

Voting Results on T10 Letter Ballot 00-016r0 on  
Forwarding SPC-2 Rev 18 to first public review

Organization	Name	S	Vote	Add'l	Info
Adaptec, Inc.	lawrencece lamers	P	Yes		
AMP / Tyco Electronics	Charles Brill	P	Yes		
Amphenol Interconnect	Bill Mable	P	Yes		
Berg Electronics	Douglas Wagner	P	Yes		
BREA Technologies, Inc.	Bill Galloway	P	Yes		
Brocade Communications	Robert Snively	P	No	Cmnts	
Circuit Assembly Corp.	Ian Morrell	P	Yes		
CMD Technology	Edward Haske	P	Yes		
Compaq Computer Corp.	Rob Elliott	P	YesC	Cmnts	
Crossroads Systems, Inc.	Neil Wanamaker	P	YesC	Cmnts	
Dallas Semiconductor	Charles Tashbook	P	Yes		
Dell Computer			DNV		
EMC	gary s robinson	P	Yes		
ENDL	Ralph O. Weber	P	No	IV	Cmnts
Exabyte Corp.	Michael Taylor	P	Yes	IV	
Fujitsu			DNV		
General Dynamics	Nathan Hastad	P	Yes		
Hewlett Packard Co.	Stewart Wyatt	P	Yes		
Hitachi Cable Manchester, Inc	Zane Daggett	P	Yes		
Honda Connectors		P	Yes		
IBM Corp.	George Penokie	P	No	Cmnts	
Iomega Corp.	Tim Bradshaw	P	Yes		
KnowledgeTek, Inc.	Dennis P Moore	P	Yes		
LSI Logic Corp.	Charles Binford	A	YesC	Cmnts	
Madison Cable Corp.	jie fan	P	Yes		
Maxtor Corp.	Pete McLean	P	Yes		
Molex Inc.	Joe Dambach	P	Yes		
NSTOR	Gregg Neely	P	Yes		
Ophidian Designs	Ed Gardner	P	Yes	IV	
Panasonic Technologies, Inc	Han Zou	P	Yes		
Philips Electronics	Bill McFerrin	P	Yes		
QLogic Corp.	skip jones	P	Yes		
Quantum Corp.	Mark S. Evans	P	YesC	Cmnts	
Seagate Technology	Gene Milligan	P	No	IV	Cmnts
Storage Technology Corp.	Erich Oetting	P	Yes		
Sun Microsystems, Inc.	Kenneth Moe	P	Yes		
Texas Instruments	Paul Aloisi	P	YesC	Cmnts	
Toshiba America Elec. Comp.			DNV		
Woven Electronics	Doug Piper	P	Yes		

## Key:

P Voter indicated he/she is principal member  
A Voter indicated he/she is alternate member  
O Voter indicated he/she is observer member  
? Voter indicated he/she is not member or does not know status  
YesC Yes with comments vote  
Abs Abstain vote  
DNV Organization did not vote  
IV Individual vote (not organizational 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)

## Ballot totals:

32 Yes  
4 No  
0 Abstain  
3 Organization(s) did not vote  
39 Total voting organizations  
9 Ballot(s) included comments

This 2/3rds majority ballot passed.  
32 Yes is at least a majority of the membership [20] AND  
32 Yes is at least 24 (2/3rds of those voting, excluding abstentions [36])

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Comments attached to No ballot from Robert Snively of  
Brocade Communications:

1) Definition of medium

pdf page 35, page 7, 3.1.35

The definition of medium is not consistent with common industry practice, nor with the subsequent definitions in 3.1.36 and 3.1.37. The medium is the physical entity on which the media information is stored. SAM-2 rev 13 does not mention medium information, but does use the word medium to refer to the physical entity on which the media information is stored.

Proposed resolution:

The text be changed to read:

3.1.35 medium: The physical entity that records, stores, and returns data as required by commands transmitted to the device server.

2) Spelling

pdf page 35, page 7, 3.1.47

Correct "autonsense" to "autosense"

3) Definition of sense data

pdf page 35, page 7, 3.1. 47

The last sentence should be improved to read:

"The format of sense data is the format defined for parameter data returned by the REQUEST SENSE command in 7.23.2."

4) Service response definition

pdf page 39, page 11, 4.2

After much consideration, the FCP-2 study group chose to represent the service calls using the following format:

command (IN(a,b,c),OUT(x,y,z))

SPC-2 (and incidentally SAM-2) should do the same, as follows:

Service response = Execute Command (IN(Task Identifier, CDB, [Data-Out Buffer], Task Attributes), OUT( [Data-In Buffer], [Autosense Data], [Autosense Return Flag], Status))

command (IN(a,b,c),OUT(x,y,z))

#### 5) Command Descriptor Block

pdf page 39, page 11, section 4.3

Since this clause is in parallel with "variable length descriptor block" in 4.4, I propose that it be entitled "fixed length command descriptor block (CDB)". Alternatively, a superior clause could be created called "Command Descriptor Block" with parallel inferior clauses for fixed length and variable length CDBs.

#### 6) Operation Code and Control Code

pdf page 40, page 12, section 4.3.1

All fields but the Operation Code and Control fields are defined in separate paragraphs, often very short. I propose that they also be removed to separate paragraphs, since they are at the same level of hierarchy in the description process.

#### 7) Restrict use of Service Action

pdf page 42, page 14, section 4.3.2

The last sentence now reads:

"When the specific field SERVICE ACTION is not defined in a CDB format, the bits identified as the SERVICE ACTION field in a typical CDB may be used for other purposes."

I propose that the restriction on the bits be more explicit.

"When the specific field SERVICE ACTION is not defined in a CDB format, the bits identified as the SERVICE ACTION field in a typical CDB

shall be used or reserved as specified by the particular CDB."

8) Definition of encryption field (key technical comment)

pdf page 43, page 15, section 4.4

The encryption field now is presently defined as zero for no encryption and all other values as reserved. This seems to me to be the same as reserving the entire field. There is no clear evidence that encryption is the proper use of that field or that the field is the proper size to describe the encryption algorithm or to provide an encryption key. I would recommend reserving the field instead of defining it until an encryption model is at least proposed.

Similarly, the last paragraph on page 15 should be deleted, since there is no encryption model defined yet.

9) Self test is obligatory

pdf page 45, page 17, section 5.4.1

The sentence indicates that self test is required for all devices that support SEND DIAGNOSTICS. Clause 5.2.1 requires that all devices support SEND DIAGNOSTICS. By extension, clause 5.4.1's first paragraph should be reworded to read:

"The default self-test is mandatory for all device types."

10) Self test clarification desirable

pdf page 45, page 17, section 5.4.1 and 5.4.2

The default self-test is not clearly separated from the short and long self tests, which may be run foreground and background. I would propose the first sentence of 5.4.2 be changed to read:

"There are two optional types of self-test aside from the mandatory default self-test that may be invoked using the SELF-TEST CODE field in the SEND DIAGNOSTICS command: a short self-test and an extended self-test."

Alternatively, an additional clause should be placed in front of 5.4.1 called

"Types of self-test available", with all five types of self-test mentioned and a table of mandatory versus optional, with references.

11) Default self-test behavior

pdf page 45, page 17, section 5.4.1

In section 5.4.3.3, table 7, the behavior for background and foreground self tests is specified. There is no similar specification for default self-test with respect to the processing of subsequent commands. I would propose that subsequent commands shall present BUSY status until the default self-test is completed.

12) COMPARE success

pdf page 67, page 39, section 7.2

The third paragraph says: "If the comparison is unsuccessful, the command shall be terminated with CHECK CONDITION status and the sense key shall be set to MISCOMPARE."

No definition is provided defining the "successful" or "unsuccessful" nature of the compare. I assume that it is intended to state here that a comparison of equal between all bytes of equal length destination and source fields is successful, while any other comparison (<, >, not equal, different lengths) is unsuccessful.

13) COMPARE pad

pdf page 67, page 39, section 7.2

Table 11 defines the pad bit. What comparison is performed for padded characters?

14) COMPARE obsolete

pdf page 67, page 39, section 7.2

I propose that, since 12 and 13 have never been addressed by any other user, that the COMPARE command cannot be implemented successfully, has never been implemented, and should be made obsolete.

## 15) COPY command obsolete (key technical comment)

pdf page 68, page 40, section 7.3

I propose that the COPY command cannot be implemented successfully, has never been implemented, and should be made obsolete. I conclude this because of the following fundamental errors in the definition of COPY.

Section 7.3.1, 3rd paragraph.

The parameter list length of zero is considered to be not an error. However, there is no mechanism to tell what is to be copied from what when no parameters are provided. If this is not an error, I do not know what is. I propose, if COPY is not made obsolete, that a zero length parameter field should be treated as some type of INVALID PARAMETER FIELD error.

Section 7.3.1, 6th paragraph

The priority field establishes a relative priority of a copy command. However, the interaction of the priority field with the obligatory SCSI task queueing requirements is not specified. As a result, it is not clear whether or not priority can over-ride queue ordering, head of queue behavior, or queued commands ordered from another initiator. I propose that the the relative priority field be deleted on the assumption that copy functions between a particular pair of devices will be single-threaded.

## 16) COPY AND VERIFY obsolete

pdf page 76, page 48, section 7.4

The command should be made obsolete if COPY and COMPARE are made obsolete.

## 17) COPY AND VERIFY comparison

pdf page 76, page 48, section 7.4

The second paragraph refers again to successful comparison. The word here should be verification (or verification of equality), since compare can be high, low, equal, or invalid because of length mismatches.

## 18) Verification model (key technical comment)

pdf page 76, page 48, section 7.4

The concept of verification is a big vague and has no model. The reason this is important is that devices expected to participate in verification must support any function that a copy manager may choose to execute to perform the verification. Without a model, uncertainty about what functions are required could cause interoperability issues. I propose that a model for verification be placed in clause 5 unless COPY AND VERIFY is made obsolete. Incidentally, this is also a problem in SBC.

## 19) COPY vs EXTENDED COPY

pdf page 77, page 49, section 7.5

COPY and EXTENDED COPY may create interactions that cause data integrity problems. I propose that it be made explicit that the receipt of a COPY command while an EXTENDED COPY command is queued or in process or the receipt of an EXTENDED COPY command while a COPY command is queued or in process be considered an INVALID COMMAND error of some sort. This is another good reason to make COPY and its partners obsolete.

## 20) EXTENDED COPY parameter length

pdf page 77, page 49, section 7.5

The parameter list length of zero is considered to be not an error. However, there is no mechanism to tell what is to be copied from what when no parameters are provided. If this is not an error, I do not know what is. I propose that a zero length parameter field should be treated as some type of INVALID PARAMETER FIELD error.

If this solution is not acceptable, then the behavior of the copy manager when it receives a parameter field length of zero should be specified. I would expect that the explicit behavior would be of the nature:

No commands are executed to any attached SCSI target.  
No internal states of the copy manager are changed or established.  
GOOD status is presented.

I would propose that a parameter field length that truncates a

parameter list  
should also be an INVALID PARAMETER FIELD error of some sort, since an  
incomplete copy function will be specified.

21) EXTENDED COPY priority (key technical comment)

pdf page 79, page 51, section 7.5.1

The priority field establishes a relative priority of the command.  
However,  
the interaction of the priority field with the obligatory SCSI task  
queueing  
requirements is not specified. As a result, it is not clear whether  
or not  
priority can over-ride queue ordering, head of queue behavior, or  
queued  
commands ordered from another initiator. I propose that the the  
relative  
priority field be deleted on the assumption that copy functions  
between a  
particular pair of devices will be single-threaded.

Alternatively, a model must be provided for the behavior of a command  
with  
a specified priority field relative to other commands. I am not sure  
what  
the reviewers would consider an appropriate model.

22) Stripped vs Striped

pdf page 79, page 51, section 7.5.1

In a number of places, "stripped" (naked) should be changed to  
"striped"  
(formatted in bands).

23) Supported target devices

pdf page 79, page 51, section 7.5.1

The sixth paragraph on the page specifies that not all target devices  
are  
supported. A cross reference to 7.17 should be provided to hint to  
people that  
there is a mechanism to determine which are supported.

24) Residual count (key technical comment)

pdf page 81, page 53, section 7.5.3, item d

The definition of residual count should be refined. It should only  
indicate  
data as having been transferred if the transferring CDB was properly  
executed  
and resulted in GOOD status. Data that has flowed across the



transport  
protocol but not been acknowledged with GOOD status should not be  
considered  
as having been transferred. If transfers were out of order and some  
were  
successful but others were not, then the residual count should be  
based  
on the highest displacement byte of data that contiguously from byte 0  
was  
successfully transferred.

25) Assumption of single fabric

pdf page 86, page 58, 7.5.6.3

The assumption that all these ports are in the same fabric must be  
explicitly stated. If this is not stated, an additional "fabric name"  
parameter must be defined and included.

26) Additional note for LUN identified devices

pdf page 89, page 61, 7.5.6.6

The handy note in section 7.5.6.2 (Note 10) should be paraphrased in  
7.5.6.6 to  
indicate that the copy manager is burdened with identifying available  
paths,  
N\_Ports, and logical units that will access the specified LUN.

27) Resource exhaustion question

pdf page 105, page 77, section 7.5.7.8

The fourth paragraph indicates that data should be saved up for the  
application  
client. What happens if there are insufficient resources in the copy  
manager  
to save that information at the time the particular segment descriptor  
is  
processed?

28) Obsolete TranDis

pdf page 125, page 97, section 7.6.3

The CONTINUE TASK and TARGET TRANSFER DISABLE messages are obsolete in  
SPI-3.  
The SPC-2 INQUIRY data bits that indicate their presence should be  
similarly made  
obsolete.

29) VPD page 83 mandatory (key technical comment)

pdf page 126, page 98, TBD section

The device identification page (section 8.4.4) should be specified as mandatory either here in section 7.6.4 or in section 8.4.1 or 8.4.4.

30) Use correct units

pdf page 156, page 128, section 7.17.2, table 96

The table should use the proper [prefix] bytes binary abbreviations and names. There is a proposed binary byte count (10\*\*10, 10\*\*20) etc defined as "kilo byte binary" (Kibe). I have been trying to find the referent, but we should use that.

31) Recently is relative

pdf page 157, page 129, section 7.17.3

Held data should not be identified as "oldest to newest". It should be identified as beginning with the lowest byte number for the first descriptor requiring data to be held, going up through the highest byte number for the last descriptor asking for data to be held. The data may or may not have actually been obtained in that order, depending on the particular segment descriptors and their relationships.

32) Discard mechanism is ill-defined

pdf page 157, page 129, section 7.17.3

The discard mechanisms for held data are somewhat primitive. Why is data held? If it is held to be read, it should not be thrown away, since the application may need it. It would be better to prohibit the discarding of data or to warn before discarding the data. If no change is to be made, the model requiring this behavior needs to be explained so that it will not be misused.

33) Redundant mechanism for capturing sense information in EXTENDED COPY

pdf page 160, page 132, section 7.17.5

What does RECEIVE COPY RESULTS (FAILED SEGMENT DETAILS) do for you that the sense information developed by the rules in 7.5.3, rule e) does not?

If nothing, the FAILED SEGMENT DETAILS service action should be deleted.  
If something, the text in 7.5.3 or 7.17.5 should make this clearer. Similarly, rule i) should be deleted unless there is some functionality not provided by rule e).

## 34) Target s/b LUN

pdf page 167, page 139, section 7.21

The sentence "The target shall return the same Identifier to all initiators on all ports." should say "The logical unit shall return the same Identifier to all initiators on all ports."

## 35) Logical unit reservation mandatory

pdf page 191, page 163, section 7.24.2 and 7.24.3

The titles of these sections indicate that these capabilities are mandatory.  
In fact, they are mandatory only if the corresponding RESERVE command is implemented, an optional behavior. This should be removed from the title where it cannot be interpreted clearly and a new sentence should be placed in the section in the appropriate location indicating, "Logical Unit Reservation is mandatory if the RESERVE(10) command is implemented." Similar sentences should go in the other corresponding paragraphs.

## 36) Identifier field not vendor specific

pdf page 196, page 168, section 7.27

The sentence "The IDENTIFIER field shall be a vendor specific value, to be returned in subsequent REPORT DEVICE IDENTIFIER commands." should read  
"The IDENTIFIER field is a value selected by the application client by mechanisms outside the scope of this standard to be returned in subsequent REPORT DEVICE IDENTIFIER commands."

## 37) Page codes for diagnostics?

pdf page 203, page 175, section 8.1.1

Should table 128 reference those pages that apply to all device types, but that are defined by SES? It might make them easier to find. That would

include codes 01h through 0Fh.

38) References confuse text

pdf page 249, page 221, section 9.3

The AER data is apparently defined in table 189, not table 119. This flaw shows up in two separate paragraphs of section 9.3 and somewhat confuses the intent of the paragraph:

"If the SCSI-3 bit is zero, then the AEN data format (as defined by the SCSI-2 standard) shall be used. If the SCSI-3 bit is one, then the AER data format shown in table 119 shall be used."

