, Table 8
Add MSB and LSB information for the MEDIUM TRANSPORT ADDRESS, SOURCE
ADDRESS, and DESTINATION ADDRESS fields.

ENDL 96
PDF pg 35, 6.7, 3rd p after table 8, s 1 & s 3
target s/b device server [twice]

ENDL 97
PDF pg 36, 6.7, 1st p on pg, s 3, 2nd p on pg s 2, 4th p on pg, s 3
target s/b device server [3 times]

ENDL 98
PDF pg 37, 6.8, p 3
Remove the paragraph describing reservation conflicts because that
subject is now covered in 6.3.

ENDL 99
PDF pg 37, 6.8, Table 9
Add MSB and LSB information for the MEDIUM TRANSPORT ADDRESS and
DESTINATION ADDRESS fields.

ENDL 100
PDF pg 38, 6.9
Insert 6.9.1 READ ATTRIBUTE command introduction [to eliminate hanging paragraphs]

ENDL 101
PDF pg 38, 6.9, p 3
Remove the paragraph describing reservation conflicts because that subject is now covered in 6.3.

ENDL 102
PDF pg 38, 6.9, Table 10
Do not capitalize field names such as Element type code, First attribute id, and Allocation length.

ENDL 103
PDF pg 38, 6.9, Table 10, byte 5
Volume number s/b in small caps starting with a lower case v

ENDL 104
PDF pg 38, 6.9, Table 10, byte 6
Capitalize Reserved so that byte 6 looks like bytes 1 and 8.

ENDL 105
PDF pg 38, 6.9, Table 10, byte 7
Partition number s/b in small caps starting with a lower case p

ENDL 106
PDF pg 38, 6.9, 1st p after table 10, s 1
resides (as part of a medium) s/b resides as part of a medium.

ENDL 107
PDF pg 39, 6.9, 1st p on pg, s 2
SPC s/b SPC-3 [only SPC-3 describes MAM]

ENDL 108
PDF pg 39, 6.9, 1st p after table 11, s 1
'command, see SPC' s/b 'command see SPC-3'

ENDL 109
PDF pg 39, 6.9, 2nd p after table 11
ELEMENT LIST service action s/b
6.9.2 ELEMENT LIST service action
(a subclause header)

ENDL 110
PDF pg 39, 6.9, Table 12, bytes 0-3
Available data s/b in small caps starting with a lower case a

ENDL 111
PDF pg 39, 6.9, Table 12, byte 4
Element type code s/b in small caps starting with a lower case e

ENDL 112
PDF pg 39, 6.9, Table 12
Add MSB and LSB information for the FIRST ELEMENT ADDRESS and NUMBER OF ELEMENTS fields.

ENDL 113
PDF pg 39, 6.9, Table 12, bytes 5 & 6
First Element Address s/b in small caps starting with a lower case f

ENDL 114
PDF pg 39, 6.9, Note 5
shall contain s/b contain
(or note 5 is not a note)

ENDL 115
PDF pg 40, 6.10
Insert 6.10.1 READ ELEMENT STATUS introduction [to eliminate hanging

paragraphs]

ENDL 116
PDF pg 40, 6.10, p 1, s 1
target s/b device server & initiator s/b application client

ENDL 117
PDF pg 40, 6.10, Table 13
Add MSB and LSB information for the STARTING ELEMENT ADDRESS, NUMBER OF
ELEMENTS, and ALLOCATION LENGTH fields.

ENDL 118
PDF pg 40, 6.10, 2nd p after table 13, s 1, 3rd p after table 13, s 1 &
s 2
target s/b device server [3 times]

ENDL 119
PDF pg 40, 6.10, p 4 after table 13
Remove the paragraph describing reservation conflicts because that
subject is now covered in 6.3. (Note, this paragraph continues on the
top of PDF pg 41.)

ENDL 120
PDF pg 41, 6.10, 2nd p after table 14, s 1, 3rd p after table 14, s 1 &
s 2
target s/b device server [3 times]

ENDL 121
PDF pg 41, 6.10, 2nd p after table 14, s3
'the target shall transfer all those descriptors that can be completely
transferred' s/b 'the device server shall transfer all those descriptors
whose complete contents fit within the allocation length'

ENDL 122
PDF pg 42, 6.10.1, Table 15
Add MSB and LSB information for the FIRST ELEMENT ADDRESS REPORTED,
NUMBER OF ELEMENTS AVAILABLE, and BYTE COUNT OF REPORT AVAILABLE fields.

ENDL 123
PDF pg 42, 6.10.1, Note 6
can be issued s/b may be issued

ENDL 124
PDF pg 43, 6.10.2, Table 16
Add MSB and LSB information for the ELEMENT DESCRIPTOR LENGTH and BYTE
COUNT OF DATA AVAILABLE fields.

ENDL 125
PDF pg 44, 6.10.3, Table 17
Add MSB and LSB information for the ELEMENT ADDRESS and SOURCE STORAGE
ELEMENT ADDRESS fields.

ENDL 126
PDF pg 46, 6.10.4, Table 18
Add MSB and LSB information for the ELEMENT ADDRESS and SOURCE STORAGE
ELEMENT ADDRESS fields.

ENDL 127
PDF pg 48, 6.10.5, Table 19
Add MSB and LSB information for the ELEMENT ADDRESS and SOURCE STORAGE
ELEMENT ADDRESS fields.

ENDL 128
PDF pg 48, 6.10.5, Table 19, byte 1
'Rsvd' s/b 'RSVD' and 'cmc' should be in small caps.

ENDL 129
PDF pg 50, 6.10.6, Table 20
Add MSB and LSB information for the ELEMENT ADDRESS and SOURCE STORAGE
ELEMENT ADDRESS fields.

ENDL 130
PDF pg 50, 6.10.6, Table 20, byte 6
NOT BUS should begin with a lower case n, ID VALID should begin with a
lower case i, and LU VALID should begin with a lower case l.

ENDL 131
PDF pg 51, 6.10.6, Note 8, s3
can only reflect s/b only reflects

ENDL 132
PDF pg 53, 6.11
Insert 6.11.1 RELEASE ELEMENT (6) introduction [to eliminate hanging
paragraphs]

ENDL 133
PDF pg 53, 6.11, 1st p after table 22, s 1
The following requirement conflicts with the intentions of approved
proposal 02-108r0: 'Attached media changers shall implement the RESERVE
(6) command as defined in the SPC.' Remove it.

ENDL 134
PDF pg 53, 6.11, note 9
Remove this note because the SPC-2 RESERVE(6) command does not define an
EXTENT bit.

ENDL 135
PDF pg 53, 6.11, 1 st p after note 9, s 1
multiple initiator systems s/b configurations with multiple initiators

ENDL 136
PDF pg 53, 6.11, 1 st p after note 9, s 2
RELEASE command s/b RELEASE ELEMENT command

ENDL 137
PDF pg 53, 6.11.1
Logical unit release is not a complementary function to the logical unit
reserve function described in 6.14.1. 6.11.1 needs some form of
counterpart for the 6.14.1 statement: 'If the ELEMENT bit is zero, this
command shall request that the entire logical unit be reserved for the
exclusive use of the initiator as defined in SPC.' However, SPC should
be replaced with SPC-2.

ENDL 138
PDF pg 53, 6.11.1, p 1, s 1, also 6.11.2, p 1, s 1
terminate s/b release & terminated s/b released

ENDL 139
PDF pg 53, 6.11.1, p 1, s 1
initiator s/b SCSI initiator port

ENDL 140
PDF pg 53, 6.11.2, p 1, s 1 & s 2
initiator s/b SCSI initiator port [twice]

ENDL 141
PDF pg 54, 6.12, subclause header
Make the 6.12 header text the same font size as the 6.11 header.

ENDL 142
PDF pg 54, 6.12
Insert 6.12.1 RELEASE ELEMENT (10) introduction [to eliminate hanging
paragraphs]

ENDL 143
PDF pg 54, 6.12, Table 23
Add MSB and LSB information for the PARAEMTER LIST LENGTH field.

ENDL 144
PDF pg 54, 6.12.1, p 1, s 1

RELEASE ELEMENT command
s/b RELEASE ELEMENT (10) command

ENDL 145
PDF pg 54, 6.12.1, p 1, s 1
initiator s/b application client

ENDL 146
PDF pg 54, 6.12.1, p 1, s 1 [x2] & p 2, s 2 [x1]
unit s/b logical unit [3 times]

ENDL 147
PDF pg 54, 6.12.1, p 2, s 2
target s/b SCSI device

ENDL 148
PDF pg 54, 6.12.1, p 2, s 2
target s/b device server

ENDL 149
PDF pg 54, 6.12.1, p 2, s 2
initiator s/b SCSI initiator port

ENDL 150
PDF pg 55, 6.12.1, 2nd p on pg, s 1
In 'the PARAMETER LIST LENGTH', parameter list length should not be in
small caps because it is not followed by the word 'field'. [twice]

ENDL 151
PDF pg 55, 6.12.1, Table 24
Add MSB and LSB information for the THIRD PARTY DEVICE ID field.

ENDL 152
PDF pg 55, 6.13, p 3
Remove the paragraph describing reservation conflicts because that
subject is now covered in 6.3.

ENDL 153
PDF pg 55, 6.13, p5, s2
will be reported s/b shall be reported

ENDL 154
PDF pg 56, 6.13, note 10, s 1
multi-initiator environment s/b configuration with multiple SCSI
initiator devices

ENDL 155
PDF pg 56, 6.13, note 10, s 1
initiator s/b SCSI initiator port

ENDL 156
PDF pg 56, 6.13, Table 25
Add MSB and LSB information for the ELEMENT ADDRESS, NUMBER OF ELEMENTS
TO REPORT, and ALLOCATION LENGTH fields.