The difference is apparently only in LUN length. Is that correct?

39) Additional vendor identification

pdf page 301, page 273, Annex D

The name BROCADE should be applied for Brocade Communications Systems, Incorporated.  
Note that the page number is missing on this page.

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Comments attached to YesC ballot from Rob Elliott of  
Compaq Computer Corp.:

SPC-2 revision 18 letter ballot comments  
Rob Elliott, Compaq Computer Corporation

These are all editorial, although CPQ 1 has caused some technical difficulties.

CPQ 1

Section 5.5.3.2 Overview of the Persistent Reservations management method  
page 24-25, PDF page 52-53

The persist-through-power-loss description in the persistent reservations section has proven confusing for some implementors. A device which stores its reservation table on media might interpret this as requiring it to return a CHECK CONDITION after the media has been STOPped. We'd rather see the device cache the reservation table in RAM and use it as long as a power on reset has not occurred. Suggested changes are listed below:

The capability of preserving persistent reservations and registration keys across power cycles requires the use of a nonvolatile memory within the SCSI device. Any SCSI device that supports the Persist Through Power Loss (APTPL) a

Replace "memory within the SCSI device" with "memory (not necessarily the media) within the SCSI device."

Replace "APTPL" with "PTPL".

...capability of persistent reservation and has non-volatile memory that is not ready shall allow the following commands into the task set:

- a) INQUIRY;
- b) LOG SENSE;
- c) READ BUFFER;
- d) REPORT LUNS;
- e) REQUEST SENSE;
- f) START/STOP UNIT (with START bit = 1 and POWER CONDITIONS field value of 0); and
- g) WRITE BUFFER.

When nonvolatile memory is not ready, any commands, other than those listed above shall return CHECK CONDITION status. The sense key shall be set to NOT READY and the additional sense data shall be set as described in the TEST UNIT READY command (see 7.28).

Replace "When nonvolatile memory is not ready" with "When PTPL is activated and nonvolatile memory is not ready".

Add sentence at end: "When PTPL is activated and nonvolatile memory is ready, all commands shall be subjected to the persistent reservation rules."

CPQ 2

Section 5.5.3.2 Overview of the Persistent Reservations management method page 24-25, PDF page 52-53

The reference to 7.28 recommending which additional sense data to send with a CHECK CONDITION should be clearer. Several of the NOT READY codes in 7.28 shouldn't be used (e.g. FORMAT IN PROGRESS). I suggest listing the specific codes in this section.

The sense key shall be set to NOT READY and the additional sense data shall be set as described in the TEST UNIT READY command (see 7.28).

Replace "the TEST UNIT READY command (see 7.28)" with "table 5.xx".

List these in a new table in 5.5.3.2:

MEDIUM NOT PRESENT  
 LOGICAL UNIT NOT READY, CAUSE NOT REPORTABLE  
 LOGICAL UNIT IS IN PROCESS OF BECOMING READY  
 LOGICAL UNIT NOT READY, INITIALIZING COMMAND REQUIRED  
 LOGICAL UNIT NOT READY, MANUAL INTERVENTION REQUIRED

CPQ 3

Section 7.21 REPORT DEVICE IDENTIFIER page 139, PDF page 167

This section also refers to 7.28 (it mistakenly refers to 7.27) and should be changed in the same manner as comment 2

The execution of a REPORT DEVICE IDENTIFIER may require the enabling of a nonvolatile memory within the logical unit. If the nonvolatile memory is not ready, the device server shall return CHECK CONDITION status, rather than wait for the device to become ready. The sense key shall be set to NOT READY and the additional sense data shall be set as described in the TEST UNIT READY command (see 7.27). This information should allow the application client to determine the action required to cause the device server to become ready.

Replace "the TEST UNIT READY command (see 7.27)" with "table 7.xx".

List these in a new table in 7.21:

MEDIUM NOT PRESENT  
 LOGICAL UNIT NOT READY, CAUSE NOT REPORTABLE  
 LOGICAL UNIT IS IN PROCESS OF BECOMING READY  
 LOGICAL UNIT NOT READY, INITIALIZING COMMAND REQUIRED  
 LOGICAL UNIT NOT READY, MANUAL INTERVENTION REQUIRED

CPQ 4  
Global

Converge on one spelling for "non-volatile" or "nonvolatile"

CPQ 5  
Section 5.5.1 Reservations Overview, table 8  
page 22-23, PDF page 50-51

In the footnotes of the table 8 (on two pages), section 5.19 is referenced.  
Both 5.19 and 5.20 RELEASE(6) and RELEASE(10) should be referenced.

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Comments attached to YesC ballot from Neil Wanamaker of  
Crossroads Systems, Inc.:

1 (E). There should be an expository annex on use of Extended Copy. It would  
be exceedingly difficult for an implementor to use the command correctly from  
the text.

2 (E/T) The Send Copy Results command appears to be unusable on devices that  
do not support tagged queueing.

3 (T) The Access Controls material that was to be included in SPC-2 is not  
present.

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Comments attached to No ballot from Ralph O. Weber of  
ENDL:

#1 In the command descriptions that had a heading added to satisfy ISO style  
requirements (e.g., 7.3.1 COPY command overview), the  
word 'overview' should be replaced by 'introduction'. Particularly in the  
case of command descriptions, these clauses are not overviews but the initial  
paragraphs of the command description.

#2 In 8.3.8, the paragraph before table 169 contains an incorrect cross  
reference to table 103.

#3 In table C.4, change the description of mode page code 0Dh to 'Obsolete'  
and remove table note [1]. We had enough trouble referencing an internal T9.2  
document in SPC. There should be no reason to raise NCITS hackles by  
referencing a 9 year old internal document from a TC that no longer exists in  
SPC-2.

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Comments attached to No ballot from George Penokie of  
IBM Corp.:

Date: June 15, 2000  
To: T10 Committee (SCSI)  
From: George Penokie (IBM)  
Subject: Comments on SPC-2 Letter Ballot  
General

In my comments the notation 'Page xx' refers to all pages in the standard not  
roman numeral xx. All comments are editorial unless indicated with a '(T)' at  
the start of the comment.

1: IBM comment from George Penokie : Page 27  
T - The processor device sections do not contain any information that applies  
to other device types, therefore it does not belong in this standard. This

standard is supposed to define the device model for all SCSI devices. Processor devices should be removed from this standard.

2: IBM comment from George Penokie : Page 28

Page xvi - Introduction - The last paragraph contains the statement 'SCSI Primary Commands -2' this should be changed to 'this standard'. This should be changed in all places that are not titles or headings in this document.

3: IBM comment from George Penokie : Page 29

Page 1 - Section 1 - paragraph under figure 1 - The statement 'The figure is not intended...' should be changed to 'Figure 1 is not intended...'.

4: IBM comment from George Penokie : Page 31

Page 3-4 - Section 2.2, 2.3, 2.4, 2.5 - This format deviates from the one being used in other standards. Use SPI-3 as a example of how these sections should be segmented.

5: IBM comment from George Penokie : Page 31

Page 3 - 4 - The format of the listed standards should conform to the ISO way. For examples of this see SPI-3.

6: IBM comment from George Penokie : Page 33

Page 5 - section 3.1.1 - The term 'execution' should be deleted as it carries no useful information.

7: IBM comment from George Penokie : Page 33

Page 5 - section 3.1.5 - The acronym AER should be placed as such 'asynchronous event reporting (AER):'

8: IBM comment from George Penokie : Page 33

Page 5 - section 3.1.6 - The acronym ACA should be placed as such 'auto contingent allegiance (ACA):'

9: IBM comment from George Penokie : Page 33

Page 5 - section 3.1.11 - The acronym CDB should be placed as such 'command descriptor block (CDB)'

10: IBM comment from George Penokie : Page 33

Page 5 - section 3.1.12 - The statement '...type; e.g., SBC, SCC, SGC, SMC, SSC, MMC, SES, etc. (see clause 1).' should be type (e.g., SBC, SCC, SGC, SMC, SSC, MMC, SES) (see clause 1). The (e.g., ...) format should be used throughout the standard.

11: IBM comment from George Penokie : Page 33

Page 5 - section 3.1.13 - The acronym CA should be placed as such 'contingent allegiance (CA)'

12: IBM comment from George Penokie : Page 33

Page 5 - section 3.1.14 - The statement '...the operation thus requested.' should be '...the operation requested.'

13: IBM comment from George Penokie : Page 34

Page 6 - section 3.1.17 - The statement 'A data packet often contains information at the beginning or end of the packet that describes the contents of the packet. A data packet may contain control or status information for the destination device.' should be deleted as to confused more than helps. This is only a processor device thing and is more confusing especially sense we now have protocols that uses things that look and feel like packets.

14: IBM comment from George Penokie : Page 34

Page 6 - section 3.1.23 - The term 'effective' should be removed as it is not clear what the difference is between 'effective progress' and just plain old progress.

15: IBM comment from George Penokie : Page 34

Page 6 - section 3.1.17 - The statement '..complete the execution of a command...' should be changed to '...complete a command...' unless of course the command is to be executed by hanging, electrocution, or some other form of

morbid death.

16: IBM comment from George Penokie : Page 34  
Page 6 - section 3.1.30 - There needs to be a which hunt in this standard. In most cases a which should be changed to a that. Which is the case in this section;.

17: IBM comment from George Penokie : Page 35  
Page 7 - 3.1.41 - The statement '... protocol; e.g., SPI-3, SBP-2, FCP-2, etc. (see clause 1).' should be '...protocol (e.g., SPI-3, SBP-2, FCP-2) (see clause 1).'

18: IBM comment from George Penokie : Page 35  
Page 7 - section 3.1.33 - I am not sure of the value of this definition. It looks more like something that belongs where this is used.

19: IBM comment from George Penokie : Page 36  
Page 8 - section 3.1.54 - The definition of a target should be change to 'A SCSI device that receives SCSI commands and directs such commands to one or more logical units.' This is the definition used in SPI.

20: IBM comment from George Penokie : Page 36  
Page 8 - section 3.1.58 - The statement '...to one device to perform...' should be change to '...to one SCSI device to perform...'. The term 'device' should be changed to 'SCSI device' in most cases.

21: IBM comment from George Penokie : Page 36  
Page 8-9 - section 3.2 - Why are all the standards acronyms listed here. The only ones that are listed (if any) are ones that are used within the body of the standard. I do not consider the use in clause 1 as a reason for cluttering up this list.

22: IBM comment from George Penokie : Page 39  
Page 11 - section 4.1 - The terms 'see clause x' should be just 'see x' in all cases.

23: IBM comment from George Penokie : Page 39  
Page 11 - section 4.2 - The usage of both SCSI Architecture Model-2 and SAM-2 is not required as the acronym has already been defined.

24: IBM comment from George Penokie : Page 39  
Page 11 - section 4.2 - The notation used in the service response equation needs to be defined. This should be placed in a section called 'Notation for Procedures and Functions'. Examples of this section are in SPI and SAM.

25: IBM comment from George Penokie : Page 39  
Page 11 - section 4.2 - The bold text in the middle paragraphs needs to be changed to normal text.

26: IBM comment from George Penokie : Page 39  
Page 11 - section 4.3.1 - There is a mix of the usage of the term CDB and command descriptor block. This implies there is some difference between those two terms when there is none. Pick one way and stick with it.

27: IBM comment from George Penokie : Page 39  
Page 11 - section 4.3 - This section should add in the 32 byte CDB that has been defined.

28: IBM comment from George Penokie : Page 40  
Page 12 - section 4.3.1 - Paragraphs below table 2 - The term '...tables 1, 2, 3, and 4...' should be changed to 'table 1, table 2, table 3, and table 4..' This is one of those things that have been flagged by ANSI editors in the past.

29: IBM comment from George Penokie : Page 40  
Page 12 - section 4.3.1 - Paragraphs below table 2 - The term '...tables 1, 2, 3, and 4...' should be changed to 'table 1, table 2, table 3, and table 4..' This should be corrected throughout the standard. This is one of those things



that have been flagged by ANSI editors in the past.

30: IBM comment from George Penokie : Page 40  
Page 12 - section 4.3.1 - The statement '...the clause defining that command.'  
should be '...the subclause defining that command.'

31: IBM comment from George Penokie : Page 42  
Page 14 - section 4.3.2 - The statement '...that explicitly contain...' should  
be changed to '...that contain...'. The term explicitly add no value.

32: IBM comment from George Penokie : Page 42  
Page 14 - section 4.3.3 - The term device should be SCSI device.

33: IBM comment from George Penokie : Page 42  
Page 14 - section 4.3.3 - There is nothing in this section about the 64-bit  
LBA that has been added into the 16 byte CDBs. This needs to be added in here  
and should be shown in the CDB tables above.

34: IBM comment from George Penokie : Page 42  
Page 14 - section 4.3.5 - The term 'etc' should be removed as it is redundant  
with the e.g..

35: IBM comment from George Penokie : Page 42

36: IBM comment from George Penokie : Page 43  
Page 15 - section 4.4 - This section should be a subclause of 4.3 as it is a  
variant of the CDB.

37: IBM comment from George Penokie : Page 44  
Page 16 - section 5.1 - No need to list both SCSI Architecture Model-2 and  
SAM. Pick one and use consistently.

38: IBM comment from George Penokie : Page 44  
Page 16 - section 5.2.2 - The statement '...other useful information...'  
should be changed to '...other information...'. I assume all information is  
useful

39: IBM comment from George Penokie : Page 44  
Page 16 - section 5.2.3 - The term Autosense Data should not be capitalized.

40: IBM comment from George Penokie : Page 44  
Page 16 - section 5.2.4 - The term 'device specific' should be changed to  
'vender specific'.

41: IBM comment from George Penokie : Page 44  
Page 16 - section 5.2.5 - The statement 'It is especially useful to check the  
cartridge status of logical units with removable media.' as it contains no  
especially useful information.

42: IBM comment from George Penokie : Page 45  
Page 17 - section 5.3 - note 2 - The term 'generally' should be removed as  
generally the term adds no value to the statement.

43: IBM comment from George Penokie : Page 45  
Page 17 - section 5.4.2 - 2nd paragraph - The term segments should be added to  
the glossary.

44: IBM comment from George Penokie : Page 46  
Page 18 - section 5.4.3 - The statement 'These modes are described in the  
following clauses.' should be removed or changed to 'These modes are described  
in 5.4.3.1 and 5.4.3.2'.

45: IBM comment from George Penokie : Page 46  
Page 18 - section 5.4.3.1- 5.4.3.2 - The term 'Self-test results' should be  
either no caps or all caps. I believe all caps is correct. This occurs in  
several places.

46: IBM comment from George Penokie : Page 46

Page 18 - section 5.4.3.2 - Another case where CDB should be used instead of command descriptor block or the other way around.

47: IBM comment from George Penokie : Page 47

Page 19 - section 5.4.3.2 - The statement '...shall never take longer...' should be '...shall not take longer...'

48: IBM comment from George Penokie : Page 47

Page 19 - section 5.4.3.2 - table 6 - The formatting of this table should be change to add a double line after the header and before the footer. The text in the footer should start with 'Note:' and the text indented.

49: IBM comment from George Penokie : Page 47

Page 19 - section 5.4.3.2 - note 3 - This note looks like it should be part of the main text. It should be made so.

50: IBM comment from George Penokie : Page 47

Page 19 - section 5.4.3.3 - The following statement '...during execution of a self-test to poll...' should be changed to '...during a self-test operation to poll...'

51: IBM comment from George Penokie : Page 47

Page 19 - section 5.4.3.3 - The following statement 'While executing a self-test unless...' should be changed from 'While a self-test operation is in progress unless...'

52: IBM comment from George Penokie : Page 48

Page 20 - section 5.4.3.3 - table 7 - The formatting of this table should be change to add a double line after the header.

53: IBM comment from George Penokie : Page 48

Page 20 - section 5.4.3.3 - table 7 - 3rd column - 2nd row - The 's' in self-test appears to have a subscript format.

54: IBM comment from George Penokie : Page 49

Page 21 - section 5.5.1 - 2nd paragraph after a,b list - The term persistent reservation should not be capitalized. This should be changed throughout the standard.

55: IBM comment from George Penokie : Page 49

Page 21 - section 5.5.1 - 3rd paragraph after a,b list - The statement '...in the table shall apply.' should be '...in table 8 shall apply.'

56: IBM comment from George Penokie : Page 49

Page 21 - section 5.5.1 - 7th paragraph after the a,b list - The following statement '...tables 8 and 9.' should be '...table 8 and table 9.'

57: IBM comment from George Penokie : Page 49

Page 21 -section 5.5.1 - The term Reserve/Release should not be capitalized. This should be changed throughout the standard.

58: IBM comment from George Penokie : Page 50

Page 22 - section 5.5.1 - 1st paragraph before table 8 - The statement '... standard's device model clause or in the clauses that define the specific commands.' should be '...standard's device model or in specific commands defined in that standard.'

59: IBM comment from George Penokie : Page 50

Page 22 - section 5.5.1 - table 8 - This table should be made to fit on one page. The footnotes should be indented on table 8 and table 9..

60: IBM comment from George Penokie : Page 52

Page 24 - section 5.5.1 - 2nd to last paragraph - The statement 'The execution of any reserve/release...' should be 'Any reserve/release....',

61: IBM comment from George Penokie : Page 52

Page 24 - section 5.5.2 - The statement '...initiator (a third-party initiator).' should be changed to '...initiator (i.e., a third-party

initiator).'. .

62: IBM comment from George Penokie : Page 52  
Page 24 - section 5.5.2 - 2nd paragraph - The statement '...require significant reinitialization after...' should be changed to '...require reinitiatization after...'. The term significant is not quantifiable.

63: IBM comment from George Penokie : Page 52  
Page 24 - section 5.5.3.1 - The which should be a that.

64: IBM comment from George Penokie : Page 53  
Page 25 - section 5.5.3.2 - The term Active Persist Through Power Loss should not be capitalized.

65: IBM comment from George Penokie : Page 53  
Page 25 - section 5.5.3.2 - last paragraph of page before the a,b,c list. The statement '...the Persist Through Power Loss (APTPL)...' should be '...the APTPL...'. .

66: IBM comment from George Penokie : Page 54  
Page 26 - section 5.5.3.3.2 - last paragraph - The term port is used but a SCSI port has not been defined. I suggest port be changed to target in this case.

67: IBM comment from George Penokie : Page 57  
Page 29 - section 5.5.3.6.1 - The capitals should be removed from the following terms 'Write Exclusive - Registrants Only or Exclusive Access - Registrants Only'. These terms appear in other sections and should have the caps removed in those places also.

68: IBM comment from George Penokie : Page 62  
Page 34 - section 5.6 - The statement 'Additional ports provide...' should be changed to 'Additional service delivery ports provide...'. .

69: IBM comment from George Penokie : Page 62  
Page 34 - section 5.6 - The statement '...among the ports...' should be changed to '...among the service delivery ports...'. In the general case all references to port in this section should be changed to service delivery port.

70: IBM comment from George Penokie : Page 62  
Page 34 - section 5.6 - The following statement '...initiators (regardless of port) except...' should be changed to '...initiators, regardless of port, except...'. .

71: IBM comment from George Penokie : Page 63  
Page 35 - section 5.7 - last paragraph - The statement '...element 0.' should be '...element zero.'. .

72: IBM comment from George Penokie : Page 65  
Page 37 - section 7.1 - table 10 - The formatting of this table should be change to add a double line after the header and before the footer. This should be done for all tables in this standard. Also this table should be made to fit on one page.

73: IBM comment from George Penokie : Page 68  
Page 40 - section 7.3.1 - The statement '...unit (source device) to a logical unit (destination device).' should be '...unit (i.e., source device) to a logical unit (i.e., destination device).'. .

74: IBM comment from George Penokie : Page 68  
Page 40 - section 7.3.1 - The statement '...SCSI device (in fact all three may be the same logical unit).' should be '...SCSI device and all three may be the same logical unit.'. .

75: IBM comment from George Penokie : Page 68  
Page 40 - section 7.3.1 - 2nd paragraph from bottom of page - The statement '...priority of 1. Priority 0...' should be '...priority of one. Priority zero...'. .

76: IBM comment from George Penokie : Page 68

Page 40 - section 7.3.1 - The last sentence of the page is split between tables 13 and 14. This need to be corrected with those tables being placed after the end of the paragraph.

77: IBM comment from George Penokie : Page 70

Page 42 - section 7.3.3 - 2nd paragraph - The statement '...be the source or destination SCSI device (or both).' should be '...be either the source or destination SCSI device or both.'

78: IBM comment from George Penokie : Page 70

Page 42 - section 7.3.3 - paragraphs after a.b list - The statement '...of an area that contains (unchanged) the...' is unclear as to what is unchanged. This needs to be fixed.

79: IBM comment from George Penokie : Page 72

Page 44 - section 7.3.5 - 3rd paragraph after table - The statement '...transferred to or from (depending on the DC bit)...' should be '...transferred to, if the DC bit is set to x, or from, if the DC bit is set to y,....'

80: IBM comment from George Penokie : Page 74

Page 46 - section 7.3.7 - last paragraph - The statement '...transferred to or from (depending on the DC bit)...' should be '...transferred to, if the DC bit is set to x, or from, if the DC bit is set to y,....'

81: IBM comment from George Penokie : Page 75

Page 47 - section 7.3.7 - item d in list - The term RSmk needs to be in small caps.

82: IBM comment from George Penokie : Page 75

Page 47 - section 7.3.8 - 1st paragraph - The statement 'The PAD bit (in the command descriptor block) and the CAT bit (in each applicable segment descriptor)...' should be changed to 'The CDB PAD bit and the applicable segment descriptor CAT bit...'

83: IBM comment from George Penokie : Page 75

Page 47 - section 7.3.8 - table 19 - 1st row - The statement '...blocks (variable-block...)' should be changed to '...blocks (i.e., variable-block...'

84: IBM comment from George Penokie : Page 77

Page 49 - section 7.5.1 - 1st paragraph - The statement '...device (in fact all the devices and the copy manager may be the same logical unit).' should be changed to '...device. It is possible that all the SCSI devices and the copy manager are the same logical unit).'

85: IBM comment from George Penokie : Page 77

Page 49 - section 7.5.1 - 1st paragraph after table - The statement '...execute any activities necessary...' should be changed to '...take any necessary actions required...'

86: IBM comment from George Penokie : Page 77

Page 49 - section 7.5.1 - 1st paragraph after table - The statement 'These activities may...' should be changed to 'These actions may...'

87: IBM comment from George Penokie : Page 78

Page 50 - section 7.5.1 - paragraph under note 6 - The statement '...is a unique value selected by the application client to identify the extended...' should be changed to '...is a value selected by the application client to uniquely identify the extended...'

88: IBM comment from George Penokie : Page 79

Page 51 - section 7.5.1 - 1st paragraph of page - The statement '...priority of 1. Priority 0 is...' should be changed to '...priority of one. Priority zero is...'

89: IBM comment from George Penokie : Page 79

Page 51 - section 7.5.1 - 2nd paragraph of page - The term most is used. But there is not clear definition of how many most is. What I consider to be most could be very different than what the next person thinks is most. This needs to be fixed but since I have no reference to pick from I will replace most with 99%.

90: IBM comment from George Penokie : Page 79

Page 51 - section 7.5.1 - 3rd paragraph from top of page - The statement '...actions and dictated by the...' should be changed to '...actions and defined by the...'

91: IBM comment from George Penokie : Page 79

Page 51 - section 7.5.1 - 5th paragraph from top of page - The statement '...devices (which are the source and/or the destination logical units).' should be '...devices that are the source and/or the destination logical units).'

92: IBM comment from George Penokie : Page 79

Page 51 - section 7.5.1 - 3rd paragraph from bottom of page - The statement '...the descriptors (both target and segment) permitted...' should be changed to '...the target and segment descriptors permitted...'

93: IBM comment from George Penokie : Page 79

Page 51 - section 7.5.1 - The term Inline should not be capitalized.

94: IBM comment from George Penokie : Page 79

Page 51 - section 7.5.1 - last paragraph of page - The statement '...in the manner...' should be changed to '...as...'

95: IBM comment from George Penokie : Page 79

Page 51 - section 7.5.1 - last paragraph of page - The statement '(particularly stream devices)' is out of place. I suggest a note after this paragraph indicating that is in an important feature with streaming devices be added and the statement in ()s be deleted.

96: IBM comment from George Penokie : Page 80

Page 52 - section 7.5.2 - The statement 'include parity errors' is dated. Most new devices use CRC not parity for detecting error. The statement should be changed to '...include CRC or parity errors...'

97: IBM comment from George Penokie : Page 80

Page 52 - section 7.5.3 - The statement '...the ACA condition (if any)...' should be changed to '...any ACA condition...'

98: IBM comment from George Penokie : Page 81

Page 53 - section 7.5.3 - item e and f - Here, as in the copy command there is the term (unchanged) which makes just as little sense here as it did in the copy command. This needs to be fixed and/or explained.

99: IBM comment from George Penokie : Page 81

Page 52 - section 7.5.3 - the a,b,c list - There are a few cases were a 1 or 0 are used. These should be change to one or zero.

100: IBM comment from George Penokie : Page 82

Page 54 - section 7.5.5 - table 23 - footnote - The term '(tape)' is redundant and should be deleted.

101: IBM comment from George Penokie : Page 82

Page 54 - table 23 - This table should be made to fit on one page.

102: IBM comment from George Penokie : Page 84

Page 56 - section 7.5.6.1 - 2nd paragraph of page - The statement ' NUL=1' should be changed to 'a NUL bit of one'.

103: IBM comment from George Penokie : Page 84

Page 56 - section 7.5.6.1 - 1st paragraph after table - The statement 'change the state' is not clear. What states are there to be changing from or to. To this point I have read nothing to help in the understanding of this.

104: IBM comment from George Penokie : Page 85  
Page - 57 - section 7.5.6.2 - 2nd paragraph after table - The statement  
'...the target (source or destination)...' should be changed to '...the source  
or destination...'

105: IBM comment from George Penokie : Page 85  
Page 57 - section 7.5.6.2 - 3rd paragraph after table - This paragraph  
references where to find the WWID. There are several problems with this. For  
one not all SCSI protocols have a WWID port address so how what happens with  
those. For another FC-PH is the wrong standard to reference, FC-FS would be  
better. But it would be better to reference the device identifier VPD page  
which has the same WWID in it.

106: IBM comment from George Penokie : Page 86  
Page 58 - section 7.5.6.3 - Why is this protocol specific stuff in this  
document. It should be moved to the specific protocol document or made  
generic. Also there should be no references to FC-PH in this standard. All  
references should be to FC-FS or FC-PI as appropriate.

107: IBM comment from George Penokie : Page 86  
Page - 58 - section 7.5.6.3 - 2nd paragraph after table - The statement  
'...the target (source or destination)...' should be changed to '...the source  
or destination...'

108: IBM comment from George Penokie : Page 87  
Page 59 - section 7.5.6.4 - Why is this protocol specific stuff in this  
document. It should be moved to the specific protocol document or made  
generic. Also there should be no references to FC-PH in this standard. All  
references should be to FC-FS or FC-PI as appropriate.

109: IBM comment from George Penokie : Page 88  
Page 59 - section 7.5.6.5 - Why is this protocol specific stuff in this  
document. It should be moved to the specific protocol document or made  
generic.

110: IBM comment from George Penokie : Page 88  
Page - 60 - section 7.5.6.5 - 2nd paragraph after table - The statement  
'...the target (source or destination)...' should be changed to '...the source  
or destination...'

111: IBM comment from George Penokie : Page 90  
Page 62 - section 7.5.6.7 - The statement '...type. That is, the copy manager  
may perform read operations from a source disk at any time and in any order  
during processing of an EXTENDED COPY command, provided that the relative  
order of writes and reads on the same blocks within the same target descriptor  
does not differ from their order in the segment descriptor list.' should be  
changed to '...type (i.e., the copy manager may perform read operations from a  
source disk at any time and in any order during processing of an EXTENDED COPY  
command, provided that the relative order of writes and reads on the same  
blocks within the same target descriptor does not differ from their order in  
the segment descriptor list).'

112: IBM comment from George Penokie : Page 91  
Page 63 - section 7.5.6.8 - The statement '(device type code value 01h)'  
should be deleted as it contains no useful information. Specific device type  
are used throughout this standard and in those places the code value is not  
specified so way is it here.

113: IBM comment from George Penokie : Page 91  
Page 63 - section 7.5.6.8 - note 11 - The term will is used. It needs to be  
replaced or removed.

114: IBM comment from George Penokie : Page 91  
Page 63 - section 7.5.6.8 - The following statement '...type. That is, the  
read operations required by a segment descriptor for which the source is a  
stream device shall not be started until all write operations for previous  
segment descriptors have completed.' should be changed to '...type (i.e., the

read operations required by a segment descriptor for which the source is a stream device shall not be started until all write operations for previous segment descriptors have completed.'

115: IBM comment from George Penokie : Page 93  
Page 65 - section 7.5.7.1 - 2nd paragraph after table - The statement 'structure (block or stream).'

116: IBM comment from George Penokie : Page 93  
Page 65 - section 7.5.7.1 - item b in list- The which should be changed to a that.

117: IBM comment from George Penokie : Page 93  
Page 65 - section 7.5.7.1 - item a in second list - The () should be replaced with , , ,

118: IBM comment from George Penokie : Page 94  
Page 66 - section 7.5.7.1 - table 36 - 3rd row and last row - Reword to get rid of the ()s.

119: IBM comment from George Penokie : Page 94  
Page 66 - section 7.5.7.1 - table 36 - indent the footnote

120: IBM comment from George Penokie : Page 95  
Page 67 - section 7.5.7.1 - table 37 - Make this table fit on one page.

121: IBM comment from George Penokie : Page 95  
Page 67 - section 7.5.7.1 - table 37 - footnote 1 - The 'CAT=1' should be 'the CAT bit is set to one'. and the 'PAD=1' should be 'the PAD bit is set to one'

122: IBM comment from George Penokie : Page 96  
Page 68 - section 7.5.7.1 - 1 paragraph after table 37 - All the ()s should start with '(i.e.,'

123: IBM comment from George Penokie : Page 100  
Page 72 - section 7.5.7.4 - The statement '...processed (if DC=0) or to be written to the destination device (if DC=1).'

124: IBM comment from George Penokie : Page 104  
Page 76 - section 7.5.7.7 - 3rd paragraph after table - The statement '...field (including embedded data).'

125: IBM comment from George Penokie : Page 106  
Page 78 - section 7.5.7.9 - last paragraph on page - The statement (Test Unit Ready)' should be deleted. No where else is the bit acronym repeated after the initial definition.

126: IBM comment from George Penokie : Page 111.  
Page 83 - section 7.5.7.14 - last paragraph of page - The first field should be fields.

127: IBM comment from George Penokie : Page 115  
Page 87 - section 7.6.1 - note 14 - The statement 'An SCSI-3 application client...' should be changed to 'An application client...' because the term SCSI-3 is too narrow in this case and the references to SCSI-2 else where are enough to cover the case being warned about. Also the statement '...bit set to 1...' should be '...bit set to one...'.

128: IBM comment from George Penokie : Page 118  
Page 90 - section 7.6.2 - table 55 - This table should be set so it will not be split between page boundaries. All tables should be set this way as it is not helpful to the reader/developers to have tables splitting when it is possible to make them fit on one page.

- 129: IBM comment from George Penokie : Page 119  
Page 91 - section 7.6.2 - last paragraph on page - The statement '...CDB (as defined in SAM-2).' should be changed to '...CDB (see SAM-2).'
- 130: IBM comment from George Penokie : Page 120  
Page 92 - section 7.6.2 - 6th paragraph from top of page - The statement '...tagged tasks (command queuing)...' should be changed to '...tagged tasks (i.e., command queuing)...'.
- 131: IBM comment from George Penokie : Page 120  
Page 92 - section 7.6.2 - 8th paragraph from top of page - The statement '...multi-port (2 or more ports) device...' should be changed to '...multi-port (i.e., two or more ports) SCSI device...'
- 132: IBM comment from George Penokie : Page 120  
Page 92 - section 7.6.2 - 2nd paragraph from bottom of page - The statement '...tagged tasks (command queuing)...' should be changed to '...tagged tasks (i.e., command queuing)...'.
- 133: IBM comment from George Penokie : Page 120  
Page 92 - section 7.6.2 - The statement '...the field (lowest offset)...' should be '...the field (i.e., lowest offset)....'
- 134: IBM comment from George Penokie : Page 121  
Page 93 - section 7.6.2 - paragraph above table 58 - The recommended order of listing standards would be better if it was in an ordered list (1,2,3).
- 135: IBM comment from George Penokie : Page 125  
Page 97 - section 7.6.3 - The statement '...SPI-n (where n is 2 or greater).' should be '...SPI-n, where n is two or greater.'
- 136: IBM comment from George Penokie : Page 126  
Page 98 - section 7.6.4 - note 18 - The statement '...prohibits normal command execution.' should be changed to '...prohibits normal command completion.'
- 137: IBM comment from George Penokie : Page 127  
Page 99 - section 7.6.5 - table 63 - row 001b - The statement '...byte 1 is undefined.' should be '...byte one is undefined.'
- 138: IBM comment from George Penokie : Page 128  
Page 100 - section 7.6.5 - 1st paragraph from top of page - The statement '...byte 1 is not valid.' should be '...byte one is not valid.'
- 139: IBM comment from George Penokie : Page 128  
Page 100 - Section 7.6.5 - 2nd paragraph under note 21 - The sentence 'If the device server evaluates a bit as all or part of a field in the CDB for the operation code being queried, the usage map shall contain a one in the corresponding bit position.' is unclear. What information is it trying to provide that is not already in the remaining parts of the paragraph?
- 140: IBM comment from George Penokie : Page 128  
Page 100 - 3rd paragraph after note 21 - The statement 'Thus, the CDB....' should be changed to 'For example, the CDB...'
- 141: IBM comment from George Penokie : Page 132  
Page 104 - section 7.8 - a,b,c list - a item - The statement '...last update (in response...)' should be '...last update (i.e., in response...)'.
- 142: IBM comment from George Penokie : Page 133  
Page 105 - section 7.9 - 1 st paragraph after table - The sentence 'Multiple port implementations may save one copy per logical unit and have it apply to all initiators on all ports or save a separate copy per logical unit for each initiator on each port.' should be deleted as we have not yet resolved the ports issues.
- 143: IBM comment from George Penokie : Page 133  
Page 105 - section 7.9 - 3rd paragraph after table - The statement 'The target



may provide for independent...' Should be changed to 'If a target provides for independent...' It is stated above that this is allowed there is no need to restate it.