ENDL 157
PDF pg 57, 6.13, 1st p on pg, s 3
'the logical unit shall transfer all those descriptors that can be
completely transferred' s/b 'the device server shall transfer all those
descriptors whose complete contents fit within the allocation length'

ENDL 158
PDF pg 57, 6.13, Table 26
Add MSB and LSB information for the FIRST ELEMENT ADDRESS REPORTED,
NUMBER OF ELEMENTS REPORTED, and BYTE COUNT OF REPORT AVAILABLE fields.

ENDL 159
PDF pg 57, 6.13, 2nd p after table 26, s 1
'see the READ ELEMENT STATUS command description' s/b 'see the READ
ELEMENT STATUS command description in 6.10'

ENDL 160
PDF pg 58, 6.14
Insert 6.14.1 RESERVE ELEMENT (6) introduction [to eliminate hanging
paragraphs]

ENDL 161
PDF pg 58, 6.14, Table 27
The line between bytes 3 and 4 should be a dash line, like the line
between bytes 3 and 4 in table 22.

ENDL 162
PDF pg 58, 6.14, 1 st p after table 27, s 1
multiple-initiator systems s/b configurations with multiple SCSI
initiator devices

ENDL 163
PDF pg 58, 6.14, 2nd p after table 27, s 2
The following requirement conflicts with the intentions of approved
proposal 02-108r0: 'Attached media changers shall implement the RESERVE
(6) command as defined in SPC.' Remove it.

ENDL 164
PDF pg 58, 6.14, note 11
Remove this note because the SPC-2 RESERVE(6) command does not define an
EXTENT bit.

ENDL 165
PDF pg 58, 6.14.1, p 1, s 1
initiator s/b SCSI initiator port

ENDL 166
PDF pg 58, 6.14.1, p2 & p 3
Remove the two paragraphs describing reservation conflicts because that
subject is now covered in 6.3.

ENDL 167
PDF pg 59, 6.14.2, p 5, s 1
initiator s/b SCSI initiator port [three times]

ENDL 168
PDF pg 59, 6.14.2, bulleted list
This list should be a 1,2,3 list.

ENDL 169
PDF pg 59, 6.14.2, 1st p after bulleted list, s 1
the ELEMENT LIST LENGTH parameter s/b the ELEMENT LIST LENGTH field

ENDL 170
PDF pg 60, 6.14.2, Table 28
Add MSB and LSB information for the NUMBER OF ELEMENTS and ELEMENT
ADDRESS fields.

ENDL 171
PDF pg 60, 6.14.2, 1 st p after table 28
Remove the paragraph describing reservation conflicts because that
subject is now covered in 6.3.

ENDL 172
PDF pg 60, 6.15
Insert 6.15.1 RESERVE ELEMENT (10) introduction [to eliminate hanging
paragraphs]

ENDL 173
PDF pg 61, 6.15, Table 29
Add MSB and LSB information for the PARAMETER LIST LENGTH field.

ENDL 174
PDF pg 61, 6.15, 1 st p after table 29, s 1
multiple-initiator systems s/b configurations with multiple SCSI

initiator devices

ENDL 175
PDF pg 61, 6.15, note 12
Remove this note because the SPC-2 RESERVE(10) command does not define
an EXTENT bit.

ENDL 176
PDF pg 61, 6.15.1, p 1, s 1
RESERVE command s/b RESERVE ELEMENT (10) command

ENDL 177
PDF pg 61, 6.15.1, p 2, s 3
'The target shall preserve the reservation' s/b 'The reservation shall
be preserved'

ENDL 178
PDF pg 61, 6.15.1, p 2, s 2
RESERVE command s/b RESERVE ELEMENT (10) command

ENDL 179
PDF pg 61, 6.15.1, p 2, s 3 & s 4
initiator s/b SCSI initiator port [4 times]

ENDL 180
PDF pg 61, 6.15.1, p 2, s 4
target s/b device server

ENDL 181
PDF pg 62, 6.15.1, 1st p on pg, s 1
initiator s/b SCSI initiator port [twice]

ENDL 182
PDF pg 62, 6.15.1, 1st p on pg, s 1, 6.15.2, p 1, s 1, & p 1, s 2
RESERVE command s/b RESERVE ELEMENT (10) command [3 times]

ENDL 183
PDF pg 62, 6.15.1, 1 st p on pg, s 2
Delete the following: 'Reservation conflicts shall occur in all cases
where another initiator is not allowed access due to the reservation.'
because it is covered in 6.3.

ENDL 184
PDF pg 62, 6.15.2, p 1, s 1
initiator s/b SCSI initiator port [twice]

ENDL 185
PDF pg 62, 6.15.2, p 1, last s
target s/b device server

ENDL 186
PDF pg 62, 6.15.2, note 13
remove 'principally'

ENDL 187
PDF pg 62, 6.15.2, 1st p after note 13, s 1
THIRD PARTY DEVICE ID is s/b THIRD PARTY DEVICE ID field is

ENDL 188
PDF pg 62, 6.15.2, last p before table 30
extent list length s/b element descriptor list length

ENDL 189
PDF pg 62, 6.15.2, 4th p after note 13, s 1
In 'PARAMETER LIST LENGTH minus', parameter list length should not be in
small caps because it is not followed by the word 'field'.

ENDL 190
PDF pg 62, 6.15.2, Table 30
Add MSB and LSB information for the THIRD PARTY DEVICE ID field.

ENDL 191
PDF pg 63, 6.16, p 2
Remove the paragraph describing reservation conflicts because that
subject is now covered in 6.3.

ENDL 192
PDF pg 63, 6.16, Table 31
Add MSB and LSB information for the ELEMENT ADDRESS and PARAMETER LIST
LENGTH fields.

ENDL 193
PDF pg 63, 6.16, 1st p after table 31, s 2 & s 4
SEND ACTION CODE s/b SEND ACTION CODE field [twice]

ENDL 194
PDF pg 64, 6.16, 1st p on pg, s 2 & s 3
SEND ACTION CODE s/b SEND ACTION CODE field [twice]

ENDL 195
PDF pg 65, 6.16, Table 33
Add MSB and LSB information for the VOLUME IDENTIFICATION TEMPLATE,
MINIMUM VOLUME SEQUENCE NUMBER, and MAXIMUM VOLUME SEQUENCE NUMBER
fields.

ENDL 196
PDF pg 66, 6.16, 1st bulleted list on pg, both bullets
will match s/b shall match

ENDL 197
PDF pg 66, 6.16, bulleted list
This list should be an a,b list.

ENDL 198
PDF pg 66, 6.16, 2nd p after bulleted list, s 2
will meet s/b meets

ENDL 199
PDF pg 67, 6.17, Table 34
Add MSB and LSB information for the ELEMENT ADDRESS and PARAMETER LIST
LENGTH fields. Also VOLUME NUMBER should begin with a lower case v and
PARTITION NUMBER should begin with a lower case p.

ENDL 200
PDF pg 67, 6.17, 1st p after table 34, s 1
resides (as part of a medium) s/b resides as part of a medium

ENDL 201
PDF pg 67, 6.17, 3rd p after table 34, s 1
SPC-2 s/b SPC-3 [the MAM commands are not defined in SPC-2]

ENDL 202
PDF pg 69, 7.2.2, heading
page. s/b page (remove the period)

ENDL 203
PDF pg 69, 7.2.2, p 1, s 2
of this document s/b of this standard

ENDL 204
PDF pg 69, 7.2.2, p 2
Regarding: 'EDITORS NOTE: TapeAlert log page description should be moved
here and renamed to avoid the reference to SSC.'

At a minimum, remove this paragraph. If it is still desirable to move
the TapeAlert log page description to SMC-2, then do so.

ENDL 205
PDF pg 70, 7.3
Insert 7.3.1 Mode parameters overview [to eliminate hanging paragraphs]

ENDL 206
PDF pg 72, 7.3.1, heading, p1, and table 38 title
The current editorial agreement is that 'Device Capabilities' may be
capitalized when it is followed by the exact words 'mode page'.

ENDL 207
PDF pg 72, 7.3.1, p 1, s 3
initiator s/b application client

ENDL 208
PDF pg 72, 7.3.1, 1st p after table 38, s 3
target s/b SCSI device

ENDL 209
PDF pg 73, 7.3.1, bulleted list
This list should be an a,b,c list.

ENDL 210
PDF pg 73, 7.3.1, 2 nd & 3 rd p after bulleted list, last s
In both paragraphs... 'Those which are not valid will be rejected with
ILLEGAL REQUEST.' s/b 'Those that are not valid shall be rejected with a
CHECK CONDITION status and ILLEGAL REQUEST sense key.'

ENDL 211
PDF pg 74, 7.3.2, heading, p1, and table 39 title
The current editorial agreement is that 'Element Address Assignment' may
be capitalized when it is followed by the exact words 'mode page'.

ENDL 212
PDF pg 74, 7.3.2, Table 39
Add MSB and LSB information for the FIRST MEDIUM TRANSPORT ELEMENT
ADDRESS, NUMBER OF MEDIUM TRANSPORT ELEMENTS, FIRST STORAGE ELEMENT
ADDRESS, NUMBER OF STORAGE ELEMENTS, FIRST IMPORT/EXPORT ELEMENT
ADDRESS, NUMBER OF IMPORT/EXPORT ELEMENTS, FIRST DATA TRANSFER ELEMENT
ADDRESS, and NUMBER OF DATA TRANSFER ELEMENTS fields.

ENDL 213
PDF pg 74, 7.3.2, 1st p after table 33, s 3
target s/b SCSI device

ENDL 214
PDF pg 75, 7.3.2, global on pg
target s/b device server [4 times]

ENDL 215
PDF pg 75, 7.3.2, last p before 7.3.3, s 1
must have s/b shall have

ENDL 216
PDF pg 75, 7.3.3, heading, p1, and table 40 title
The current editorial agreement is that 'Transport Geometry Parameters'
may be capitalized when it is followed by the exact words 'mode page'.

ENDL 217
PDF pg 75, 7.3.3, p 1, s 1
defines s/b indicates

ENDL 218
PDF pg 75, 7.3.3, p 1, s 1
'that share a common robotics subsystem' s/b 'that share common
robotics'

ENDL 219
PDF pg 75, 7.3.3, p 1, s 2 & 3
'element. (Other than the default transport element address of zero.)'
s/b 'element (other than the default medium transport address of zero).'
as is the case in the description of FIRST MEDIUM TRANSPORT ELEMENT
ADDRESS.

ENDL 220
PDF pg 75, 7.3.3, p 1, last s
Regarding: 'An attached media changer shall not return this page.'

Remove this sentence because the requirement it states is already stated
in 7.3 and because none of the other mode page descriptions contain a
similar sentence.

ENDL 221
PDF pg 76, 7.3.3, 1st p after table 40, s 3
target s/b SCSI device

ENDL 222
PDF pg 76, 7.3.3, 2nd p after table 41, s 1
'that share a common robotics subsystem' s/b
'that share common robotics'

ENDL 223
PDF pg 76, 7.3.3, Note 15
'(The individual transport element is addressed [not the robotics
subsystem]. An element is defined to be a place where a unit of media
may be at any point in time. See clause 5.)' s/b 'The individual
transport element is addressed, not the robotics subsystem. An element
is defined to be a place where a unit of media may be at any point in
time. See clause 5.'

ENDL 224
PDF pg 77, Annex A, Table
The table in Annex A should have a title, including a table number of
'Table A.1'. The table should have column headings and key information
on every page.

ENDL 225
PDF pg 77, Annex A, code 05h
which s/b that

ENDL 226
PDF pg 77, Annex A, code 06h
Replace 'host interface' with a more specific term, e.g., 'service
delivery subsystem'.

ENDL 227
PDF pg 79, Annex A, code 12h
can not s/b cannot

ENDL 228
PDF pg 81, Annex A
Remove the periods from the list entries in the Type Key and Flag Type
Key lists in the Annex A table note.

****

Comments attached to YesC ballot from Mr. Joe Breher of
Exabyte Corp.:

Exabyte 1
E
doc page 3 - Revision History, Rev 0
"Restored Third Party ID field in Table 24, Reserve Element (10) command."
s/b
"...Table 29..."

Exabyte 2
T
doc page 15 - 3.1.7
"3.1.7 command descriptor block: The structure up to 16 bytes in length used
to communicate commands

from an application client to a device server."
CDBs may be over 16 bytes.

Exabyte 3
E
doc page 19 - 3.3.x
Add definition of 'restricted' as per SPC

Exabyte 4
E
doc page 20 - 4 Overview, several other places
"data transport element"
s/b
"data transfer element"
The (undefined) term data transport element is used in several places in the
document.
So is the (defined) term data transfer element. Data transport element seems
to be an
alias for data transfer element. Suggest replace throughout.

Exabyte 5
E
doc page 22 - 5.1 Independent media changer, 1st sentence:
"An independent mediachanger is a device server that returns..."
s/b
"An independent media changer is a device server that returns..."

Exabyte 6
T
doc page 23 - 5.4 Medium transport element, 1st para, last sentence
"The maximum number of medium transport elements is 127."
Why? This seems like a totally arbitrary restriction.
Suggest removing this bound.

Exabyte 7
E
doc page 24 - 5.6 Import/export element, 1st sentence
"Import/export elements are locations of volumes thatare being inserted into
or..."
s/b
"Import/export elements are locations of volumes that are being inserted into
or..."

Exabyte 8
E
doc page 24 - 5.6 Import/export element, 2nd sentence
"...(i.e., cascaded media changer devices)."
Should "cascaded" be replaced with "connected"? This is the only place in the
entire doc
where "cascade*" is used.

Exabyte 9
T
doc page 27 - Table 2
CHANGE DEFINITION is obsolete in SPC-2, SPC-3. We should probably remove it
from this table.

Exabyte 10
T
doc page 27 - Table 2
Opcode for RELEASE ELEMENT (6) is listed as 16h.
s/b

17h

Exabyte 11
E
doc page 28 - Table 2
"SEND DIAGNOSTIC" is in different font from other entries.

Exabyte 12
T
doc page 28 - 2nd sentence after Table 2
"All other operation codes are reserved."
s/b
"All other operation codes are restricted."

Exabyte 13
E
doc page 29 - 6.3, 4th para
"allowed: Commands issued by initiators not holding the reservation or by
initiators not registered when
a registrantsonly persistent reservation is present should complete normally."
s/b
"...not registered when a registrants only persistent..."

Exabyte 14
E
doc page 34 - 6.6 INITIALIZE ELEMENT STATUS WITH RANGE, 1st sentence
Word "INITIALIZE" missing
Also, why is the 1st para not similar text to that for 6.5 INITIALIZE ELEMENT
STATUS?

Exabyte 15
T
doc page 38 - 6.9 READ ATTRIBUTE command
SPC-3 defines this as a 16 byte CDB - we should match.

Exabyte 16
E
doc page 38 - 6.9 READ ATTRIBUTE command, para after Table 10, last sentence
"Not that this field forms an additional..."
s/b
"Note that this field forms an additional..."

Exabyte 17
E
doc page 39 - 6.9 READ ATTRIBUTE, 1st sentence on page, sentence after Table
11
READ ATTTRIBUTE does not appear in SPC, SPC-2. Should the reference therefore
be to SPC-3?

Exabyte 18
?
doc page 39 - Table 12
Should this table be formatted as descriptors?

Exabyte 19
E
doc page 48, Table 19
cmc bit
s/b
capitalized - it is a field name.

Exabyte 20
E
doc page 56, last sentence
"When the SEND ACTION CODE is assert, replace, and undefine, the ELEMENT
ADDRESS field
gives the particular element whose volume tag information was modified."
s/b
"When the SEND ACTION CODE is assert, replace, or undefine, ..."

Exabyte 21
E
doc page 67, last sentence
"For the definitions of all other fields, and parameter data format, see SPC-
2."
s/b
"...see SPC-3."
WRITE ATTRIBUTE not in SPC-2

Exabyte 22
E
doc page 69, Table 36
Log page codes 01h-05h, 08h-0Ah, 0Ch are listed as reserved
s/b listed as restricted.

Exabyte 23
E
doc page 69, last sentence
resolve and remove editor's note

Exabyte 24
E
doc page 71, Table 37
Log page codes 01h, 03h-09h, 0Bh-17h, 1Bh are listed as reserved
s/b listed as restricted.
Log page code 2Ah is listed as Vendor-specific (page format required)
s/b listed as restricted.

Exabyte 25
?
doc page 71, Table 37
I think this is really an issue with SPC-x, but I bring it up here.
SPC, SPC-2, and SPC-3 each have a numerically ordered listing of mode page
codes.
In each of these docs, they list code 1Dh as associated with Transport
geometry parapmeters page
and 1Eh as associated with Element address assignment page. SPC-x explicitly
defers the assignment
of these codes to device type specific documents elsewhere within SPC-x.
I believe SPC-x is therefore in error.
As the useage in SMC and SMC-2 reflect industry practice (at least to my
knowledge), I would like
SMC and SMC-2 to remain as they are on this point.

****

Comments attached to No ballot from Mr. Michael Banther of
Hewlett Packard Co.:

HP #1
PDF Page 1

Cover page and global
Change "SCSI-3 Media Changer Commands - 2" to "SCSI Media Changer Commands-
2". All the second revisions of the command standards have dropped the -3 from
the SCSI prefix in their titles.

HP #2
PDF Page 1
Cover page
Change "SMC Technical Editor" to "Technical editor" since this is now SMC-2

HP #3
PDF Page 1
Cover page
Change Acredited to Accredited

HP #4
PDF Page 1
Cover page
Remove comma after CO in the address

HP #5
PDF Page 2
Points of Contact
Remove trailing / from all web site addresses
Change the T10 information to:
Web Site: http://www.t10.org
E-mail reflector:
Server: majordomo@t10.org
To subscribe, send e-mail with 'subscribe t10' in the message body
To unsubscribe, send e-mail with 'unsubscribe t10' in the message body

HP #6
PDF Page 6
Foreword
Update the "SCSI-3 Architecture Model (SAM)" reference to SAM-2

HP #7
PDF Page 6
Foreword
Change "device type" to "peripheral device type" in small caps.

HP #8
PDF Page 7
Introduction
Change "seven clauses" to "the following clauses" since the annexes are also
listed

HP #9
PDF Page 9
Figures and Tables
Remove blank lines between rows in the lists of figures and tables

HP #10
PDF Page 10
Tables
Spacing around the emdash is inconsistent in the table headers. 4 and 5 have
no space after the table number. 11 and 14 have no space before the table
title. There should be spaces on both sides for all of them.

HP #11
PDF Page 11
Annexes
Include the annexes (if any remain) as part of the Contents section.

HP #12
PDF Page 12
1 Scope
Page 12 should be page 1. All preceding pages should be numbered i, ii, iii,
etc.

HP #13
PDF Page 12
1 Scope
Change sets "the MCHNGR bit in" to "the MCHNGR bit to one in the"

HP #14
PDF Page 12
1 Scope
Delete "over a SCSI service delivery subsystem."

HP #15
PDF Page 12
1 Scope
Change bulleted list into an a) b) c) list.

HP #16
PDF Page 12
1 Scope
Change "DEVICE TYPE" to "PERIPHERAL DEVICE TYPE"

HP #17
PDF Page 13
1 Scope
I suggest removing page 13, the page with the "At the time this standard was
generated examples of the SCSI-3 general structure included:" list of other
standards. This kind of list is always out of date and incomplete.