144: IBM comment from George Penokie : Page 133

Page 105 - section 7.9 - last paragraph of page - The PS should be in small caps.

145: IBM comment from George Penokie : Page 134

(T) Page 106 - section 7.9 - paragraph between two a,b,c lists - The statement '...the device server may either:' is a problem because it implies there is some other way to handle rounding other than the ways listed. I do not believe this is the case so the 'may' should be changed to a 'shall'.

146: IBM comment from George Penokie : Page 134

Page 106 - section 7.9 - 2nd paragraph above note 24 - The statement '...any mode page (even those reported as non-changeable) as a result of changes...' should be changed to '...any mode page, even those reported as non-changeable, as a result of changes...'.

147: IBM comment from George Penokie : Page 135

Page 107 - section 7.11.1 - paragraph under table 69 - The statement '..., at the device server's discretion.' should be deleted as the 'may' stated earlier in the sentence implies just that.

148: IBM comment from George Penokie : Page 136

Page 108 - section 7.11.1 - note 26 - The statement 'Some devices implement no distinction between...' should be changed to 'Some SCSI devices may not distinguish between...'.

149: IBM comment from George Penokie : Page 136

Page 108 - section 7.11.1 - note 25 - This note should be inline text not a note.

150: IBM comment from George Penokie : Page 136

Page 108 - section 7.11.1 - note 28 - The statement '...block descriptor (if applicable).' should be '...block descriptor, if applicable.'

151: IBM comment from George Penokie : Page 136

Page 108 - section 7.11.1 - notes 27 and 28 - These note should be part of the main line text.

152: IBM comment from George Penokie : Page 137

Page 109 - section 7.11.3 - notes 29 and 30 - These notes should be made part of the main line text.

153: IBM comment from George Penokie : Page 137

Page 1.9 - section 7.11.3 - note 29 - The statement '...mode parameter (via MODE SELECT) results...' should be '...mode parameter using the MODE SELECT command shall result in...'.

154: IBM comment from George Penokie : Page 137

Page 109 - section 7.11.5 - note 31 - This note should be part of the main line text.

155: IBM comment from George Penokie : Page 140

Page 112 - section 7.13.3 - 1st paragraph under table- The statement '...set to 0 as part..' should be '...set to zero as part...'.

156: IBM comment from George Penokie : Page 140

Page 112 - section 7.13.3 - 2nd paragraph under table- The statement '...the list (byte 0 to the allocation length)...' should be change to '...the list (i.e., byte zero to the allocation length)...'.

157: IBM comment from George Penokie : Page 141

Page 113 - section 7.13.4.1 - 2nd paragraph under table- The statement '...the list (byte 0 to the allocation length)...' should be change to '...the list (i.e., byte zero to the allocation length)...'.

- 158: IBM comment from George Penokie : Page 141  
Page 113 - section 7.13.4.1 - 3rd paragraph after table - The statement 'Reservation descriptor' should be all small caps or have no caps. This is true throughout this section.
- 159: IBM comment from George Penokie : Page 142  
Page 114 - section 7.13.4.1 - 2nd paragraph on page - The term 'Logical Unit ' should not be capitalized throughout this section.
- 160: IBM comment from George Penokie : Page 142  
Page 114 - section 7.13.4.2.2 - The statement '...value of LU shall...' should be '...value of 0h shall...'
- 161: IBM comment from George Penokie : Page 142  
Page 114 - section 7.13.4.2.2 - The term 'Logical Unit ' should not be capitalized throughout this section.
- 162: IBM comment from George Penokie : Page 142  
Page 114 - section 7.13.4.2.3 - The statement '..value of Element shall...' should be changed to '...value of 2h shall...'
- 163: IBM comment from George Penokie : Page 142  
Page 114 -section 7.13.4.2.3 - The statement '...by the SCSI Medium Changer Commands -2 (SMC-2) standard.' should be '...by the SMC-2 standard'. The full name is already used in the normative references section and does not need to be repeated here.
- 164: IBM comment from George Penokie : Page 142  
Page 114 -section 7.13.4.2.3 - The term 'Element' should not be capitalized.
- 165: IBM comment from George Penokie : Page 143  
Page 115 - section 7.13.4.3 - table 79 - 2 nd row - The statement '...may execute tasks...' should be changed to '...may initiate tasks...'. Aside from the execution word; application clients do not execute they request executions.
- 166: IBM comment from George Penokie : Page 143  
Page 115 - section 7.13.4.3 - table 79 - 6th row - The statement '...may execute tasks...' should be changed to '...may initiate tasks...'. Aside from the execution word; application clients do not execute they request executions.
- 167: IBM comment from George Penokie : Page 144  
Page 116 - section 7.14.1 - 3rd paragraph after table - The term Service should not be capitalized throughout this section including table headings.
- 168: IBM comment from George Penokie : Page 145  
Page 117 - section 7.14.2 - table 81 - The statement '(for more information on xxx see xxx...' appears in several places. All should be changed to '(see xxxx).'
- 169: IBM comment from George Penokie : Page 146  
Page 118 - section 7.14.3 - last paragraph of page - The term 'Element' should not be capitalized throughout this section and in table 83.
- 170: IBM comment from George Penokie : Page 147  
Page 119 - section 7.14.3 - 1st paragraph above table 83 - The statement '...since it is specified above.' is not precise enough, there are 119 pages above which is being referred to. The 'above' needs to be deleted and replaced with a specific reference.
- 171: IBM comment from George Penokie : Page 147  
Page 119 -section 7.14.3 - 1st paragraph of page - The term 'Activate Persist Through Power Loss' should not be capitalized as this is not the convention used elsewhere in this document.
- 172: IBM comment from George Penokie : Page 148

Page 120 - section 7.15 - table 85 - rows 1 and 2 - The statement '(if any)' should be changed to ',if any' .

173: IBM comment from George Penokie : Page 148  
Page 120 - section 7.15 - The statement '...11b (medium removal...)' should be changed to '....11b (i.e., medium removal...)'.

174: IBM comment from George Penokie : Page 148  
Page 120 - section 7.15 - last paragraph - There should be a comma between EXISTING KEY and REGISTER.

175: IBM comment from George Penokie : Page 149  
Page 121 - section 7.16.1 - paragraph after table 86 - The term 'command descriptor block' should be changed to 'CDB' or all CDBs should be changed to 'command descriptor block'.

176: IBM comment from George Penokie : Page 150  
Page 122 - section 7.16.5 - The statement '... field (see the description of the buffer ID in 7.16.4).' should be changed to 'field (see 7.16.4)'.

177: IBM comment from George Penokie : Page 151  
Page 123 - section 7.16.5 - note 32 - The statement '...reservations (to all logical units on the device) or...' should be '...reservations to all logical units on the SCSI device or...'.

178: IBM comment from George Penokie : Page 152  
Page 124 - section 7.16.7 - last paragraph on page - The statement 'An EBOS bit of zero means that the..' should be 'A EBOS bit of zero specifies that the...'.

179: IBM comment from George Penokie : Page 153  
Page 125 - section 7.17.1 - The statement '...previous (or current)...' should be '...previous or current...'.

180: IBM comment from George Penokie : Page 154  
Page 126 - section 7.17.1 - table 93 - The term 'immediately' is used but what does it mean? As part of the current connection? As the first thing on the next connection? What? This needs to be quantified.

181: IBM comment from George Penokie : Page 155  
Page 127 - section 7.17.2 - The statement '...command, then it shall...' should be '...command, it.shall...'.

182: IBM comment from George Penokie : Page 155  
Page 127 - section 7.17.2 - In some cases the term vendor specific is written as 'vendor specific' and in other cases as 'vendor-specific' this needs to be made consistent throughout the document.

183: IBM comment from George Penokie : Page 155  
Page 127 - section 7.17.2 - a,b,c list - a item - The statement '...with a matching list identifier;' should be '... and the list identifier matches the list identifier associated with the preserved COPY STATUS service actions data;'

184: IBM comment from George Penokie : Page 155  
Page 127 - section 7.17.2 - paragraph after a,b,c list - The sentence 'The AVAILABLE DATA field shall contain the number of bytes present in the parameter data that follows, eight.' does not make sense and references something that 'follows'. It is not clear if that is data or something in the standard. And what is 'eight' referring to?

185: IBM comment from George Penokie : Page 155  
Page 127 - section 7.17.2 - table 95 - 1st row - The statement 'Operating in progress' should be 'Operation in progress'.

186: IBM comment from George Penokie : Page 156  
Page 128 - section 7.17.2 - table 96 - I do not believe there should be '- 's between Kilo, mega, giag, tera, peta, and bytes.

- 187: IBM comment from George Penokie : Page 157  
Page 129 - section 7.17.3 - table 97 - The term 'held data' should be small caps.
- 188: IBM comment from George Penokie : Page 157  
Page 129 - section 7.17.3 - 1st paragraph after table - The term 'immediately' is used but what does it mean? As part of the current connection? As the first thing on the next connection? What? This needs to be quantified.
- 189: IBM comment from George Penokie : Page 157  
Page 129 - section 7.17.3 - a.b.c list - item b - The statement '...field set to 0;' should be '...field set to zero;'
- 190: IBM comment from George Penokie : Page 157  
Page 129 - section 7.17.3 - a.b.c. list - item c - The statement '...the same list identifier;' should be '... and the list identifier matches the list identifier associated with the preserved RECEIVE DATA service actions data;'
- 191: IBM comment from George Penokie : Page 157  
Page 129 - section 7.17.3 - last paragraph on page - The statement '...bytes than are needed immediately, but...' should be '...bytes than are needed, but...'. The term immediately is not quantified and not necessary in this case as it add no additional information.
- 192: IBM comment from George Penokie : Page 159  
Page 131 - section 7.17.4 - The statement 'set to 1' occurs several times in this section. All these should be changed to 'set to one'.
- 193: IBM comment from George Penokie : Page 159  
Page 131 - section 7.17.4 - 5th paragraph from bottom of page - The statement '...descriptor (segment descriptors...)' should be '...descriptor (i.e., segment descriptors...)'.
- 194: IBM comment from George Penokie : Page 159  
Page 131 - section 7.17.4 - 5th paragraph from bottom of page - The statement 'power of 2' should be 'power of two' in several places in this section.
- 195: IBM comment from George Penokie : Page 160  
Page 132 - section 7.17.4 - 1st and 2nd paragraph - The term 'List' should not be capitalized.
- 196: IBM comment from George Penokie : Page 160  
Page 132 - section 7.17.5 - 2nd paragraph - The statement '...target devices (in particular stream...)' should be '...target devices (i.e., stream...)'.
- 197: IBM comment from George Penokie : Page 160  
Page 132 - section 7.17.5 - a.b.c list - item b - The statement '...field set to 0;' should be '...field set to zero;'
- 198: IBM comment from George Penokie : Page 161  
Page 133 - section 7.17.5 - note 33 - The last sentence should be deleted as it has not significant value.
- 199: IBM comment from George Penokie : Page 164  
Page 136 - section 7.19.3 - note 36 - The statement '...device (usually a copy...)' should be changed to '...device (e.g., a copy...)'.
- 200: IBM comment from George Penokie : Page 166  
Page 138 - section 7.21 - 1st paragraph - The term standard inquiry' should be all caps as it is the name of a parameter list.
- 201: IBM comment from George Penokie : Page 166  
Page 138 - section 7.21 - 1st paragraph - The statement '...actions (that apply to SCC-2...)' should be '...actions (i.e., SCC-2...)'.
- 202: IBM comment from George Penokie : Page 166  
Page 138 - section 7.21 - 1st paragraph - The statement '...action concerns

all SCSI...' should be '..action applies to all SCSI...'.  
'

203: IBM comment from George Penokie : Page 166  
Page 138 - section 7.21 - 2nd paragraph after table - The statement '...how much space has been...' should be 'how many bytes has been...'.  
'

204: IBM comment from George Penokie : Page 167  
Page 139 - section 7.21 - 2nd to last paragraph on page - The statement '... to all initiators on all ports.' should be '...to all initiator.' The statement 'on all ports' add no addition value.  
'

205: IBM comment from George Penokie : Page 167  
Page 139 - section 7.21 - last paragraph on page - The statement 'The execution of a REPORT DEVICE IDENTIFIER may require...' should be change to A REPORT DEVICE IDENTIFIER command may require...'.  
'

206: IBM comment from George Penokie : Page 170  
Page 142 - section 7.23.1 - 2nd paragraph after table - The terms 'Standby' and 'Idle' should not be capitalized throughout this section.  
'

207: IBM comment from George Penokie : Page 171  
Page 143 - section 7.32.2 - last paragraph - The statement '...condition (end-of-partition, beginning-of-partition, out-of-paper, etc.)...' should be '...condition (e.g., end-of-partition, beginning-of-partition, out-of-paper)...'.  
'

208: IBM comment from George Penokie : Page 172  
Page 144 - section 7.23.2 - a,b,c list - There are several places where the statement '(device type x)' should be changed to '(i.e., device type x)'.  
'

209: IBM comment from George Penokie : Page 172  
Page 144 - section 7.23.2 - a,b,c list - There are several places where the statement '(residue)' should be changed to '(i.e., residue)'.  
'

210: IBM comment from George Penokie : Page 172  
Page 144 - section 7.23.2 - a,b,c list - item b -The sentence '(Negative values are indicated by two's complement notation.);' should be 'Negative values are indicated by two's complement notation.;'.  
'

211: IBM comment from George Penokie : Page 172  
Page 144 - section 7.23.2 - a,b,c list - d,a item - The statement '...mode (block length field...' should be '...mode (i.e., block length field...' and the term 'block length' should be small caps.  
'

212: IBM comment from George Penokie : Page 172  
Page 144 - section 7.23.2 -abc list - d.b item - The statement '...mode (the fixed bit of the...' should be '...mode (i.e., the fixed bit of the...' and the term 'fixed' should be small caps.  
'

213: IBM comment from George Penokie : Page 172  
Page 144 - section 7.23.2 - T2nd to last paragraph on page - he term 'command-specific information' should be all caps.  
'

214: IBM comment from George Penokie : Page 172  
Page 144 - section 7.23.2 - last paragraph of page - The term 'sense key' should be all caps.  
'

215: IBM comment from George Penokie : Page 173  
Page 145 - section 7.23.3 - last paragraph - The term 'additional sense bytes' should be all caps.  
'

216: IBM comment from George Penokie : Page 173  
Page 145 - section 7.23.3 - 1st and 2nd paragraphs - The term 'SKSV' should be in small caps.  
'

217: IBM comment from George Penokie : Page 173  
Page 145 - section 7.23.3 - 2nd and 3rd paragraph after table - The statement '(left-most)' should be '(i.e., left-most)'.  
'

- 218: IBM comment from George Penokie : Page 174  
Page 146 - section 7.23.3 - 1st paragraph after table 112 - The number 65536 is not in the correct format. It should be 65 536.
- 219: IBM comment from George Penokie : Page 175  
Page 147 - section 7.23.3 - 2nd paragraph from top - The statement '(left-most)' should be '(i.e., left-most)'.
- 220: IBM comment from George Penokie : Page 175  
Page 147 - section 7.23.3 - note 42 - The number 65536 is not in the correct format. It should be 65 536.
- 221: IBM comment from George Penokie : Page 175  
Page 147 - section 7.23.5 - 3rd paragraph - The statement '...initiator as described below.' does not specific the location of 'below' this need to be corrected with a cross-reference.
- 222: IBM comment from George Penokie : Page 175  
Page 147 - section 7.23.5 - The statement 'The subsequent execution of a REQUEST SENSE command...' should be 'A subsequent REQUEST SENSE command...'.
- 223: IBM comment from George Penokie : Page 175  
Page 147 - section 7.23.5 - 4th paragraph - The following statement '...to the rules described below:' should be '... the following rules;'.
- 224: IBM comment from George Penokie : Page 176  
Page 148 - section 7.23.6 - table 114 - This table should be made to fit on one page.
- 225: IBM comment from George Penokie : Page 176  
Page 148 - section 7.23.6 - table 114 - row 2 - The statement '...report (first, last, most severe, etc.)...' should be '...report (e.g., first last, most severe)...'.
- 226: IBM comment from George Penokie : Page 176  
Page 148 - section 7.23.6 - table 114 - row 5 - The statement '...failure (for example, controller failure, device failure, parity error, etc.)...' should be '...failure (e.g, controller failure, device failure, parity error)...'.
- 227: IBM comment from George Penokie : Page 176  
Page 148 - section 7.23.6 - table 114 - row 4 - The statement '...failure (sense key 4h).' should be '...failure (i.e., sense key 4h)'.
- 228: IBM comment from George Penokie : Page 177  
Page 149 - section 7.23.6 - table 114(2 of 2) - row 5 - The statement '(See 7.3.3 for additional information about the use of this sense key with the COPY, COMPARE, and COPY AND VERIFY commands. See 7.5.3 for additional information about the use of this sense key with the EXTENDED COPY command.)' should have the ()s removed.
- 229: IBM comment from George Penokie : Page 177  
Page 149 - section 7.23.6 - table 114(2of2) - row 1 - The statement '..commands (FORMAT UNIT, SEARCH DATA, etc.)..' should be '...commands (e.g., FORMAT UNIT, SEARCH DATA)..'
- 230: IBM comment from George Penokie : Page 193  
Page 165 - section 7.24.4 - The statement '...reservation (other than the reservation being superseded),...' should be '...reservation, other than the reservation being superseded,...'.
- 231: IBM comment from George Penokie : Page 194  
Page 166 - section 7.26 - 1st paragraph - The statement '...feature (the selftest bit...' should be '...feature (i.e., the selftest bit...'.
- 232: IBM comment from George Penokie : Page 194  
Page 166 - section 7.26 - table 120 - The term 'translate address' should be all caps as it is the name of a mode page.