HP #18
PDF Page 14
2 Normative references
Update to SAM-2 and SPC-2.
Add References under development listing SAM-3 and SPC-3. Then globally change
references to SAM and SPC to SAM-2 and SPC-2 (or SPC-3)

HP #19
PDF Page 14
2 Normative References
Uncapitalize References in the section header.

HP #20
PDF Page 15
3.1 Definitions
Remove "This clause contains a glossary of special terms used in this
standard. These terms apply to SMC-2 and do not constitute a comprehensive
glossary for SCSI-3." This is a hanging paragraph and is not really necessary.

HP #21
PDF Page 15
3.1.4 autosense data
Remove this definition - only used by the definition of "sense data."

HP #22
PDF Page 15
3.1.7 command descriptor block
Add (CDB) to the bold part of the definition. The phrase "up to 16 bytes in
length" is no longer true; see SPC-2 for the latest definition.
You may not need to include any of the terms that are already defined in SAM-2
and SPC-2, since those documents are listed as normative references.
Additional sense code, application client, byte, command, command descriptor
block, etc. could all be deleted.

HP #23
PDF Page 17
3.1.32 sense data
Remove this definition. Not used in text.

HP #24
PDF Page 18
3.2 Symbols and abbreviations
Format the abbreviations list as a table without row or column lines showing.

22

HP #25
PDF Page 18
3.3.4 may
Add a definition of "may not: Keywords indication flexibility of choice with
no implied preference."

HP #26
PDF Page 19
3.3.9 should
Put the period inside the quotes in recommended".

HP #27
PDF Page 20
4 Overview
1st paragraph
Change "multi-media" to "multimedia"

HP #28
PDF Page 20
4 Overview
1st paragraph
Change SBC, MMC and SSC to SBC-2, MMC-4, and SSC-2.

HP #29
PDF Page 20
4 Overview
3rd paragraph
Change "maintains an inventory of volumes and the element address they can be
found" to "maintains an inventory of volumes and the element addresses with
which they may be accessed."

HP #30
PDF Page 20
4 Overview
3rd paragraph
Change "identifying" to "identifies"

HP #31
PDF Page 20
4 Overview
2nd paragraph
"The element types are storage, data transfer, medium transport, and
import/export."
Make this into an a) b) c) list, sorted like other references:
a) medium transport;
b) storage;
c) import/export; and
d) data transfer

HP #32
PDF Page 21
4 Overview
Figure 2 Example independent media changer and several places in the text
"Data Transport Element" should be "Data transfer element"

HP #33
PDF Page 21
4 Overview
Figure 2
Move the "Medium Changer Logical Unit" closer to the shaded box on the bottom
(perhaps make the box bigger so the label fits inside the box) and change it
to "Media changer logical unit."

HP #34
PDF Page 21
4 Overview
Figure 2 - Example independent media changer device.
Remove the period at the end of the figure title

23

HP #35
PDF Page 21
4 Overview
Figure 2 - Example independent media changer device
Add some "volume"s to the picture.

HP #36
PDF Page 21
4 Overview
In "via the same SCSI ID as the primary device, or via a different SCSI ID."
SCSI ID is a parallel-SCSI specific term. Use "target port identifier"
instead.

HP #37
PDF Page 21
4 Overview
Figure 2 - Example independent media changer device
Add a "primary device" connected to each "data transport element". The "port"
is part of the primary device rather than the element. Add a "media changer"
box around all the elements and the medium changer logical unit, but not
around the primary devices.

HP #38
PDF Page 21
4 Overview
Add a figure showing the attached media changer model too.

HP #39
PDF Page 21
4 Overview and global
The document uses "domain" or "media changer's domain" a few times. This is
easily confused with SCSI domain. I think you can phrase it such that the
elements are just part of the media changer device itself rather than its
domain. For example, the sentence on the bottom of page 21 could just be
"Media changers shall be capable of reporting the full or empty status of any
element."

HP #40
PDF Page 21
4 Overview
Bottom of page 21
Change "several element types" to "several elements" - movement is by specific
address, not element type.

HP #41
PDF Page 21
4 Overview
Bottom of page 21
"Media changers shall be.. in its domain" mixes plural and singular. Change to
"Media changers...in their domains" or "A media changer...in its domain"

HP #42
PDF Page 21
4 Overview
Mention that multiple media changers may be cascaded with their import/export
elements in this section.

HP #43
PDF Page 22
5.1 Independent media changer
Change "Independent media changers for the SMC-2 standard respond to" to
"Independent media changers respond to"

HP #44
PDF Page 22
5.1 Independend media changer
Add command after LUN in the 3rd paragraph

HP #45
PDF Page 22

5.2 Attached media changer
The definition of primary device includes that it is not a media changer, so
"a primary device that is not a media changer." can just be "the primary
device." Somewhere in this section, add a list of primary device types (block,
sequential, multimedia)

HP #46
PDF Page 22
5.3 Media changer elements
Move this text into 5.3.1(Overview)
Move 5.4 into 5.3.2 (Medium transport element)
Move 5.5 into 5.3.3 (Storage element)
Move 5.6 into 5.3.4 (Import/export element)
Move 5.7 into 5.3.5 (Data transfer element)
Move 5.8 into 5.3.6 (Element status maintenance requirements)

HP #47
PDF Page 22
5.3 Media changer elements
Make the bulleted list into an a) b) c) list, and don't capitalize each word.

HP #48
PDF Page 22
5.3 Media changer elements
Change "may provide storage for zero or one volume." to "is capable of storing
one volume."

HP #49
PDF Page 23
Global (technical)
Remove:
RESERVE ELEMENT (6)
RESERVE ELEMENT (10)
RELEASE ELEMENT (6)
RELEASE ELEMENT (10)
in favor of PERSISTENT RESERVE OUT for all the same reasons that they have
been obsoleted from SPC-3 and other command set standards. SPC-3 section 5.9
also needs to be updated to remove its references to them.

HP #50
PDF Page 23
5.3 Media changer elements
Change "import export" to "import/export"

HP #51
PDF Page 23
5.3 Media changer elements
Change "device capabilities page" to "Device Capabilities mode page"

HP #52
PDF Page 23
5.3 Media changer elements
Change "Each element type shall be assigned a contiguous number range" to
"Each element type shall be assigned a contiguous range of element addresses"
and adjust the rest of the paragraph accordingly

HP #53
PDF Page 23
5.4 Medium transport element
Change "transport geometry mode parameters." to "Transport Geometry Parameters
mode page."

HP #54
PDF Page 24
5.4 Medium transport element
Change "medium transport element address" to "medium transport address" in
small caps

HP #55
PDF Page 24

25

5.5 Storage element
Change "SMC-2 device" to "media changer"

HP #56
PDF Page 24
5.6 Import/export element
Add space to "thatare"

HP #57
PDF Page 24
5.6 Import/export element
Remove "when present in a media changer logical unit."

HP #58
PDF Page 25
5.7 Data transfer element
Change "media, see the device capabilities mode parameters." to media; the
Device Capabilities mode page indicates whether independent storage is
provided."

HP #59
PDF Page 25
5.8 Element status maintenance requirements
Change i.e., to e.g.,

HP #60
PDF Page 25
5.9 Volume tag information
Move the 5.9 text into 5.9.1 Overview
Move 5.10 into 5.9.2 (Primary and alternate volume tag information)
Move 5.11 into 5.9.3 (Volume tag information format)

HP #61
PDF Page 25
5.9 Volume tag information
Change "or by other means which may be vendorspecific." to "or by
vendor-specific means."

HP #62
PDF Page 25
5.9 Volume tag information
Change "whether" to "regardless of whether"

HP #63
PDF Page 25
5.9 Volume tag information
Remove "or a volume."

HP #64
PDF Page 25
5.9 Volume tag information
Change "The media changer command set definition" to "This standard"

HP #65
PDF Page 25
5.9 Volume tag information
Change bulleted list to an a) b) c) list.

HP #66
PDF Page 26
5.10 Primary and alternate volume tag information
Change "partition of a volume" to "other side of a volume"

HP #67
PDF Page 26
5.10 Primary and alternate volume tag information
Change "All volumes have" to "All volumes shall have"

HP #68
PDF Page 26

5.11 Volume tag information format
Table 1 - Volume tag information format
Add (MSB) and (LSB) to the volume sequence number field (but not to the volume
identification field)

HP #69
PDF Page 26
5.10 Primary and alternate volume tag information
Change "MOVE MEDIUM" to "MOVE MEDIUM or EXCHANGE MEDIUM" since both have
INVERT bits.

HP #70
PDF Page 26
5.10 Primary and alternate volume tag information
Once a volume is loaded inverted, do the primary and alternate volume tags
swap roles? Or is the primary tag always the primary tag?

HP #71
PDF Page 27
6.1 Summary of commands for independent media changers
Table 2 - Commands for independent media changers
This table should fit on one page if the rows are separated by less
whitespace.

HP #72
PDF Page 27
6.1 Summary of commands for independent media changers
Table 2 - Commands for independent media changers
Delete:
CHANGE DEFINITION 40h O SPC
Add "Operation code 40h is obsolete" after the table.

HP #73
PDF Page 27
6.1 Summary of commands for independent media changers
Table 2 - Commands for independent media changers
Change Subclause to Reference

HP #74
PDF Page 27
6.1 Summary of commands for independent media changers
Table 2 - Commands for independent media changers
Make PERSISTENT RESERVE IN and OUT mandatory (and have SPC-3 updated to match)

HP #75
PDF Page 27
6.1 Summary of commands for independent media changers
Table 2 - Commands for independent media changers
SPC-3 Table B.2 lists RESERVE/RELEASE ELEMENT 6/10 as mandatory. SPC-3 and
SMC-2 should match.