- 233: IBM comment from George Penokie : Page 195  
Page 167 - section 7.26 - 1st paragraph after a,b,c list - The statement '...logical unit, e.g., write operations to the user accessible medium, or repositioning of the medium on sequential access devices.' should be '...logical unit (e.g., write operations to the user accessible medium, or repositioning of the medium on sequential access devices.)'.
- 234: IBM comment from George Penokie : Page 195  
Page 167 - section 7.26 - 2nd paragraph after a,b,c list - The statement '..target, e.g., alteration of reservations, log parameters, or sense data.' should be '... target (e.g., alteration of reservations, log parameters, or sense data).'
- 235: IBM comment from George Penokie : Page 195  
Page 167 - section 7.216 - 3rd paragraph after a,b,c list - The statement '...pages (PF bit set to...)' should be '...pages (i.e., PF bit set to...).
- 236: IBM comment from George Penokie : Page 195  
Page 167 - section 7.27 - 1st paragraph - The statement '...action concerns all SCSI...' should be '..action applies to all SCSI...'.
- 237: IBM comment from George Penokie : Page 196  
Page 168 - section 7.27 - 2nd paragraph after table 121 - The term 'Identifier' should not be capitalized.
- 238: IBM comment from George Penokie : Page 199  
Page 171 - section 7.29.2 - The statement '...command (mode 00b).' should be '...command (i.e., mode 00b).'
- 239: IBM comment from George Penokie : Page 199  
Page 171 - section 7.29.4 - 3rd paragraph - The sentence '(The capacity of the buffer may be determined by the BUFFER CAPACITY field in the READ BUFFER descriptor.) ' should have the ()s removed.
- 240: IBM comment from George Penokie : Page 200  
Page 172 - section 7.29.7 - 3rd paragraph from bottom of page - The statement '...change (one or more commands) are...' should be '...change (i.e., one or more commands) are...'
- 241: IBM comment from George Penokie : Page 200  
Page 172 - section 7.29.7 - 2nd last paragraph from bottom of page - The term 'Buffer' should not be capitalized.
- 242: IBM comment from George Penokie : Page 201  
Page 173 - section 7.29.8 - 2nd paragraph from top of page - The sentence '(The capacity of the buffer may be determined by the BUFFER CAPACITY field in the READ BUFFER descriptor.) ' should have the ()s removed.
- 243: IBM comment from George Penokie : Page 201  
Page 173 - section 7.29.8 - 2nd paragraph - The statement '...space (semiconductor, disk, or other)...' should be '...space (e.g., semiconductor, disk)...'.
- 244: IBM comment from George Penokie : Page 201  
Page 173 - section 7.29.8 - 4th paragraph from bottom of page - The statement '...change (one or more commands) are...' should be '...change (i.e., one or more commands) are...'
- 245: IBM comment from George Penokie : Page 201  
Page 173 - section 7.29.8 - last paragraph from bottom of page - The sentence '(The capacity of the buffer may be determined by the BUFFER CAPACITY field in the READ BUFFER descriptor.) ' should have the ()s removed.
- 246: IBM comment from George Penokie : Page 201  
Page 173 - section 7.29.8 - 3rd to last paragraph from bottom of page - The term 'Buffer' should not be capitalized.

247: IBM comment from George Penokie : Page 203

Page 175 - section 8.1.1 - 1st paragraph - The statement 'This clause describes the...' should be 'This subclause describes the...'.  
'

248: IBM comment from George Penokie : Page 203

Page 175 - section 8.1.1 - 1st paragraph after table 127 - The statement '...shall perform (SEND DIAGNOSTIC command) or the information being returned (RECEIVE DIAGNOSTIC RESULTS with PCV equal to one).' should be changed to '...shall perform as a result of a SEND DIAGNOSTIC command or the information being returned as a result of a RECEIVE DIAGNOSTIC RESULTS with PCV equal to one.'

249: IBM comment from George Penokie : Page 203

Page 175 - section 8.1.1 - 3rd paragraph after table 127 - The statement '...being sent (SEND DIAGNOSTIC), requested (RECEIVE DIAGNOSTIC RESULTS with PCV equal to one) or returned (RECEIVE DIAGNOSTIC RESULTS parameter data).' should be '...being sent as a result of a SEND.DIAGNOSTIC command, requested as a result of a RECEIVE DIAGNOSTIC RESULTS command with PCV equal to one, or returned as a result of a RECEIVE DIAGNOSTIC RESULTS parameter data.'

250: IBM comment from George Penokie : Page 205

Page 177 - section 8.2.1 - 1st paragraph - The statement 'This clause describes the...' should be 'This subclause describes the...'.  
'

251: IBM comment from George Penokie : Page 206

Page 178 - section 8.2.1 - 1st paragraph - The statement '...parameters (strings)...' should be '...parameters (i.e., strings)...'.  
'

252: IBM comment from George Penokie : Page 206

Page 178 - section 8.2.1 - 1st paragraph - The statement ' ...event (or events)...' should be '...event(s)...'.  
'

253: IBM comment from George Penokie : Page 206

Page 178 - section 8.2.1 - 3rd paragraph after table 131 - The statement '...are described below.' should be '...are described below in this subclause.'

254: IBM comment from George Penokie : Page 206

Page 178 - section 8.2.1 - 4th paragraph under table 131 - The statement '...values (indicated by the PC field of the LOG SELECT and LOG SENSE command descriptor block), the disable...' should be '...values (indicated by the PC field of the LOG SELECT and LOG SENSE commands, the disable...'.  
'

255: IBM comment from George Penokie : Page 206

Page 178 - section 8.2.1 - note 50 - The statement '...one (or a target-defined event occurs).' should be '...one or a target-defined event occurs.'.  
'

256: IBM comment from George Penokie : Page 206

Page 178 - section 8.2.1 - note 50 - The statement 'Thus the updated...' should be 'As a result the updated...'.  
'

257: IBM comment from George Penokie : Page 206

Page 178 - section 8.2.1 - 3rd paragraph from bottom of page - The statement '...values (indicated by the PC field of the LOG SENSE command descriptor block) nor for list parameters (indicated by the LP bit).' should be '...values as indicated by the PC field of the LOG SENSE command nor for list parameters as indicated by the LP bit.'

258: IBM comment from George Penokie : Page 206

Page 178 - section 8.2.1 - 2nd paragraph from bottom of page - The statement '...value (depending on the value in the PC field of the command descriptor block) in...' should be '...value, depending on the value in the PC field of the command descriptor block, in...'.  
'

259: IBM comment from George Penokie : Page 207

Page 179 -section 8.2.1 - 3rd paragraph above a,b list - The statement '...correctly (except for the data counter being at its maximum value) and  
'



if...' should be '...correctly, except for the data counter being at its maximum value, and if...'.

260: IBM comment from George Penokie : Page 208

Page 180 - section 8.2.1 - 1st paragraph of page - The statement '...correctly (except for the parameter code being at its maximum value) and if...' should be '...correctly, except for the parameter code being at its maximum value, and if...'.

261: IBM comment from George Penokie : Page 213

Page 185 - section 8.2.4 - 1st paragraph - The statements '(page code xxh)' should all be changed to (i.e., page code xxh)'.

262: IBM comment from George Penokie : Page 213

Page 185 - section 8.2.5 - last paragraph - The statement '...one (binary information). The LP bit shall be set to one (list parameter).' should be '...one to indicate binary information. The LP bit shall be set to one to indicate a list parameter.'.

263: IBM comment from George Penokie : Page 214

Page 186 - section 8.2.8 - The term 'Self-test' should not be capitalized.

264: IBM comment from George Penokie : Page 216

Page 188 - section 8.2.8 - table 145 - 2nd row - The statement '...100b (Abort background self-test).' should be '...100b (i.e., abort background self-test).'

265: IBM comment from George Penokie : Page 217

Page 189 - section 8.2.9 - table 146 - This table should be made to fit on one page.

266: IBM comment from George Penokie : Page 219

Page 191 - section 8.2.9 - 1st paragraph on page - The statement '...lifetime (parameter code 0003h)...' should be '...lifetime (i.e., parameter code 0003h)...'.

267: IBM comment from George Penokie : Page 219

Page 191 - section 8.2.9 - 1st paragraph after table - The statement '..cycles (parameter code 0004h)...' should be '..cycles (i.e., parameter code 0004h)...'.

268: IBM comment from George Penokie : Page 220

Page 192 - section 8.2.11 - 1st paragraph - The statement 'This clause defines...' should be 'This subclause defines...'.

269: IBM comment from George Penokie : Page 222

Page 194 - section 8.3.1 - 1st paragraph - The statement 'This clause defines...' should be 'This subclause defines...'.

270: IBM comment from George Penokie : Page 223

Page 195 - section 8.3.3 - last paragraph on page - The statement '...times eight (if LONGLBA=0) or times sixteen (if LONGLBA=1),...' should be '...times eight if the LONGLBA bit is set to zero or times sixteen if LONGLBA bit is set to one,...'.

271: IBM comment from George Penokie : Page 224

Page 196 - section 8.3.4.1 - 1st paragraph - The statement 'When LONGLBA equals 0...' should be 'When the LONGLBA bit is set to zero...'.

272: IBM comment from George Penokie : Page 225

Page 197 - section 8.3.4.2 - 1st paragraph - The statement 'When LONGLBA equals 0...' should be 'When the LONGLBA bit is set to zero...'.

273: IBM comment from George Penokie : Page 225

Page 197 - section 8.3.4.2 - 1st paragraph after table - The statement 'When LONGLBA equals 0...' should be 'When the LONGLBA bit is set to zero...'.

274: IBM comment from George Penokie : Page 225

Page 197 - section 8.3.4.2 - 1st paragraph above a,b,c list - The statement '...field (via a MODE SELECT command), the...' should be '...field using the MODE SELECT command, the...'.  
275: IBM comment from George Penokie : Page 225

Page 197 - section 8.3.4.2 - note 57 - The statement '...optimum values (the value that...' should be '...optimum values (i.e., the value that...'.  
276: IBM comment from George Penokie : Page 226

Page 198 - section 8.3.4.3 - 1st paragraph - The statement 'When LONGLBA equals 1...' should be 'When the LONGLBA bit is set to one...'.  
277: IBM comment from George Penokie : Page 226

Page 198 - section 8.3.4.3 - 1st paragraph above a,b,c list - The statement '...field (via a MODE SELECT command), the...' should be '...field using the MODE SELECT command, the...'.  
278: IBM comment from George Penokie : Page 227

Page 199 - section 8.3.4.3 - note 58 - The statement '...optimum values (the value that...' should be '...optimum values (i.e., the value that...'.  
279: IBM comment from George Penokie : Page 227

Page 199 - section 8.3.5 - 1st paragraph after table - The statement '...in this clause...' should be '...in this subclause...'.  
280: IBM comment from George Penokie : Page 227

Page 199 - section 8.3.5 - 2nd paragraph from bottom of page - The statement '...code 00h (vendor-specific page)...' should be '...code 00h (i.e., vendor-specific page)...'.  
281: IBM comment from George Penokie : Page 227

Page 199 - section 8.3.5 - 2nd paragraph from bottom of page - The statement '..pages (page code 3Fh)...' should be '...pages (i.e., page code 3Fh)...'.  
282: IBM comment from George Penokie : Page 230

Page 202 - section 8.3.6 - 1st paragraph above table 164 - The statement '(see the TST field.definition above)' should be deleted or changed to '(i.e, the TST field)'.  
283: IBM comment from George Penokie : Page 230

Page 202 - section 8.3.6 - 1st paragraph above table 164 - The statement 'TST=xxxb' should be changed to 'the TST field equals xxxb' in all cases throughout the document.  
284: IBM comment from George Penokie : Page 231

Page 203 - section 8.3.6 - The statement '(if defined)' should be deleted or changed to ',if defined,'.  
285: IBM comment from George Penokie : Page 231

Page 203 - section 8.3.6 - 3rd paragraph before table 165 - The statement '...event (other than upon completing an initialization sequence).' should be changed to '...event, other than upon completing an initialization sequence.'.  
286: IBM comment from George Penokie : Page 232

Page 204 - section 8.3.7 - 1st paragraph - The statement 'An SCSI...' should be changed to 'A SCSI...' This should be checked for throughout the document.  
287: IBM comment from George Penokie : Page 232

Page 204 - section 8.3.7 - 1st paragraph - The statement '...page (disconnect-reconnect)...' should be '...page (i.e., disconnect-reconnect)...'.  
288: IBM comment from George Penokie : Page 232

Page 204 - section 8.3.7 - 1st paragraph after the table - The term 'Target Role Agent' should not be capitalized.  
289: IBM comment from George Penokie : Page 233

Page 205 - section 8.3.7 - The statement 'Thus INTEGER...' should be

'Therefore in this example INTEGER...'

290: IBM comment from George Penokie : Page 233  
Page 205 - section 8.3.7 - 4th paragraph from bottom of page - The statement  
'...relationship (if any) between...' should be '...relationship, if any,  
between...'

291: IBM comment from George Penokie : Page 234  
Page 206 - section 8.3.8 - last paragraph - The statement '...(e.g., a value  
of one means 512 bytes, two means 1024 bytes, etc.)' should be '...(e.g., a  
value of one means 512 bytes, two means 1024 bytes)'

292: IBM comment from George Penokie : Page 235  
Page 207 - section 8.3.8 - 2nd paragraph from top of page - The statement  
'...time (as specified by the INTERVAL TIMER field),...' ...should be  
'...time, as specified by the INTERVAL TIMER field,...

293: IBM comment from George Penokie : Page 235  
Page 207 - section 8.3.8 - 2nd paragraph from top of page - The statement  
'...if the DEXCPT bit is not set.' should be '...if the DEXCPT bit is set to  
zero.'

294: IBM comment from George Penokie : Page 235  
Page 207 - section 8.3.8 - table 169 - 2nd row - The term 'SCSI-3 Architecture  
Mode' should be 'SAM-2' to be consistent with the reset of this document.

295: IBM comment from George Penokie : Page 237  
Page 209 - section 8.3.9 - 1st paragraph - The statement '...manner which  
reduces...' should be '...manner that reduces...'

296: IBM comment from George Penokie : Page 237  
Page 209 - section 8.3.9 - 3rd paragraph - The statement '...condition which  
allows...' should be '...condition that allows...'

297: IBM comment from George Penokie : Page 237  
Page 209 - section 8.3.9 - 3rd paragraph - The statement '...timer which  
maps...' should be '...timer that maps...'

298: IBM comment from George Penokie : Page 238  
Page 210 - section 8.3.9 - The terms Idle and Standby should not be  
capitalized.

299: IBM comment from George Penokie : Page 241  
Page 213 - section 8.4.1 - 1st paragraph - The statement 'This clause  
describes...' should be 'This subclause describes...'

300: IBM comment from George Penokie : Page 242  
Page 214 - section 8.4.3 - note 61 - The statement 'Thus it is not...' should  
be 'For that reason it is not...'

301: IBM comment from George Penokie : Page 242  
Page 214 - section 8.4.3 - 1st paragraph after note 61 - The term 'command  
descriptor block' should be changed to 'CDB'.

302: IBM comment from George Penokie : Page 243  
Page 215 - section 8.4.3 - 1 paragraph from top of page - The statement  
'...lines (or character strings).' should be '...lines or character strings.'