HP #76
PDF Page 27
6.1 Summary of commands for independent media changers
Table 2 - Commands for independent media changers
Add the following optional commands:
REZERO UNIT 01h SPC-3
ACCESS CONTROLS IN 86h SPC-3
ACCESS CONTROLS OUT 87h SPC-3
MAINTENANCE IN A3h SCC-2
MAINTENANCE OUT A4h SCC-2
REDUNDANCY GROUP IN BAh SCC-2
REDUNDANCY GROUP OUT BBh SCC-2
SPARE IN BCh SCC-2
SPARE OUT BDh SCC-2
VOLUME SET IN BEh SCC-2
VOLUME SET OUT BFh SCC-2
REPORT DEVICE IDENTIFIER A3h/05h SPC-3
REPORT TARGET PORT GROUPS A3h/0Ah SPC-3
REPORT ALIASES A3h/0Bh SPC-3

REPORT SUPPORTED OPERATION CODES A3h/0Ch SPC-3
SET DEVICE IDENTIFIER A4h/06h SPC-3
SET TARGET PORT GROUPS A4h/0Ah SPC-3
CHANGE ALIASES A4h/0Bh SPC-3

HP #77
PDF Page 28
6.2 Summary of commands for attached media changers
Change MOVE MEDIUM ATTACHED * to MOVE MEDIUM *
Change READ ELEMENT STATUS ATTACHED * to READ ELEMENT STATUS *

HP #78
PDF Page 28
6.2 Summary of commands for attached media changers
SPC-3 lists A7h and B4h as "M" for media changer devices. They are really not
allowed for independent changers (meaning they should not be in the SPC-3
column at all), but are mandatory for attached changers. SPC-3 may need
another column to differentiate attached media changers from independent.

HP #79
PDF Page 28
6.1 Summary of commands for independent media changers
This is incomplete:
"Operation codes 0Ch and C0h through FFh are vendor-specific." It should say:
"Operation codes 02h, 05h, 06h 08h, 09h, 0Ah, 0Bh, 0Ch, 0Dh, 0Eh, 0Fh, and C0h
through FFh are vendor-specific." to match SPC-3.

HP #80
PDF Page 28
6.1 Summary of commands for independent media changers
The sentence "All other operation codes are reserved." needs to be preceded by
a list of obsolete operation codes: "Operation code 40h (CHANGE DEFINITION) is
obsolete."

HP #81
PDF Page 28
6.2 Summary of commands for attached media changers
Table 3 - Commands for attached media changers
Rather than use * in the command name column, create a new type code other
than O that represents "optional operation codes for use by sequential devices
only."

HP #82
PDF Page 30
6.3 Commands allowed in the presence of various reservations
Table 4 - Reservation table
Remove Column A if RESERVE ELEMENT/RELEASE ELEMENT are obsoleted.

HP #83
PDF Page 30
6.3 Commands allowed in the presence of various reservations
Table 4 - Reservation table
If RESERVE ELEMENT/RELEASE ELEMENT remain, The "Allowed" for RELEASE ELEMENT
needs a note that "The reservation is not released." (as done in SPC-2)

HP #84
PDF Page 31
6.4 EXCHANGE MEDIUM command
and globally in all the command descriptions
Delete the paragraph: "A reservation conflict shall occur if an EXCHANGE
MEDIUM command is received from an initiator other than the one holding a
logical unit or element reservation." This is covered by the big reservation
table in 6.3.

HP #85
PDF Page 31
6.4 EXCHANGE MEDIUM command
Remove comma from "address," in the second line.

HP #86

PDF Page 32
6.4 EXCHANGE ELEMENT command
On Page 32 define "empty," as "empty (i.e., set to zero)".

HP #87
PDF Page 32
6.4 EXCHANGE MEDIUM command
Add period after FULL on page 32.

HP #88
PDF Page 32
6.4 EXCHANGE MEDIUM command
Change INV1 to INVERT FIRST and INV2 to INVERT SECOND to better match wording
in 5.10 and MOVE MEDIUM.

HP #89
PDF Page 33
6.5 INITIALIZE ELEMENT STATUS command and global
Change "Initiator" to "initiator" or "application client".

HP #90
PDF Page 34
6.6 INITIALIZE ELEMENT STATUS WITH RANGE command
First paragraph is missing "The INITIALIZE" before "ELEMENT"

HP #91
PDF Page 35
6.7 MOVE MEDIUM command
Table 8 - MOVE MEDIUM command
Change "INV" to "INVERT" to match text throughout the document

HP #92
PDF Page 35
6.7 MOVE MEDIUM command
Change title to "MOVE MEDIUM and MOVE MEDIUM ATTACHED commands" in the section
header and table 8 header

HP #93
PDF Page 35
6.7 MOVE MEDIUM command
Add to "OPERATION CODE" "(A5h or A7h)

HP #94
PDF Page 35
6.7 MOVE MEDIUM command and global
Change "target" to "media changer" in first sentence of this section and
elsewhere in the document where appropriate.

HP #95
PDF Page 35
6.7 MOVE MEDIUM command and globally
Change "target" to "logical unit" near bottom of page (twice) and elsewhere in
the document where discussing CHECK CONDITIONs and other logical unit states.

HP #96
PDF Page 38
6.9 READ ATTRIBUTE command
Table 10 - READ ATTRIBUTE command
and
6.17 WRITE ATTRIBUTE command
Table 34 WRITE ATTRIBUTE command
Make Volume number and Partition number small caps

HP #97
PDF Page 38
6.9 READ ATTRIBUTE command
Make "element address" small caps below the table

HP #98
PDF Page 38

6.9 READ ATTRIBUTE command
Table 10 - READ ATTRIBUTE command
Change mixed capital/small cap in ELEMENT TYPE CODE and ALLOCATION LENGTH to
all small cap

HP #99
PDF Page 39
6.9 READ ATTRIBUTE command
The ELEMENT LIST service action line looks like a section header. If that's
the intention, move the previous text into 6.9.1 and make this 6.9.2 to avoid
hanging paragraphs.

HP #100
PDF Page 39
6.9 READ ATTRIBUTE command
Table 12 - Parameter data for ELEMENT LIST service action
Make Element type code and First Element Address small caps

HP #101
PDF Page 39
6.9 READ ATTRIBUTE command
Table 11 - READ ATTRIBUTE service action code
Add a double line below the header row.

HP #102
PDF Page 40
6.10 READ ELEMENT STATUS command
Table 13 - READ ELEMENT STATUS command
After "OPERATION CODE" add "(B8h or B4h)"

HP #103
PDF Page 40
6.10 READ ELEMENT STATUS command
Move the hanging paragraphs into a new 6.10.1

HP #104
PDF Page 40
6.7 READ ELEMENT STATUS command
Change title to "READ ELEMENT STATUS and READ ELEMENT STATUS ATTACHED
commands" in the section header, table 13 header, and appropriate text

HP #105
PDF Page 41
6.9 READ ATTRIBUTE command
Table 14 - Element type code
Left justify Description

HP #106
PDF Page 41
6.9 READ ATTRIBUTE command
Table 14 - Element type code
In table 10, table 12, table 16, etc. ELEMENT type code is an 8 bit field.
In table 13 and 14, it's treated as a 4 bit field.
If Table 14 is the reference for all locations, it needs to mention the
disposition of values 10h-FFh.

HP #107
PDF Page 41
6.10 READ ELEMENT STATUS command
Table 14 - Element type code
Remove comma in "reported,"

HP #108
PDF Page 41
6.10 READ ELEMENT STATUS command
After "device identifiers," add "(see 6.10.7)" - this is the first time the
term is used. Since SAM-2 now has a well defined "SCSI device identifier", a
name change for element device identifiers may be a good idea.

HP #109

PDF Page 41
6.10 READ ELEMENT STATUS command
6.13 REQUEST VOLUME ELEMENT ADDRESS command (technical)
This is misleading:
"If the ALLOCATION LENGTH is not sufficient to transfer all the element
descriptors, the logical unit shall transfer all those descriptors that can be
completely transferred and this shall not be considered an error."
If a descriptor cannot be "completely transferred" it should be partially
transferred. The data structure returned must not change at all based on
allocation length.
The same wording is on page 14 and 57. Page 42 may need some clarification
too.

HP #110
PDF Page 42
6.10 READ ELEMENT STATUS command,
6.10.1 Element status data and globally
Change "6.10.2 through 6.10.7" to "6.10.2, 6.10.3, 6.10.4, 6.10.5, 6.10.6, and
6.10.7"

HP #111
PDF Page 42
6.10 READ ELEMENT STATUS command
6.10.1 Element status data
NOTE 6
Change "can" to "may"

HP #112
PDF Page 45
6.10.3 Medium transport element descriptor
Page 45 and global
Change IDENFIFIER LENGTH to IDENTIFIER LENGTH

HP #113
PDF Page 45
6.10.3 Medium transport element descriptor (technical)
If you invert the same volume twice, does this bit go back to zero? Or it is
always one after the first inversion?

HP #114
PDF Page 51
6.10.6 Data transfer element descriptor (technical)
The 8-bit SCSI BUS ADDRESS field is unsuitable for Fibre Channel, Serial
Attached SCSI, iSCSI, and other modern SCSI transport protocols.
The 3-bit LOGICAL UNIT NUMBER field is out of date even for parallel SCSI
(non-packetized has a 6-bit LUN field). All other protocols support 8-byte
LUNs. Both these fields should be obsoleted in favor of a new solution using
the EXTENDED COPY target descriptor (aka logical unit descriptor) data format
(with alias list support for iSCSI). For compatibility with old software,
require that NOT BUS be set to one and LU VALID (should be called LUN VALID)
be set to zero.

HP #115
PDF Page 56
6.13 REQUEST VOLUME ELEMENT ADDRESS command (technical)
How about making this command fail if it is run by an initiator different than
the one that send the SEND VOLUME TAG command. Add an additional sense code to
report this reason, like WRITE BUFFER/READ BUFFER do for accesses to the echo
buffer in SPC-3.

HP #116
PDF Page 56
6.13 REQUEST VOLUME ELEMENT ADDRESS command
In element address description, change "gives" to "specifies"

HP #117
PDF Page 56
6.13 REQUEST VOLUME ELEMENT ADDRESS command
Table 25 - REQUEST VOLUME ELEMENT ADDRESS command
Move Table 25 up under the first paragraph of the section where it is

introduced. It is currently floating on the next page.

HP #118
PDF Page 57
6.13 REQUEST VOLUME ELEMENT ADDRESS command
Table 26 - Volume element address header
Move Table 26 up after the paragraph in which it is introduced.

HP #119
PDF Page 66
6.16 SEND VOLUME TAG command
On page 66, change "will match" to "matches" twice and "will meet" to "meets"

HP #120
PDF Page 67
6.17 WRITE ATTRIBUTE command.
Remove period from section header.

HP #121
PDF Page 68
7 Parameters
Move the hanging paragraph into a new 7.1.

HP #122
PDF Page 68
7.1 Diagnostic parameters
Change table contents to:
00h Supported diagnostic pages
01h - 1Fh SES diagnostic pages (Reference SES)
10h - 3Fh Diagnostic pages assigned by SPC-3 (Reference SPC-3)
40h - 7Fh Reserved (for this standard)
80h - FFh Vendor-specific diagnostic pages
(note: SES is trying to take ownership of 10h-1Fh too)

HP #123
PDF Page 68
7.1 Diagnostic parameters
Table 35 - Diagnostic page codes
Change Subclause to Reference

HP #124
PDF Page 68
7.2.1 Log page codes for independent media changers.
The log page section header includes "for independent media changers" but
diagnostic pages and mode pages do not. They should be consistent, since all
of the pages are for independent media changers.

HP #125
PDF Page 69
7.2.2 TapeAlert page.
Change title to "TapeAlert log page"

HP #126
PDF Page 69
7.2.1 Log page codes for independent media changers
Table 36 - Log page codes
Make capitalization match new rules (mixed case; always say "log page"
afterwards). Make sure all the page codes use h rather than H.
The log pages should be:
00h Supported Log Pages
06h Non-Medium Error log page
07h Last n Error Events log page
0Bh Last n Deferred Errors log page
0Dh Temperature log page
0Eh Start-Stop Cycle Counter log page
0Fh Application Client log page
10h Self-Test Results log page
2Eh TapeAlert log page (this must be added to SPC-3)
2Fh Informational Exceptions log page
30h - 3Fh Vendor-specific

All others Reserved

HP #127
PDF Page 69
7.2.2 TapeAlert page
This should be done "EDITORS NOTE: TapeAlert log page description should be
moved here and renamed to avoid the reference to SSC."

HP #128
PDF Page 69
7.2.1 Log page codes for independent media changers
Table 36 - Log page codes
Subclause to Reference

HP #129
PDF Page 70
7.3 Mode parameters
Move the hanging paragraphs into a new 7.3.1.

HP #130
PDF Page 71
7.3 Mode parameters
Table 37 - Mode page codes
Make capitalization match SPC-3 (mixed case; always use "mode page").
Add 02h and 0Ah to SPC-3.
1Dh and 1Eh are swapped in SPC-3.
20h-3Eh do NOT require page format.

HP #131
PDF Page 72
7.3.1 Device capabilities mode page and global
Change capitalization to "Device Capabilities mode page"

HP #132
PDF Page 72
7.3.1 Device capabilities mode page
Change "initiator" to "application client"

HP #133
PDF Page 73
7.3.1 Device capabilities mode page
Change "destinations, that" to "destinations and that" on page 73

HP #134
PDF Page 73
7.3.1 Device capabilities mode page
Page 73 asserts that "The value of STORST is one by the definition of that
type (see 5.5)." However, storage elements are not required to be present, so
STORST is only one if a storage element exists. Reword this sentence to make
that more apparent.

HP #135
PDF Page 73
7.3.1 Device capabilities mode page
Change "Those which are not valid will be rejected with ILLEGAL REQUEST." To
"MODE MEDIUM commands which are not valid shall be rejected with a sense key
oof ILLEGAL REQUEST (see 6.7). and make a similar change in the EXCHANGE
MEDIUM paragraph that follows.

HP #136
PDF Page 74
7.3.2 Element address assignment mode page and global
Change capitalization to "Element Address Assignment mode page"

HP #137
PDF Page 75
7.3.3 Transport geometry parameters mode page and global
Change capitalization to "Transport Geometry Parameters mode page"

HP #138

PDF Page 75
7.3.2 Element address assignment mode page and global
Change "The sense key shall be ILLEGAL REQUEST and the additional sense code
PARAMETER VALUE INVALID." to "The sense key shall be set to ILLEGAL REQUEST
and the additional sense code shall be set to PARAMETER VALUE INVALID." Make
similar changes throughout the document.

HP #139
PDF Page 75
7.3.1 Element address assignment mode page
After "If the address ranges defined for any of the element types overlap,"
add "for a MODE SELECT command"

HP #140
PDF Page 75
7.3.3 Transport geometry parameters mode page
Move "(Other than the default transport element address of zero.)" into the
previous sentence: "transport element (other than...zero)."

HP #141
PDF Page 76
7.3.3 Transport geometry parameters mode page
NOTE 15
Remove parenthesis and brackets from "(The individual transport element is
addressed [not the robotics subsystem]. An element is defined to be a place
where a unit of media may be at any point in time. See clause 5.)"

HP #142
PDF Page 77
Annex A
This section needs an A.1 section with introductory text. The table needs a
table title and number. Make the last horizontal line above the key a
double-line.

HP #143
PDF Page 82
Annex B Bibliography
Delete Annex B. The Normative references section should list other standards
of import (any standard mentioned in the text can be listed there).

HP #144
PDF Page 22
5.3 Media changer elements
The sentence, 'The point in time during movement when a volume is considered
in a different element is implementation dependent.' does not specify an
element that a volume is in at the beginning of the movement. Hence the
phrase '...when a volume is considered in a different element ...' begs the
question, different from what element? Suggest changing to, 'When moving from
one element to another, the point in time when the volume changes element
address depends on the implementation.'

HP #145
PDF Page 29
6.3 Commands allowed in the presence of various reservations
Change 'registrantsonly' to 'registrants only'

HP #146
PDF Page 30
Table 4
Change 'RESERVE ELEMENT (6)/RELEASE ELEMENT (10)' to 'RESERVE ELEMENT
(6)/RESERVE ELEMENT (10)'

HP #147
PDF Page 37
6.8 Position to element
The description of this command fails to include what happens under exception
conditions.
Add, 'The MEDIUM TRANSPORT ADDRESS field specifies the medium transport
element used to execute this command. The default transport element address of
zero may be used. If the MEDIUM TRANSPORT ADDRESS element has not been

assigned or that element address has been assigned to a different element
type, the logical unit shall return CHECK CONDITION status. The sense key
shall be ILLEGAL REQUEST and the additional sense code INVALID ELEMENT
ADDRESS.

'The DESTINATION ADDRESS field may represent a storage element, an
import/export element, a data transfer element, or a medium transport element.
If the address specified has not been assigned to a specific element of the
media changer, the target shall return CHECK CONDITION status. The sense key
shall be ILLEGAL REQUEST and the additional sense code INVALID ELEMENT
ADDRESS.

'The device capabilities MODE SENSE page (see 7.3.1), provides a matrix with
the supported source element or destination element combinations for the MOVE
MEDIUM command.

'An INVERT bit of one specifies that the volume shall be inverted or rotated
prior to depositing the medium into the DESTINATION ADDRESS element. If the
media changer does not support volume rotation for handling double-sided
media, the INVERT bit should be set to zero. If this bit is one, a target that
is not capable of volume rotation shall return CHECK CONDITION status. The
sense key shall be ILLEGAL REQUEST and the additional sense code INVALID FIELD
IN CDB.'

HP #148
PDF Page 38
6.9 Read attribute command
Change 'medium reisding in a data' to 'medium residing in a data'.

HP #149
PDF Page 38
Table 10
Describes a fourteen byte command.   Byte numbers 8 and 9 duplicated.

HP #150
PDF Page 38
6.9 Read attribute command
Change 'Not' to 'Note'.

HP #151
PDF Page 39
Table 12
Does not explain how a medium changer returns a non-contiguous list of element
addresses using the Element List service action.

HP #152
PDF Page 39
Note 5
Change 'Since all the element addresses shall' to 'Since all element addresses
may not'.

HP #153
PDF Page 50
Table 20
Does not provide support for multi-ported data transport element.

HP #154
PDF Page 62
6.15.2 Superseding reservations
Change 'extent list' to 'element descriptor list'.

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Comments attached to Abs ballot from Mr. George O. Penokie of
IBM / Tivoli Systems:

Not materially affected by this standard.

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Comments attached to Abs ballot from Mr. Edward A. Gardner of
Ophidian Designs:

I have no particular competence or interest in medium changers.


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Comments attached to YesC ballot from Mr. Charles Binford of
Pirus Networks:

The change bars and strikeouts need to be removed.   Especially in section 6.3.


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Comments attached to No ballot from Mr. Paul Entzel of
Quantum Corp.:

1. Section 3.1.1. The term "command response data" is not defined in this
standard, SAM, SAM-2, SPC, or SPC-2. I think the term that should be used
here is simply "data".

2. Section 3.1.2. Extent reservations were made obsolete in SPC-2. This
standard refers to Element reservations instead of Extent reservation. Even
if Extent reservations were to remain in this standard, this definition does
not make sense for a medium changer device.

3. Section 4, forth paragraph. Is it possible to reserve the Medium
Transport element with an element reservation? If so, what effect would
that have on a command that otherwise would not have reservation problems
(the source and destination elements are not reserved)?