303: IBM comment from George Penokie : Page 243  
Page 215 - section 8.4.4 - note 62 - The term 'SCC' should be 'SCC-2'.

304: IBM comment from George Penokie : Page 243  
Page 215 - section 8.4.4 - note 62 - The statement '...in FC-PH, FC-PH-3 or  
FC-FS.' should be '...in FC-FS.'. FC-FS replaces the FC-PH standards.

305: IBM comment from George Penokie : Page 245  
Page 217 - section 8.4.4 - table 181 - row 4 - The statement '...in FC-PH,  
FC-PH-3 or FC-FS.' should be '...in FC-FS.'. FC-FS replaces the FC-PH

standards.

306: IBM comment from George Penokie : Page 245

Page 217 - section 8.4.4 - table 181 - rows 2 and 3 - The term '8' should be changed to 'eight'.

307: IBM comment from George Penokie : Page 245

Page 217 - section 8.4.4 - table 181 - row 3 - The term 'Canonical' should not be capitalized.

308: IBM comment from George Penokie : Page 245

Page 217 - section 8.4.4 - table 182 - rows 2 and 3 - The statements ',also known as port A' and ',also known as port B' should be deleted as there is no place else in any of the standards that talk about A or B ports.

309: IBM comment from George Penokie : Page 246

Page 218 - section 8.4.4 - table 183 footnotes - The footnotes should not have letters or numbers just a -. Also the terms 'Notes:' should be on a line by itself.

310: IBM comment from George Penokie : Page 249

Page 221 - section 9.3 - 1st paragraph under table - This paragraph should be removed and this command place in a table in the same way it was for all the other commands in this document.

311: IBM comment from George Penokie : Page 250

Page 222 - section 9.3 - 1st paragraph under table - The statement '...format (as defined by the SCSI-2 standard) shall...' should be '...format, as defined by the SCSI-2 standard, shall...'.  
'...format (as defined by the SCSI-2 standard) shall...'

312: IBM comment from George Penokie : Page 253

Page 225 - section - a.3 - 2nd paragraph - The statement '...SENSE Command Descriptor Block (CDB) fields.' should be '...SENSE CDB fields.'

313: IBM comment from George Penokie : Page 253

Page 225 - section a.3 - table a.1 - row 4 - The sentence in ( )s should have the ( )s removed.

314: IBM comment from George Penokie : Page 256

Page 228 - section - a.4 - 2nd paragraph - The statement '...SENSE Command Descriptor Block (CDB) fields.' should be '...SENSE CDB fields.'

315: IBM comment from George Penokie : Page 256

Page 228 - section a.4 - table a.4 - row 5 - The sentence in ( )s should have the ( )s removed.

316: IBM comment from George Penokie : Page 257

Page 229 - section a.4 - 2nd paragraph from top of page - The term 'Log Parameters' should not be capitalized.

317: IBM comment from George Penokie : Page 259

Page 231 - section a.5 - 1st paragraph - The statement 'This clause describes...' should be 'This subclause describes...'.  
'This clause describes...'

318: IBM comment from George Penokie : Page 260

Page 232 - section a.5 - table a.9 - 1st row - The statement '...activities will cause an ACA...' should be '...activities shall cause an ACA...'.  
'...activities will cause an ACA...'

319: IBM comment from George Penokie : Page 262

Page 234 - section b.1 - 1st paragraph - The statement '...next version of the SBC standard when, and if, a new version of that standard is published.' should be '...SBC-2 standard.'.  
'...next version of the SBC standard when, and if, a new version of that standard is published.'

320: IBM comment from George Penokie : Page 290

Page 262 - section c.5 - table c.4 2 of 2 - footnotes - The term 'Power Condition' and 'Fault.Failure Reporting Page' should not be capitalized.

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Comments attached to YesC ballot from Charles Binford of LSI Logic Corp.:

SPC-2 rev 18 Comments from LSI Logic  
Charles Binford

1 page 24, 5.5.3.1, 1st paragraph: E.g. link not accurate  
The parenthetical statement in the second sentence of 5.5.3.1 says fibre channel uses primitive signals for hard resets. This is not accurate.  
LIP(f7)  
or LIP(f8) do not reset anything, LIP(alpd) causes a vendor specified reset that  
PLDA says to implement as a power-on reset.

2 page 24, 5.5.3.1 Redundant sentence  
The last sentence of the first paragraph of 5.5.3.1 reads "Persistent reservations are optionally retained when power to the target is lost." This seems redundant with the following paragraph that clearly states the optional power cycle behavior.

Suggest deleting last sentence of first paragraph.

3 page 32, 5.5.3.6.3.4 Misleading statement  
The first sentence of this section states "An application client may clear registrations without affecting a persistent reservation...". I believe this is  
a bit misleading, it gives the impression the initiator has the option to remove  
a registration without affecting a reservation. This behavior is a function of  
what reservations happen to be active at the time of the preempt and not necessarily a choice of the initiator.

Suggest rewording the sentence to clarify the behavior is not a choice, but rather a side effect of the current state of things in the device server.

4 page 40, 7.3.1 Bad table reference  
The 'see table 11' should specify table 12 instead.

5 page 51, 7.5.1 Misspelling  
The second paragraph on page 51 uses the word 'stripped' twice. I believe both  
instances should be 'striped' instead.

6 page 112, 113, 7.13.3 Unclear requirement for Generation field  
In the paragraph under Table 75 it states, "The counter shall not be incremented by a PERSISTENT RESERVE IN command, by a PERSISTENT RESERVE OUT command that performs a RESERVE or RELEASE service action, or by a PERSISTENT RESERVE OUT command that is not performed due to an error or reservation conflict."

How does a device server know if the persistent reserve out command is performed due to an error? This seems to be an impossible requirement to fulfill.

Suggest either clarifying or removing last part of quoted sentence.

7 page 112, 113, 7.13.3 / 7.13.4.1 Allocation Length of Persistent Reserve  
In the second paragraph under Table 75 and the second paragraph under Table 76 the behavior specified for the condition when the allocation length is not sufficient is different than other commands. Section 4.3.6 specifies that device servers transmit up to allocation length number of bytes or all of the data, whichever is less. Persistent Reserve IN, however, specifies that either  
all of the data, or just the header. Was this deviation from the normal behavior on purpose or an oversight?

8 page 116, 118, 7.14.1 / 7.14.3 Initiator identification  
 In both of these sections there are clauses implying that an initiator is identified by its reservation key (paragraph above table 80, second paragraph below table 82). I believe this is confusing. If the initiator is identified by the reservation key, then does the reservation apply to all initiators registered with the same key, or just the initiator who sent the reservation?

Please reword to clarify.

9 page 117, Table 81 Add 'Generation Number Incremented' column to table  
 I believe it would be useful if table 81 had a column indicating whether or not the service action incremented the generation number.

10 page 144, 7.23.2 Sense data Information field and Beyond 2 Tbytes  
 How does a LU with LBA addresses larger than 4 bytes fill in the Information field for case a) (middle of page 144)?

11 page 175, Table 128 Should specify SES pages  
 Table 128 indicates that pages 01h - 3fh apply to all device types. This table should split out pages 01h - 0fh as SES pages and reference that standard.

Suggestion: Replace row 01h - 3Fh Pages that apply to all device types  
 with: 01h - 0Fh Pages defined by SES (see xyz)  
 10h - 3Fh Pages that apply to all device types

12 page 215, 216, 8.4.4 Incorrect table references  
 The first paragraph of 8.4.4 incorrectly references table 108 instead of table 177.

The paragraph under Table 178 incorrectly references table 111 instead of table 178.

13 page 206, 8.3 7 First Burst Size definition  
 FCP-2 has a slightly different definition of First Burst Size. This definition in SPC-2 needs to either be expanded or defer to the appropriate protocol document as to what "first burst" means. (In FCP, first burst refers to data sent to the target before the XFER\_RDY.)

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Comments attached to YesC ballot from Mark S. Evans of  
 Quantum Corp.:

Quantum's comments for the letter ballot of SPC-2, rev 18

Quantum # 1. Global

The word "indicate" (and several of its forms) is used in many places throughout the document. My American Heritage Dictionary gives four definitions for "indicate": 1) To show the way to or the direction of; point out; 2) To serve as a sign, symptom, or token of; signify; 3) To suggest or demonstrate the necessity, expedience, or advisability of; 4) To state or express briefly. The entry continues, "The central meaning [of indicate] is 'to give grounds for supposing or inferring the existence or presence of something'..." Words like "point out", "suggest", and "infer" seem to me to be too weak for many of the places where "indicate" is used in a standard. Because of this, I think that, in many cases (though not all) where "indicate" is used in the document, a form of the word "specify", or the word "contain", or words something like "specified by the value in" are better choices. Yes, "specify" is given as a synonym for "indicate", but it's pretty far down the list. As an example, one sentence in the document reads, "The maximum number of target descriptors permitted within a parameter list is indicated by the MAXIMUM TARGET COUNT field in the copy manager's operating parameters..." Well, yes, the "...maximum number of target descriptors permitted..." is

"...pointed out..." by "...the MAXIMUM TARGET COUNT field...", but I think it would be much more precise to have this sentence to read, "The maximum number of target descriptors permitted within a parameter list is specified by the value in the MAXIMUM TARGET COUNT field in the copy manager's operating parameters..." Another precise way to state this is, "The MAXIMUM TARGET COUNT field in the copy manager's operating parameters contains the maximum number of the target descriptors permitted within a parameter list." However, I do understand that it would be a huge task to find and replace each occurrence of "indicate" where I think it should be "specify" in this draft. In future, I would suggest that all editors try to be more precise in their use of "indicate".

Quantum # 2. beginning on page 5 (PDF page 33), 3.1 Definitions

With ten exceptions the first sentence of each of the definitions is not a complete sentence. I know it would be a lot of work to change the other 51, but I think it would help with clarity as those definitions that do begin with complete sentences read much better to me. As a fall-back, the following ten definitions could be changed to start with incomplete sentences: 3.1.5 asynchronous event reporting, 3.1.8 blocked task, 3.1.23 enabled task state, 3.1.35 medium, 3.1.37 medium changer, 3.1.39 page, 3.1.40 protocol-specific, 3.1.46 SCSI domain, 3.1.53 system, and 3.1.58 third-party.

Quantum # 3. page xiv (PDF page 26):

This page is blank. I think that, if this is intentional, it should be marked as such

Quantum # 4. beginning on page 5 (PDF page 33), 3.1.5 asynchronous event reporting:

I think that, where common acronyms are used for a defined phrase (in this case "AER"), the acronym should immediately follow the title phrase in parentheses. In this case, "3.1.5 asynchronous event reporting (AER):" From that point forward in the document only the acronym need be used, except where the whole phrase might be used for clarity. In this particular definition the last sentence references AER with the assumption that the reader knows what this is. This recommended format should also be used in 3.1.6 auto contingent allegiance (ACA), 3.1.11 command descriptor block (CDB), 3.1.13 contingent allegiance (CA), 3.1.34 logical unit number (LUN), and 3.1.36 medium auxiliary memory (MAM).

Quantum # 5. page 5 (PDF page 33), 3.1.8 blocked task:

I recommend that the comma in the first sentence (before the phrase, "as defined in SAM-2") be deleted.

Quantum # 6. page 5 (PDF page 33), 3.1.7 autosense data:

Every other instance of this phrase that I found in the document had the first letters of each word capitalized ("Autosense Data"). I think that, one way or the other, the document should be consistent, the words should always be capitalized or always not. The same is true for page 5 (PDF page 33), 3.1.15 data-in buffer, and page 6 (PDF page 34), 3.1.16 data-out buffer.

Quantum # 7. page 6 (PDF page 34), 3.1.17 data packet:

I think that the phrase in the first sentence, "... , or during the Data-Out Buffer..." is supposed to be, "... , or in the Data-Out Buffer..."

Quantum # 8. page 6 (PDF page 34), 3.1.27 idle condition:

I think that the second sentence should be changed to read, "However, a logical unit in the Idle condition may take longer to complete the execution of a command than when in the active condition because it may have to activate some circuitry."

Quantum # 9. page 6 (PDF page 34), 3.1.27 idle condition:

The word "Idle" is capitalized in the definition. Searching the document I have found that the words, "active", "idle", and "standby" are not capitalized consistently when referring to a power condition. I think that, one way or the other, the document should be consistent, the words should always be capitalized or always not.

Quantum # 10. page 6 (PDF page 34), 3.1.30 linked command:

The word "which" is used in this definition for the first time in the normative part of the document. I thought that "which" was not to be used in ANSI standards, and that, in most cases, the word "that" was to be used instead. If my assumption is true, there are many "whichs" that have to be sought out in the document and replaced.

Quantum # 11. page 9 (PDF page 37), 3.3.5 may:

This may be one of the appropriate places to use a form of "indicate", but it should be in the present tense. See also 3.3.6 may not.

Quantum # 12. page 10 (PDF page 38), 3.4 Conventions:

I think that the second sentence in the first paragraph should be changed to read something like, "These words and terms are defined either in clause 3 or in the text where they first appear."

Quantum # 13. page 12 (PDF page 40), the two paragraphs following Table 2 - Typical CDB for 10-byte commands:

I think that this text should be moved to after Table 4 - Typical CDB for 16-byte commands. In addition, I would recommend that the first sentence of the first paragraph of this text should be its own clause: 4.3.2 Field descriptions. I would then recommend that there be two new subclauses, 4.3.2.1 OPERATION CODE field, and 4.3.2.2 CONTROL field, and the subclauses that are now 4.3.2 through 4.3.6 be renumbered 4.3.2.3 through 4.3.2.7.

Quantum # 14. page 12 (PDF page 40), the second paragraph currently following Table 2 - Typical CDB for 10-byte commands:

I think the second sentence in this paragraph should be changed to, "The fields shown in tables 1, 2, 3, and 4 are used consistently by most commands."

Quantum # 15. page 14 (PDF page 42), 4.3.4 Transfer length, second paragraph:

I recommend that the last sentence be changed to, "A value of zero specifies that 256 blocks shall be transferred."

Quantum # 16. page 14 (PDF page 42), 4.3.4 Allocation length, first paragraph:

I recommend that the fourth sentence be changed to, "The device server shall terminate transfers to the Data-In Buffer when the number of allocation length bytes have been transferred or when all available data have been transferred, whichever is less."

Quantum # 17. page 16 (PDF page 44), before 5.2 Commands to be implemented by all SCSI device servers:

There appears to be an extra carriage return above this clause heading in the PDF version that should be deleted.

Quantum # 18. page 28 (PDF page 56), 5.5.3.5 Creating a persistent reservation when there is no persistent reservation, fifth paragraph:

So that the verb matches the nouns I recommend that the sentence read, "If the device server receives a PERSISTENT RESERVE OUT command with a service action of RESERVE where the TYPE and SCOPE are the same as the existing TYPE and SCOPE from the initiator that created the persistent reservation, it shall not make any change to the existing reservation and shall return a GOOD status."

Quantum # 19. page 29 (PDF page 57), 5.5.3.6.1 Overview of removing registrations and persistent reservations, last paragraph:

In the second sentence I think that "aptpl" should be capitalized.

Quantum # 20. page 30 (PDF page 58), 5.5.3.6.2 Releasing a persistent reservation, bulleted list:

I think that in item (d), "...an unit attention..." should be, "...a unit attention..." See also the fourth paragraph on page 203 (PDF page 231). I searched the entire document, and these were the only instances of this that I found.

Quantum # 21. page 32 (PDF page 60), 5.5.3.6.3.3 Preempting reservations, first bulleted list:

An article is missing in the second sentence of item (c). I think it should read, "The scope and type of the persistent reservation created by the



preempting initiator may be different than the persistent reservation being preempted."

Quantum # 22. page 32 (PDF page 60), 5.5.3.6.3.3 Preempting reservations, next-to-last paragraph:

The formatting of this paragraph seems awkward to me, I would recommend that it be replaced with something like the following:

The following shall be subject in a vendor specific manner either to the restrictions established by the persistent reservation being preempted or to the restrictions established by the preempting initiator:

- a) A task received after the arrival, but before the completion of the PERSISTENT RESERVE OUT command with the PREEMPT service action; or
- b) A task in the dormant, blocked, or enable state at the time the PERSISTENT RESERVE OUT command with the PREEMPT service action is received

Completion status shall be returned for each task.

Quantum # 23. page 32 (PDF page 60), 5.5.3.6.3.3 Preempting reservations, last paragraph:

I think that the first sentence should read, "A PERSISTENT RESERVE OUT specifying a PREEMPT service action with the value in the SERVICE ACTION RESERVATION KEY field equal to the reservation key is not an error."

Quantum # 24. page 34 (PDF page 62), 5.6 Multiple port and multiple initiator behavior, first bulleted list:

This confuses me. Item (a) reads, "If one port on a target is being used...", item (b) reads, "If the device has sufficient resources...", and the first sentence in the preceding paragraph reads, "If a device has more than one service delivery port..." Is this correct and I'm just missing something?