4. Section 5.1, first paragraph. "mediachanger" needs a space.

5. Section 5.2, first paragraph. The wording of the first sentence in this
paragraph sounds as if MCHNGR will only be set if the device supports an
attached medium changer. That is not consistent with SPC or SPC-2. Suggest
the wording be changed to: "An attached medium changer is part of a device
server that returns a value other than 8h in the PERIPHERAL DEVICE TYPE
field (See SPC-2) of an INQUIRY command response data. A device that
supports the attached media changer command set shall set the MCHNGR bit to
one in its standard INQUIRY data (See SPC-2). This bit may also be set to
one if the device server detects that the device is embedded within a
independent media changer device."

6. Section 5.6, first paragraph. "thatare" needs a space.

7. Section 5.9, second paragraph. I'm not sure about this requirement
anymore. With the inclusion of MAM in many devices and medium now, should
we consider removing this requirement? When medium changers include MAM
readers/writers can it save the SEND VOLUME TAG information in the MAM?

8. Section 5.10, first paragraph. The implied definition of "partition of a
volume" as the term is used here is different than other SCSI devices. A
clarification of this term would be helpful.

9. Section 6.1, Table 2. It seems kind of silly to release this standard
based off of SPC when SPC-2 is so far along and the base for other device
standards that are farther along in the process than this one (SSC-2 and
SAM-2, for example).

10. Section 6.2, Table 3. I don't understand this table. Under what
circumstances is a device required to support the mandatory commands in this
table? If a sequential device supports opcodes A7h and B4h why would it
also support A5h and B8h?

11. Section 6.3, definition of Allowed. "registrantsonly" need a space.

12. Section 6.3, Table 4. Since Medium Changers support reservations of elements, this table needs to describe the impact of using this feature. For instance, an INITIAILIZE ELEMENT STATUS WITH RANGE should not be affected by reservations if none of the elements in the range are reserved I would think, but it may be affected if the Medium Transport Element is reserved.

13. Section 6.4, first paragraph. This command can do much more than simply exchange medium between to elements. The first sentence of this paragraph should be fixed.

14. Section 6.4, second paragraph. This paragraph is partly redundant with Table 2 and wholly confusing. This standard is the only one I know of that explicitly states the data to be transferred with the command.

15. Section 6.4, third paragraph. This paragraph is redundant with Table 4 but less accurate. It could actually provide more information, such as what elements should be checked for reservation conflicts (source, first destination, second destination, and medium transport).

16. Section 6.5, last paragraph. An "element reservation" for which element?

17. Section 6.9, the paragraph after Table 10. Spelling error, "reisding" should be "residing".

18. Section 6.9, the paragraphs immediately before and immediately after Table 11. The WRITE ATTRIBUTES command was first defined in SPC-3.

19. Section 6.9. The sentence that is only "ELEMENT LIST Service Action" should be a subclause heading.

20. Section 6.9, the paragraph immediately preceding Table 12. It is completely unclear as to when this information is available, what to do if it changes, or how reservations affect it.

21. Section 6.9, Table 12. This table needs to be broken into 2 tables. The first table contains the Available Data field and another field that is described as "Element List Element Descriptors" running from byte 4 through n. The second table is the Element List Element Descriptor table with the Element Type Code in byte 0, the First Element Address in bytes 1 and 2, and the Number Of Elements field in bytes 3 and 5. We should re-evaluate this descriptor if we don't like the odd size.

22. Section 6.10, first paragraph. Since this clause has subclauses, all of this stuff needs to go into a subclause 6.10.1. The same comment applies to section 6.9 (after the ELEMENT LIST Service Action header is fixed), 6.11, 6.12, 6,14, and 6.15.

23. Section 6.10, second paragraph. Is a Sequential device with an attached medium required to support both B4h and B8h opcodes, or only one of these?

24. Section 6.10, fifth paragraph. Element reservation for which element?

25. Section 6.10.1, second paragraph. No requirement is included for the order in which the pages or descriptors are returned. Is it acceptable that the element addressed by the First Element Address Reported field is not the first element in the list?

26. Section 6.10.2, first paragraph. Why would an element status page that had zero descriptors be included in the data? Is there an implied requirement that pages be returned for element types that have no elements that meet the reporting criteria?

27. Section 6.10.5, Table 19. cmc should be small caps.

28. Section 6.10.6. One could argue that in the fields NOT BUS, ID VALID, SCSI BUS ADDRESS, LU VALID, and LUN are obsolete with today's transport

layers. If they remain, they need their descriptions changed to accommodate
other transport layers. Three bits of LUN is not nearly enough for most
transport layers in use today (at least 6 bits, 8 bytes would be better).

29. Section 6.13, fifth paragraph. The last sentence in this paragraph is
dangerous. Since the CDB contains an ELEMENT TYPE field and an ELEMENT
ADDRESS field, elements can be requested out of order. This sentence does
not account for that. Suggested re-wording: "Once information for a given
element has been reported, it will not be reported again for subsequent
REQUEST VOLUME ELEMENT ADDRESS commands until another SEND VOLUME TAG
command has completed".

30. Section 6.14, first paragraph. Since this clause has subclauses, a
subclause heading is required before this first paragraph.

31. Section 6.14.1, second paragraph. This requirement has the effect of
disallowing an initiator from reserving the entire unit if it holds any
element reservations. If that is not desired, reword to: "If the unit is
reserved by another initiator the target shall respond by returning
RESERVATION CONFLICT. If the ELEMENT bit is set to one, and any element in
the Element List is reserved by another initiator, the target shall respond
with RESERVATION CONFLICT."

32. Section 6.12.1, third paragraph. This paragraph is redundant with
subcluase 6.3. If the editor chooses to keep it, it should be reworded to:
"If, after processing a RESERVE ELEMENT command with an ELEMENT bit set to
zero, any other..."

33. Section 6.14.2, general comment. The PERSISTENT RESERVE IN and PR OUT
commands are intended to replace RESERVE and RELEASE because they can
support the transport layers of the future. For all other device types,
RESERVE and RELEASE have been obsoleted recently. The one major drawback of
PR IN and PR OUT with respect to SMC-2 is the inability to reserve blocks of
elements with a single command. Should we fix that flaw in PR OUT and PR IN
now and obsolete RESERVE and RELEASE as the other device types have done?

34. Section 6.14.2, first paragraph. While this feature may be most useful
"in a multiple tasking environment" it is possible without such an
environment. This phrase should be removed.

35. Section 6.14.2, fifth paragraph. How should overlapped element
reservations be handled? If an initiator holds an element reservation for
an element and then issues another RESERVE command with ELEMENT set to one
that includes that same element but has a different RESERVATION
IDENTIFICATION, what should it do? Should it transfer the reservation to
the new ID, hold the reservation under both IDs (both must be released to
release the element), or reject the second command?

36. Section 6.14.2, eighth paragraph. This implies that a single element
descriptor can include elements of multiple types. Are we sure we want
element descriptors to span between element types?

37. Section 6.14.2, eighth paragraph. Instead of "last" use "highest" since
there is no specified ordering of elements.

38. Section 6.14.2, general comment. A paragraph is required to describe
the action on a truncated element descriptor.

39. Section 6.15.1. The section header claims third party support is
mandatory and the first paragraph after the header claims it is an option.
Since it is not even offered in the RESERVE ELEMENT (6) command, it has to
be an option.

40. Section 6.15.2. This heading should be removed since it breaks up the
3rd party subclause. The first paragraph after it should be moved to
subclause 6.14.2. Note 13 should be moved also, or even better, removed.

41. Section 6.15.2, fifth paragraph. Since 3rd party support is optional
(or at least it should be), the first sentence of this paragraph should be:
"Device servers that support 3rd party reservations and device IDs

greater..."

42. Section 6.15.2, sixth paragraph. There is no paragraph that describes what is expected for other combinations of LONGID and ELEMENT.

43. Section 6.15.2, sixth paragraph. What is the "extent list length"?

44. Section 6.15.2, Table 30. The reference in the Element Descriptors field should be Table 28, but it would be better to reference the entire subclause 6.14.2.

45. Section 6.16, second paragraph after Table 32. What is the ASC? How about if the element is empty or inaccessible?

46. Section 6.16, fifth paragraph after Table 32. What is the ASC, most likely Invalid Field in CDB?

47. Section 6.16, fifth paragraph after Table 33. What is the Sense Key and ASC if it does?

48. Section 6.17, second paragraph. What should the device do if this element address is empty? What if the medium in that element does not support MAM commands or if an error occurs accessing the MAM?

49. Section 7.2.2, editor's note. This sounds like good advice. However, SSC-2 is struggling with this issue still, so perhaps the editor should wait for resolution there.

50. Section 7.3, first paragraph. Add subclause 7.3.1 to cover these paragraphs.

51. Section 7.3, fifth paragraph. Add a sentence that states the Number Of Blocks and Block Length fields must be 0.

52. Section 7.3.1. There is more device capability information that we would like to see standardized in its reporting. Perhaps a reserved byte from this mode page could do that. The information is: Optical Bar Code Reader Present, Volume Tag Save capable, MAM Read capable, and MAM Write capable. It would also be good to report if a SET VOLUME TAG command that modifies a VT will save that information with the device or the medium. We would also like to add a bit to report if the medium changer is managing the cleaning process.

53. Section 7.3.2, last paragraph. According to subclause 5.3, each element type must have a contiguous address range. Each of these paragraphs defines the action to take if MODE SELECT command changes a greater number of elements than the default number. A description of the action to take on an attempt to change the addresses of any number but all of the elements of a specific element type should also be included. It also should be invalid to change the address of any of the elements of type Medium Transport since it must be anchored at 0. Or, Perhaps it is legal to move the Medium Transport elements to another address in which case address 0 acts as an alias. If so, that should be described here, or even better in the Model section.