Quantum # 25. page 35 (PDF page 63), 5.7 Removable medium devices with an attached medium changer, first paragraph:

In the first sentence I would replace the word "effected" with the word "affected". Though the two words are almost interchangeable, "affect" is the first choice as a transitive verb, and "effect" is the first choice as a noun.

Quantum # 26. page 39 (PDF page 67), 7.2 COMPARE command, first paragraph:

I recommend that the first sentence reads, "The COMPARE command (see table 11) provides the means to compare data from one logical unit with data from another or the same logical unit in a manner similar to the COPY command."

Quantum # 27. page 40 (PDF page 68), 7.3 COPY command, fourth paragraph after Table 12:

The last sentence reads, "A device server need not support all function codes for its device type." I don't think "...need..." is the right word here as it is not defined as a keyword (and I have a little trouble with device servers having "needs"). I would recommend that it be changed to "...may..."

Quantum # 28. page 48 (PDF page 76), 7.4 COPY AND VERIFY command, first paragraph:

The second sentence reads, "The parameter list transferred to the device server is the same as for the COPY command." I think what is meant here is something like, "The definition for the parameter list transferred to the device server for the COPY AND VERIFY command has the same definition as the parameter list transferred for the COPY command." I recommend that this be changed accordingly.

Quantum # 29. page 51 (PDF page 79), 7.5 EXTENDED COPY command, second paragraph on this page:

In the second sentence the term "read-ahead" is used without any definition as to what this is. A good description may be found on page 62 (PDF page 90) in the second sentence of the third paragraph below Table 31 - Device type specific target descriptor parameters for block device types. I recommend that some words like this be used after the first occurrence of the term on page 51, as well.

Quantum # 30. page 51 (PDF page 79), 7.5 EXTENDED COPY command, fourth paragraph on this page:

In the fourth sentence there is another "...need..." that I would recommend be changed to "...may..."

Quantum # 31. page 52 (PDF page 80), 7.5.3 Errors detected during processing of segment descriptors, note 8:

In the last sentence I would recommend that the words "...need to..." be deleted.

Quantum # 32. page 53 (PDF page 81), 7.5.3 Errors detected during processing of segment descriptors, list item (h):

Because an article ("the") is missing near the end of the first sentence ("...THE byte in error..."), there is an opportunity to improve an occurrence of "indicate". I recommend that this sentence be change to. "If, during the processing of a segment descriptor, the copy manager detects an error in the segment descriptor, then the SENSE-KEY SPECIFIC field shall be set as described in 7.23.3, with the content of the FIELD POINTER field specifying the byte in error." I think that, in the other occurrences of "indicate" in this list item, the way the word is used are correct.

Quantum # 33. page 63 (PDF page 91), 7.5.6.8 Device type specific target descriptor parameters for stream device types, Table 33 - Stream device transfer lengths:

The second sentence in the first Description (FIXED bit = 0, STREAM BLOCK LENGTH field = 0) is missing a preposition and should be, "The number of bytes for each read or write is specified by the STREAM DEVICE TRANSFER LENGTH field in the segment descriptor."

Quantum # 34. page 67 (PDF page 95), 7.5.7.1 Segment descriptors overview, paragraph below Table 36 - Descriptor Type Code Dependent Copy Manager Processing (part 2 of 2):

Since the third sentence has a couple of issues, I recommend that it be changed to, "If so, the residue shall be handled as specified by the value in the CAT bit in the segment descriptor and the PAD bit in the source and destination target descriptors, as defined in table 37."

Quantum # 35. page 67 (PDF page 95), 7.5.7.1 Segment descriptors overview, paragraph below Table 37 - PAD and CAT bit definitions (part 2 of 2):

The last sentence is missing a preposition and should be changed to, "For segment descriptor types 06h and 0Fh (stream(r)discard and stream(r)discard+application client, see 7.5.7.8), handling shall be as if the PAD were equal to zero for the destination target descriptor."

Quantum # 36. page 74 (PDF page 102), paragraph immediately before 7.5.7.6 Inline data to stream device operation:

The second sentence seems cumbersome to me. I would recommend changing it to something like, "A value of zero shall not be considered as an error. A value of zero shall indicate that no source blocks shall be read and no source data shall be processed. However, any residual destination data from a previous segment shall be written if possible to the destination in whole-block transfers, and any residual data shall be handled as described in 7.5.7.1."

Quantum # 37. page 75 (PDF page 103), 7.5.7.6 Inline data to stream device operation, the fifth paragraph on this page:

I think what the first sentence of this paragraph is trying to say is something like, "The value in the INLINE DATA OFFSET field is added to the byte number of the location of the first byte of inline data in the EXTENDED COPY parameter list (see table 22). The result is the byte number of the first byte of inline data in the EXTENDED COPY parameter list to be written to the stream device."

Quantum # 38. page 85 (PDF page 113), 7.5.7.16 Tape device image copy operation, the last paragraph on this page:

Since I think the first article in the first sentence of this paragraph is incorrect, I recommend that the sentence be changed to, "A COUNT field containing a value of zero specifies that the EXTENDED COPY command shall not

terminate due to any number of consecutive filemarks or setmarks."

Reviewer's note: Boy am I glad to be through the COPY clauses!

Quantum # 39. page 88 (PDF page 116), 7.6.1 INQUIRY command overview, paragraph above Note 15:

The first sentence of this paragraph reads, "If the standard INQUIRY data changes for any reason, the device server shall generate a unit attention condition for all initiators (see SAM-2)." I thought it should read something like, "...report CHECK CONDITION status with the sense key set to UNIT ATTENTION...", but then I thought, "No. This has to all be described in detail in SAM-2." WRONG. The clause in SAM-2 on unit attention (5.6.5 in rev 13) goes into great detail about Unit Attention condition, but I could not find anyplace where it describes that this condition occurs when a device server, "...reports a CHECK CONDITION status with the sense key set to UNIT ATTENTION." If SPC-2 is going to point to SAM-2 for the definition of this condition, then I think that this condition should be defined completely in SAM-2. I would even recommend that something like, "A unit attention condition occurs when a device server reports a CHECK CONDITION status with the sense key set to UNIT ATTENTION." be added to the definition of unit attention condition in clause 3. It is interesting to note that the phrase "unit attention condition" occurs several times in the document before INQUIRY. I knew what it meant, so assumed that the documentation was complete, as well. It's interesting what you notice first thing in the morning after two cups of coffee. I wonder what else I missed during late-in-the-day, blurry-eyed review? I'm not going back now!

Quantum # 40. page 92 (PDF page 120), 7.6.2 Standard INQUIRY data, eighth paragraph on the page:

The first sentence of this paragraph reads, "A Multi Port (MULTIP) bit of one shall indicate that this is a multi-port (2 or more ports) device and conforms to the SCSI multi-port device requirements found in the applicable standards."

The phrase "...applicable standards..." seem vague to me. I would recommend that an "...(e.g., ...)" be included with at least one applicable standard listed.

Quantum # 41. page 92 (PDF page 120), 7.6.2 Standard INQUIRY data, last paragraph on the page:

The first sentence of this paragraph begins, "ASCII data..." I think that this paragraph should be moved to be after Table 57 since that table is referenced in the previous paragraph. I would also add an introductory sentence that reads something like, "Several of the following fields contain ASCII data."

Quantum # 42. page 93 (PDF page 121), 7.6.2 Standard INQUIRY data, third paragraph after Note 16:

The first sentence of this paragraph begins, "The VERSION DESCRIPTOR fields provide for identifying up to..." In my PDF version a space should be inserted between "up" and "to".

Quantum # 43. page 98 (PDF page 126), 7.6.3 SCSI Parallel Interface specific INQUIRY data, first paragraph after Table 61 - CLOCKING field:

The first sentence of this paragraph reads, "A quick arbitrate supported (QAS) bit of one indicates that the device server supports the quick arbitrate feature." To be consistent with SPI-3 this should be changed to, "A quick arbitrate supported (QAS) bit of one indicates that the device server supports the Quick Arbitration and Selection feature (see SPI-3 or later)." See also Note 17.

Quantum # 44. page 99 (PDF page 127), 7.6.3 Command support data, second paragraph:

I don't see anyplace where the number of bytes to be transferred when the SUPPORT field contains 001b is specified. This paragraph only indicates [correct use] that the device shall return byte 0 and byte 1. Does this mean that the device server can send as many bytes as it wants with the bytes after byte 1 being undefined (see also Table 63 - SUPPORT values and meanings)? Or should the second sentence of this paragraph read something like, "If the device server does not implement the requested SCSI operation code it shall

only return the peripheral qualifier and type byte and byte 1 with 001b in the SUPPORT field."

Quantum # 45. page 100 (PDF page 128), 7.6.3 Command support data, Note 21:  
I recommend that the word "primarily" be deleted from this note.

Quantum # 46. page 105 (PDF page 133), 7.9 MODE SELECT(6) command, first paragraph:

The first sentence reads, "The MODE SELECT(6) command (see table 67) provides a means for the application client to specify medium, logical unit, or peripheral device parameters to the target." Yet the first sentence in the first paragraph of 7.10 MODE SELECT(10) command reads, "The MODE SELECT(10) command (see table 68) provides a means for the application client to specify medium, logical unit, or peripheral device parameters to the device server." I think that "target" in the sentence in MODE SELECT(6) should be changed to "device server".

Quantum # 47. page 105 (PDF page 133), 7.9 MODE SELECT(6) command, first paragraph:

The second sentence reads, "Device servers that implement the MODE SELECT command shall also implement the MODE SENSE command." This should be changed to, "Device servers that implement the MODE SELECT(6) command shall also implement the MODE SENSE(6) command." The corresponding sentence is correct in the description of the MODE SELECT(10) command.

Quantum # 48. page 105 (PDF page 133), 7.9 MODE SELECT(6) command, first paragraph:

The third sentence reads, "Application clients should issue MODE SENSE prior to each MODE SELECT to determine supported pages, page lengths, and other parameters." This should either be changed to, "Application clients should issue MODE SENSE(6) prior to each MODE SELECT(6) to determine supported pages, page lengths, and other parameters." or, "Application clients should issue a MODE SENSE(6) or MODE SENSE(10) command prior to each MODE SELECT(6) or MODE SELECT(10) command to determine supported pages, page lengths, and other parameters." A corresponding change needs to be made in the first paragraph of 7.10 MODE SELECT(10) command, page 106 (PDF page 134).

Quantum # 49. Global:

I now see several instances in the document where COMMAND NAME is used to refer to all lengths of a particular command type. Therefore, I think a sentence something like the following should be added to 3.4 Conventions, "If there is more than one length for a particular command type (e.g., MODE SENSE(6) and MODE SENSE(10)), and the name of the command type is used in a sentence without any length descriptor (e.g., MODE SENSE), then the condition specified in the sentence applies to all commands of that type." Something like this would make the previous two comments (and many more that could follow) unnecessary.

Quantum # 50. page 107 (PDF page 135), 7.9 MODE SENSE(6) command, first paragraph:

The following sentence should be added to this paragraph, "Device servers that implement the MODE SENSE(6) command shall also implement the MODE SELECT(6) command." The corresponding sentence is correct in the description of the MODE SENSE(10) command.

Quantum # 51. page 111 (PDF page 139), after Table 73 - PERSISTENT RESERVE IN command:

I would recommend removing the word "actual" from the first sentence (unless there is a "pretend" length that's available somewhere else).

Quantum # 52. page 112 (PDF page 140), second paragraph after Table 75 - PERSISTENT RESERVE IN parameter data for READ KEYS:

There is an article missing in the second sentence. It should read, "If the allocation length specified by the PERSISTENT RESERVE IN command is not sufficient to contain the entire parameter list, then only the first portion of the list (byte 0 to the allocation length) shall be sent to the application client." See also the same sentence in the second paragraph after Table 76 - PERSISTENT RESERVE IN parameter data for READ RESERVATION

Quantum # 53. page 115 (PDF page 143), Table 79 - Persistent Reservation Type Codes:

In six places the phrase, "...shall result in a reservation conflict." Though this may be true, I think it would be better to replace that phrase with something like, "...shall be rejected with RESERVATION CONFLICT status..." or, "...shall be terminated with RESERVATION CONFLICT status..." as this is what shall result from a reservation conflict in these cases.

Quantum # 54. page 118 (PDF page 146), 7.14.3 PERSISTENT RESERVE OUT parameter list, first paragraph:

I believe that the subject of the first sentence is "list". Therefore, to have the verb match the subject the sentence should read, "The parameter list required to perform the PERSISTENT RESERVE OUT command is defined in table 82."

Quantum # 55. page 118 (PDF page 146), 7.14.3 PERSISTENT RESERVE OUT parameter list, second paragraph after Table 82 - PERSISTENT RESERVE OUT parameter list:

I think that the second sentence should read, "The device server shall verify that the content of the RESERVATION KEY field in a PERSISTENT RESERVE OUT command matches the registered reservation key for the initiator from which the task was received, except for:"

Quantum # 56. page 118 (PDF page 146), 7.14.3 PERSISTENT RESERVE OUT parameter list, paragraph after the first list after Table 82 - PERSISTENT RESERVE OUT parameter list:

I think that the first sentence should read, "Except as noted above, when a PERSISTENT RESERVE OUT command specifies a value in the RESERVATION KEY field other than the reservation key registered for the initiator the device server shall return a RESERVATION CONFLICT status."

Quantum # 57. page 127 (PDF page 155), 7.17.2 COPY STATUS service action, Table 95 - COPY STATUS STATUS values:

[Oh, no! More COPY stuff!] In the first entry in the Meaning column I think that "Operating in progress" should be changed to "Operation in progress".

Quantum # 58. page 128 (PDF page 156), 7.17.2 COPY STATUS service action, Table 96 - COPY STATUS TRANSFER COUNT UNITS values:

None of the words in the Meaning column should be hyphenated. They should be "Kilobytes", "Megabytes", "Gigabytes", "Terabytes", and "Petabytes", respectively.

Quantum # 59. page 129 (PDF page 157), 7.17.3 RECEIVE DATA service action, first paragraph:

I think the first phrase should be changed to, "If the copy manager supports those segment descriptors that require read data to be held for transfer to the application client,..." as the segment descriptors don't hold the data.

Quantum # 60. page 130 (PDF page 158), 7.17.4 OPERATING PARAMETERS service action, first paragraph below Table 98 - Parameter data for the OPERATING PARAMETERS service action:

I think the sentence should be changed to something like, "The AVAILABLE DATA field shall contain the number of bytes that is the total length of the parameter data minus 4."

Quantum # 61. page 131 (PDF page 159), 7.17.4 OPERATING PARAMETERS service action, fifth paragraph on the page:

I think there is an article missing in the first sentence (i.e., "...the largest amount of inline data that THE copy manager supports...").

Quantum # 62. page 133 (PDF page 161), 7.17.5 FAILED SEGMENT DETAILS service action, Note 33:

I think there is something wrong with the end of the second sentence (i.e., "...and indeterminate transfer operations to source and destination copy targets device."). I think that maybe this is supposed to be, "...and indeterminate transfer operations to source and destination copy devices."

Quantum # 63. page 138 (PDF page 166), 7.21 REPORT DEVICE IDENTIFIER command,

first paragraph:

I think there is something wrong with the last sentence (i.e., "Only the REPORT DEVICE IDENTIFIER operation code and service action concerns all SCSI devices.") I think, at the very least, "concerns" should be "concern".

Quantum # 64. page 143 (PDF page 171), 7.23.2 Sense data format, second paragraph below Table 109 - Response codes 70h and 71h sense data format: I think that "values" should be singular (i.e., "value").

Quantum # 65. page 144 (PDF page 172), 7.23.2 Sense data format, second paragraph on the page:

The sentence reads, "An incorrect length indicator (ILI) bit of one usually indicates that the requested logical block length did not match the logical block length of the data on the medium." Does an ILI bit of one "unusually" indicate anything? Does an ILI bit of one EVER indicate anything else? If this is the only meaning for an ILI bit of one, the word "usually" should be deleted. If there are other meanings, I would recommend that at least an "e.g." with one example should be included here.

Quantum # 66. page 145 (PDF page 173), 7.23.3 Sense-key specific, first paragraph:

I think there is at least a verb missing in the first sentence. I think that it should be changed to read, "When the value of the sense-key specific valid (SKSV) bit is one the content of the SENSE-KEY SPECIFIC field is as defined by this standard."

Quantum # 67. page 145 (PDF page 173), 7.23.3 Sense-key specific, second paragraph:

I think there is one too many prepositional phrases in the first sentence. I think that it should be changed to read, "If the sense key is ILLEGAL REQUEST and the SKSV bit is set to one, then the SENSE-KEY SPECIFIC field shall be as defined in table 110."

Quantum # 68. page 145 (PDF page 173), 7.23.3 Sense-key specific, second paragraph:

Unless it is possible to have illegal parameters in the CDB that AREN'T in error, I would recommend that the word "illegal" be deleted.