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Comments attached to No ballot from Mr. Gerald Houlder of
Seagate Technology:

Seagate Technology Comments on SMC-2, revision 5
Prepared by Paul Suhler

Editorial comments: 30
Technical comments: 1

Seagate-01
Editorial
Pg 17
Clause 3.1.44

".media and its carrier." -- "Media" is plural; "its carrier" is singular. S/b
".medium and its carrier."

Seagate-02
Editorial
Pg 20
Clause 4, third paragraph, 1st sentence:
".address they can be found." S/b ".addresses at which they can be found."

Seagate-03
Editorial
Pg 20
Clause 4, third paragraph, 2nd sentence:
 ".unit reports this inventory when requested as well as identifying." s/b
".unit reports this inventory when requested and identifies."

Seagate-04
Editorial
Pg 22
Clause 5.1, first sentence:
"mediachanger" s/b "media changer"

Seagate-05
Editorial
Pg 22
Clause 5.3, first paragraph, last sentence
"INQUIRY command response data" s/b "standard Inquiry data"

Seagate-06
Editorial
Pg 24
Clause 5.6, first sentence
"thatare" s/b "that are"

Seagate-07
Pg 25
Clause 5.8, first sentence
" When a media changer receives a valid READ ELEMENT STATUS command with a
CURDATA bit of zero, the media changer shall be capable of reporting as command
response data various data required by each page type (i.e., full, error,
etc.)."
This is very awkward and unclear. I don't have an alternative, because the
intent isn't clear. ".shall be capable of." doesn't sound like good
standards-ese.

Seagate-08
Editorial
Pg 25
Clause 5.9, second paragraph
" The volume tag information field values shall be independent of any volume
identification information recorded on the medium or a volume."
The intent of this is unclear. If the volume tag can come from a label, then
why not from information on the medium? Does "shall be independent" mean that
it may or may not be the same as some information on the medium.
I see no reason for not deleting the paragraph.

Seagate-09
Editorial
Pg 29
Clause 6.3, second paragraph, second sentence: Needs a comma.
". method see table 4." s/b ". method, see table 4."

Seagate-10
Editorial
Pg 29
Clause 6.3, "allowed" keyword:
"registrantsonly" s/b "registrants only"

Seagate-11
Editorial

Pp 31 - 74
Clauses 6 and 7, various CDB and parameter tables
In SPC-2 and SPC-3, for example, tables with multiple-byte fields usually have
the MSBs and LSBs indicated and horizontal lines separating bits 7 of successive
bytes and bits 0 of successive bytes. This was not done in SMC and is not in
SMC-2. Please change.

Seagate-12
Editorial
Pg 36
Clause 6.7, third paragraph
".device capabilities MODE SENSE page." s/b ".device capabilities mode page."

Seagate-13
Editorial
Pg 38
Clause 6.9, first sentence: typo:
"Auxillary" s/b/"Auxiliary"

Seagate-14
Editorial
Pg 38
Clause 6.9, Table 10: Inconsistent use of small caps.
ELEMENT TYPE CODE, VOLUME NUMBER, PARTITION NUMBER, FIRST ATTRIBUTE ID, and
ALLOCATION LENGTH all need to be fixed.

Seagate-15
Editorial
Pg 38
Clause 6.9, Table 10
This CDB table was not modified correctly from that in SPC-3:
1. ALLOCATION LENGTH field should be four bytes, 10 - 13.
2. Reserved and CONTROL fields should be 14 and 15, respectively.

Seagate-16
Editorial
Pg 38
Clause 6.9, First paragraph after Table 10, second sentence: typo:
"reisding" s/b "residing"

Seagate-17
Editorial
Pg 38
Clause 6.9, First paragraph after Table 10, third sentence: typo:
"Not that this field." s/b "Note that this field."

Seagate-18
Editorial
Pg 39
Clause 6.9, last sentence before and first sentence after Table 11
References to SPC. This command is defined in SPC-3, not SPC-2. Is a
reference to SPC-3 allowed? If not, then snarf field descriptions from SPC-3.

Seagate-19
Editorial
Pg 39
Clause 6.9, Table 12: inconsistent use of small caps
Correct AVAILABLE DATA, ELEMENT TYPE CODE, and FIRST ELEMENT ADDRESS,

Seagate-20
Editorial
Pp 45, 47, 49, 51
Clause 6.10: repeated typo:
"IDENFIFIER LENGTH" s/b "IDENTIFIER LENGTH"

Seagate-21
Editorial
Pg 50
Clause 6.10.1, Table 20: inconsistent use of small caps
Correct NOT BUS, ID VALID, and LU VALID.

Seagate-22
Editorial
Pg 51
Clause 6.10.1, third paragraph, last sentence
"lun address" s/b "LUN address"

Seagate-23
Technical
Pg 51
Clause 6.10.1, third and fourth paragraphs:
This needs an explanation of the value in the SCSI BUS ADDRESS, ID VALID, and
NOT BUS fields for transport layers other than Parallel SCSI. Probably all
fields should be set to zero in such a case.

Seagate-24
Editorial
Pg 55
Clause 6.13, fifth paragraph, first sentence: awkward wording:
".shall be able to report." doesn't sound like proper standards-ese.

Seagate-25
Editorial
Pg 59
Clause 6.14.2, list bulleted with '-' characters:
Are these steps to be taken in the indicated order? If so, then the list
should be numbered, in accordance with clause 3.4.

Seagate-26
Editorial
Pg 67
Clause 6.17, WRITE ATTRIBUTE command, last sentence
Reference to SPC-2 is incorrect. If a reference to SPC-3 cannot be used, then
snarf field descriptions from SPC-3.

Seagate-27
Editorial
Pg 67
Clause 7.2.2, editors note
This needs to be done. Note that changes are being proposed to the TapeAlert
page for SSC-2.

Seagate-28
Editorial
Pg 79
Annex A table, item 16h: typo:
"perposes" s/b "purposes"

Seagate-29
Editorial
Pg 80
Annex A Table, line 1Ch: repeated word:
"the the" s/b "the"

Seagate-30
Editorial
Pg 81
Annex A Table, line 1Eh, columns 5 and 6: two typos:
"occured" s/b "occurred"

Seagate-31
Editorial
Pg 81
Annex A Table, line 1Fh, column 5: typo:
"passthrought" s/b "passthrough"

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Comments attached to No ballot from Mr. Erich Oetting of

Storage Technology Corp.:

1. (T) Pg 15 - Clause 2, Replace SAM with SAM-2.
2. (T) Pg 15 - Clause 2, Replace SPC with SPC-2.
3. (T) Pg 18 - Clause 3.2. Replace SAM with SAM-2, and update all occurances
in the document.
4. (T) Pg 18 - Clause 3.2. Replace SPC with SPC-2, change SPC to SPC-2 in rest
of document except for Read Attribute and Write Attribute command clauses.
5. (E) Pg 18 - Clause 3.2. Add abbrev. for SPC-3.
6. (E) Pg 22 - Clause 5.1. Missing space in "mediachanger".
7. (E) Pg 24 - Clause 5.6. Missing space in "thatare".
8. (E) Pg 24 - Clause 5.7. Delete note 2 and substitute a paragraph stating
that coordination between data transport and media changer may use ADI or be
vendor specific.
9. (E) Pg 25 - Clause 5.9. Remove extra space in "data descriptor"
10. (T) Pg 27 - Clause 6.1, Table 2, Release Element (6), operation code 16h
should be 17h.
11. (E) Pg 31 - Clause 6.4. Remove third paragraph starting "A reservation
conflict ... ". Reservation rules are already defined by Table 4. Do the same
for all other command definitions.
12. (E) Pg 31 - Clause 6.4. Table 2. Replace dashed lines between byte
numbers and replace with hairline. Fix same table format problem in rest of
document.
13. (E) Pg 32 - Clause 6.4. Last paragraph on page, "a logical unit that is not
capable" should be "a device server that is not capable".
14. (E) Pg 38 - Clause 6.9 - Change SPC to SPC-3 in this clause.
15. (E) Pg 38 - Clause 6.9 - First sentence, "read attribute values to" should
be "read attribute values from".
16. (T) Pg 39 - Clause 6.9 - The Element List service action should return a
list of only elements with an accessable MAM, yet the format does not provide
for handling a non-contiguous list.
17. (E) Pg 41 - Clause 6.10, Last paragraph on page. Replace "the DVCID bit
shall be treated as reserved" with "and the DVCID bit is set to one, the
device server shall return Check Condition, Illegal Request, Illegal field in
CDB".
18. (T) Pg 51 - Clause 6.10.6 - Text describing the NOT BUS, ID VALID and SCSI
BUS ADDRESS fields should be removed. (mark these fields as obsolete in Table
20).
19. (T) Pg 51 - Clause 6.10.6 -Text describing the LU VALID and LOGICAL UNIT
NUMBER fields should be removed. (mark these fields obsolete in Table 20).
20. (T) Pg 54 - Clause 6.12.1. Third party release should be obsolete not
mandatory. Remove this clause, mark appropriate fields in Table 23 as obsolete
and remove Table 24.
21. (T) Pg 61 - Clause 6.15.1. Third party reservations should be obsolete,
not mandatory. Remove this clause and 6.15.2, mark the appropriate fields in
Table 29 as reserved and remove Table 30.
22. (E) Pg 67 - Clause 6.17 - Change SPC-2 to SPC-3.
23. (E) Pg 69 - Clause 7.2.2 - Remove editors note and replace with description
of Tape Alert Log page from SSC.

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Comments attached to YesC ballot from Mr. Paul D. Aloisi of
Texas Instruments:

Section 1 has a very outdated list of standards, example ? Fast-20 is
Obsolete, SPI-3 and SPI-4 should be listed. (see SAM-2 or newer document for
an updated list).

Section 2 ? SPC-2 should be the normative reference

Annex B is a very outdated list

******************** End of Ballot Report ********************