Quantum # 69. page 147 (PDF page 175), 7.23.5 Deferred errors, fourth paragraph:

I'm not sure what the first sentence is trying to say. One possibility is the following, "If the current task terminates with CHECK CONDITION status for a previous task and the subsequent sense data returns deferred error information for the previous task, the current task shall not have been executed." Another possibility is, "If a previous task terminates with CHECK CONDITION status and the subsequent sense data returns deferred error information for that previous task, the current task shall not have been executed." Another possibility is, "If the current task terminates with CHECK CONDITION status and the subsequent sense data returns deferred error information for that previous task, the previous task shall not have been executed." One way or another, the sentence should be made clearer.

Quantum # 70. page 147 (PDF page 175), 7.23.5 Deferred errors, list item (a): In the first sentence, I don't think the phrase "external system intervention" conveys the exact meaning desired here. I would recommend that this sentence be changed to something like, "If a device server can recover from a deferred error condition without requiring external intervention, a deferred error indication shall not be posted unless required by the error handling parameters of a MODE SELECT command."

Quantum # 71. page 147 (PDF page 175), 7.23.5 Deferred errors, list items (b) and (c):

The phrases "a causing initiator" and "the causing initiator" are used in several places in these items. I don't think the gerund adds anything to the phrase. I would recommend that "a causing initiator" should be replaced by "an initiator", and that "the causing initiator" should be replaced by something like, "...the initiator associated with the error..."

Quantum # 72. page 148 (PDF page 176), 7.23.5 Deferred errors, list item (c):  
The last sentence should be changed to read something like, "If multiple deferred errors have accumulated for any particular initiator, only the last error for that initiator shall be returned;"

Quantum # 73. page 148 (PDF page 176), 7.23.5 Deferred errors, Note 43:  
I think that the first sentence should be changed to read something like, "A deferred error may indicate that an operation was unsuccessful long after GOOD status was returned for the initiating command."

Quantum # 74. page 148 (PDF page 176), 7.23.5 Deferred errors, Note 43:  
I think that the second sentence should be changed to read something like, "If a deferred error occurs while data is being written using buffered write operations and the application client is unable to replicate or recover the data from other sources, synchronization commands should be executed before data is lost."

[No wonder everyone hates deferred errors.]

Quantum # 75. page 167 (PDF page 195), 7.26 SEND DIAGNOSTICS, first paragraph on the page:

I think the description of the PF bit is incomplete. I recommend that this paragraph be made into two paragraphs something like,

A page format (PF) bit of one specifies that the SEND DIAGNOSTIC parameters and any parameters returned by a following RECEIVE DIAGNOSTIC RESULTS command shall conform to the page structure as specified in this standard. See 8.1 for the definition of diagnostic pages.

A PF bit of zero indicates that all SEND DIAGNOSTIC parameters are vendor-specific. If the content of the PARAMETER LIST LENGTH field is zero and the SEND DIAGNOSTIC command will not be followed by a corresponding RECEIVE DIAGNOSTIC RESULTS command then the PF bit shall be zero. The implementation of the PF bit is optional.

Quantum # 76. page 167 (PDF page 195), 7.27 SET DEVICE IDENTIFIER command, first paragraph:

I don't think that the last sentence is clear, "Only the SET DEVICE IDENTIFIER operation code and service action concerns all SCSI devices." Does this mean, "Only the SET DEVICE IDENTIFIER operation code and service action shall be supported by all SCSI devices." Or what? This needs to be clarified.

Quantum # 77. page 171 (PDF page 199), 7.29.1 WRITE BUFFER command overview, Notes after Table 126 - WRITE BUFFER MODE field:

I think that these notes are supposed to be included in the table.

Quantum # 78. page 178 (PDF page 206), 8.2.1 Log page structure and page codes for all device types, paragraph immediately below Note 50:

The second sentence of the paragraph reads, "The device server shall ignore the value of any DU bits in a LOG SELECT command." Since there is only one bit, and it isn't defined for this command, I would recommend that the sentence be changed to something like, "The device server shall ignore bit 7, byte 2 in any log parameter data received for a LOG SELECT command (this is the DU bit in log parameter data sent during a LOG SENSE command)."

Quantum # 79. page 179 (PDF page 207), 8.2.1 Log page structure and page codes for all device types, second paragraph below Table 132 - Threshold met criteria:

The word "bit" is missing in the first sentence. It should read, "The LBIN bit is only valid if the LP bit is set to one."

Quantum # 80. page 182 (PDF page 210), 8.2.2 Application client page, first paragraph:

Though this may be the typical use, I think that there should be no restriction on the type of information stored by the application client in this page. Therefore, I recommend that the first sentence be change to, "The application client page (see table 134) provides a place for application clients to store system or other information."

Quantum # 81. page 184 (PDF page 212), 8.2.3 Buffer over-run/under-run page, Table 138 - Count basis definition, Note 52:  
I think that this note should be included in the table.

Quantum # 82. page 185 (PDF page 213), 8.2.5 Last n deferred errors or asynchronous events page, first paragraph:  
The first sentence begins, "Log page (0Bh)a" To be consistent, I think that this should read, "The last n deferred errors or asynchronous events page (page code 0Bh)a" See also 8.2.6 Last n error events page.

Quantum # 83. page 186 (PDF page 214), 8.2.7 Non-medium error page, first paragraph:  
The first sentence begins, "This page (page code 06h)a" To be consistent, I think that this should read, "The non-medium error page (page code 06h)a"

Quantum # 84. page 190 (PDF page 218), 8.2.9 Start-stop cycle counter page, first paragraph below Table 146 - Start-stop cycle counter page (part 2 of 2):  
I think that the second sentence is unclear and should read. "The date of manufacture shall not be modified by the device when an application client issues a LOG SELECT command."

Quantum # 85. page 190 (PDF page 218), 8.2.9 Start-stop cycle counter page, first paragraph below Table 147 - Parameter control bits for date of manufacture parameter (0001h):  
I think that this sentence is unclear and should read, "The accounting date specified by parameter code 0002h is the date when the device was placed in service. This parameter may be saved by the device when an application client issues a LOG SELECT command."

Quantum # 86. page 191 (PDF page 219), 8.2.9 Start-stop cycle counter page, first paragraph above Table 149 - Parameter control bits for start-stop cycle counter parameters (0003h and 0004h):  
I think that the second sentence should be changed to, "The specified cycle count over device lifetime parameter shall not be modified by the device when an application client issues a LOG SELECT command."

Quantum # 87. page 191 (PDF page 219), 8.2.9 Start-stop cycle counter page, first paragraph below Table 149 - Parameter control bits for start-stop cycle counter parameters (0003h and 0004h):  
I think that the second sentence should be changed to, "The accumulated start-stop cycles parameter shall not be modified by the device when an application client issues a LOG SELECT command."

Quantum # 88. page 193 (PDF page 221), 8.2.11 Temperature page, paragraph below Table 152 - Parameter control bits for temperature parameters (0000h and 0001h):  
This sentence is cumbersome. I recommend that it be changed to, "The one byte binary value should reflect the maximum reported sensor temperature in degrees Celsius specified by the manufacturer of the device at which the device is capable of operating continuously without degradation to the device's operation or reliability."

Quantum # 89. page 195 (PDF page 223), 8.3.3 Mode parameter header formats, paragraph below Table 155 - Mode parameter header(10):  
The second sentence reads, "The mode data length does not include itself." I think this sentence should be deleted or modified to read something like, "The mode data length does not include the number of bytes in the MODE DATA LENGTH field."

Quantum # 90. page 200 (PDF page 228), 8.3.5 Mode page format and page codes, paragraph above Table 160 - Mode page codes:  
I recommend that the word "include" be changed to "implement" such that the sentence reads, "Table 160 defines the mode pages that are applicable to all device types that implement the MODE SELECT and MODE SENSE commands."

Quantum # 91. page 212 (PDF page 230), 8.3.6 Control mode page, first paragraph below Table 163 - Queue algorithm modifier:



I recommend that the word "actual" be deleted from the first sentence (unless, of course, there are some virtual "aexecution sequence[s] of tasks having the SIMPLE task attributea"). [See also the first sentence in the second paragraph below the table.]

Quantum # 92. page 215 (PDF page 233), 8.3.7 Disconnect-reconnect page, the three paragraphs below Note 50:

I don't see where the definitions for BUS INACTIVITY LIMIT, DISCONNECT TIME LIMIT, or CONNECT TIME fields specify the units of time. Have I missed something, or do these need to be specified?

Quantum # 93. page 217 (PDF page 235), 8.3.8 Informational exceptions control page, the fourth paragraph on the page:

"A enable warninga" should be changed to "An enable warninga", and "A EWASC bita" should be changed to "An EWASC bit..."

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Comments attached to No ballot from Gene Milligan of Seagate Technology:

These comments will probably be truncated and will be sent as a file to the Chair.

Comments accompanying the negative GEM ballot. Page numbers are pdf page numbers.

Annotations from spc2r18.pdf

1. Page 2

Annotation 1; Label: Gene E Milligan; Date: 6/11/2000 10:36:23 AM  
update the secretariats address to ncits@itic.org

2. Page 27

Annotation 1; Label: Gene E Milligan; Date: 6/13/2000 12:21:39 AM  
Several places it is stated that <<Some target SCSI devices may require a host implementation of the processor device model to support the Asynchronous Event Reporting capability defined in the SCSI-3 Architecture Model.>> This is confusing as to whom the implementer is. I suspect the intent is "Some target SCSI devices may implement an initiator subset of the processor device model to support the Asynchronous Event Reporting capability defined in the SCSI-3 Architecture Model."

3. Annotation 2; Label: Gene E Milligan; Date: 6/13/2000 12:23:51 AM

<<Thus, the SCSI processor device commands are defined in this standard.>>

There is nothing magical or biblical about the preceding statements. This sentence should be deleted as the only factual statement is redundant to the first sentence of the paragraph.

4. Page 29

Annotation 1; Label: Gene E Milligan; Date: 6/13/2000 12:32:52 AM  
<<in the SCSI family standards >>

Unless birth control has slipped in, add an "of".

5. Annotation 2; Label: Gene E Milligan; Date: 6/13/2000 12:40:12 AM

<<The roadmap in figure 1 is intended to show the general applicability of the documents to one another. The figure is not intended to imply a relationship such as a hierarchy, protocol stack, or system architecture. It indicates the applicability of a standard to the implementation of a given transport.>>

This may have been true before the figure was appropriately generalized. I suggest

changing the statement to "Figure 1 is intended to show the general relationship of the documents to one another. The figure is not intended to imply a relationship such as a hierarchy, protocol stack, or system architecture."

6. Page 30

Annotation 1; Label: Gene E Milligan; Date: 6/13/2000 12:56:25 AM  
Fibre Channel Arbitrated Loop FC-AL [ISO/IEC 14165-121] was never completed by T11 and is now FC-AL-2.

I am not sure that an amendment is an example of a standard. Fiber Channel Physical Amendment 1 [ANSI X3.230/AM1:1996]

SCSI Primary Commands - 2 SPC-2 [ISO/IEC 14776-312] Because of T10 giving up on SPC due to the confusion from the lost Brazil vote, this will probably end up being 14776-311.

7. Page 31

Annotation 1; Label: Gene E Milligan; Date: 6/13/2000 1:04:19 AM  
<<SCSI Reduced Block Commands RBC [ANSI NCITS.330:200x]>> is also ISO/IEC 14776-326.

<<SCSI-3 Enclosure Services Commands SES [ANSI NCITS.305:1998]>> is also ISO/IEC 14776-371 assuming it's editor wakes up.

<<SCSI Common Access Method CAM [ISO/IEC 9316-421]>> published as ISO/IEC 9316-2.

8. Page 32

Annotation 1; Label: Gene E Milligan; Date: 6/20/2000 6:35:45 AM  
Why are FC-PH, AM 1, and FC-PH-3, FC-FS normatively referenced rather than FCP?

9. Page 33

Annotation 1; Label: Gene E Milligan; Date: 6/20/2000 6:40:43 AM  
<<shortest possible time.>>

Delete "possible".

10. Annotation 2; Label: Gene E Milligan; Date: 6/20/2000 6:48:42 AM  
Change <<The mechanism by which asynchronous event reporting works is protocol-specific.>> to "The mechanism for asynchronous event reporting is transport protocol specific." The latter portion being global.

11. Annotation 3; Label: Gene E Milligan; Date: 6/20/2000 6:53:08 AM  
Consider changing the reference <<A detailed definition of CA may be found in SCSI-2.>> to SAM-2 to eliminate the SCSI-2 reference purchase.

12. Page 34

Annotation 1; Label: Gene E Milligan; Date: 6/20/2000 7:00:58 AM  
Delete <<Although there are a few exceptions,>>

13. Annotation 2; Label: Gene E Milligan; Date: 6/20/2000 7:05:43 AM  
Change <<executed by a single task, which>> to "executed as a single task that".

14. Page 35

Annotation 1; Label: Gene E Milligan; Date: 6/20/2000 7:15:26 AM  
Change <<or exceptional device condition>> to "or exception condition".

15. Page 37

Annotation 1; Label: Gene E Milligan; Date: 6/20/2000 7:29:01 AM  
In the definitions of acronyms why do only SPC and SCSI-2 have numbers - or verse visa?

16. Page 39

Annotation 1; Label: Gene E Milligan; Date: 6/20/2000 7:56:17 AM

Bold seems to be used for emphasis. I understand this is not according to the ANSI or ISO/IEC style guides.

17. Page 42

Annotation 1; Label: Gene E Milligan; Date: 6/20/2000 10:41:19 AM  
In 4.3.2 consider deleting "typical" in the paragraph four places.

18. Annotation 2; Label: Gene E Milligan; Date: 6/20/2000 10:43:22 AM  
Globally search <<on logical units> and <<on that logical unit>> and replace them with a form of "of logical units".

19. Annotation 3; Label: Gene E Milligan; Date: 6/20/2000 10:45:18 AM  
<<the sixteen-byte command descriptor blocks contain 32-bit LOGICAL BLOCK ADDRESS fields.>>

Did this change with the 64-bit address change?

20. Annotation 4; Label: Gene E Milligan; Date: 6/20/2000 11:39:06 AM  
Change <<For several commands the transfer length indicates the requested number of bytes to be sent as defined in the command description. For these commands the TRANSFER LENGTH field may be identified by a different name.>> to "Several commands use transfer length to indicate the requested number of bytes to be sent as defined in the command description. For lengths in bytes the TRANSFER LENGTH field may be identified by a different name."

21. Annotation 5; Label: Gene E Milligan; Date: 6/20/2000 11:48:42 AM  
<<This field is typically used in command descriptor blocks for parameters that are sent to a device server>>

I thought commands were sent to logical units not device servers. I think this should be "This field is typically used in command descriptor blocks for parameters that are for device server control"

22. Page 43

Annotation 1; Label: Gene E Milligan; Date: 6/20/2000 11:56:38 AM  
<<The ENCRYPTION IDENTIFICATION field indicates whether CDB bytes 8 through n and/or the data bytes are encrypted. The value also indicates which encryption key to use for decryption. A value of zero indicates no encryption. All other values are reserved.>>

It is not clear from this text whether no encryption is allowed and all encryption values are reserved or if a reference to where the non-reserved values are has been left out.

23. Page 44

Annotation 1; Label: Gene E Milligan; Date: 6/20/2000 12:02:48 PM  
<<This standard defines four commands that all SCSI device servers shall implement>>

I think the logical unit should have the requirement for the mandatory commands not the device server. I think consideration should be globally given as to whether the device server is singled out too often.

24. Annotation 2; Label: Gene E Milligan; Date: 6/20/2000 12:07:57 PM  
Change <<It is especially useful to check the cartridge status of logical units with removable media.>> to "TEST UNIT READY may be used to check the media status of logical units with removable media." or delete it.

25. Annotation 3; Label: Gene E Milligan; Date: 6/20/2000 12:09:02 PM  
Delete <<delays to achieve good status are not advisable.>>

26. Page 45

Annotation 1; Label: Gene E Milligan; Date: 6/20/2000 12:15:19 PM  
<<The device server shall reject unsupported values unless rounding is permitted in the description of the parameter.>>

Isn't this an unwarranted restriction. As I recall rounding is always allowed unless specifically restricted by a parameter and at the moment I do not

recall any where rounding is not allowed.

27. Annotation 2; Label: Gene E Milligan; Date: 6/20/2000 12:17:42 PM  
Change <<The response is simply a GOOD status if the test is successful or a CHECK CONDITION status if the test fails.>> to "The response is GOOD status if the test detects no exceptions or a CHECK CONDITION status if the test detects exceptions."

28. Page 47

Annotation 1; Label: Gene E Milligan; Date: 6/21/2000 11:25:13 PM  
Change <<Suspension of the self-test to service the command shall occur as soon as possible, but shall never take longer than two seconds.>> to "Suspension of the self-test to service the command shall occur as soon as practical and shall not take longer than two seconds."

29. Annotation 2; Label: Gene E Milligan; Date: 6/21/2000 11:27:03 PM  
All references to other standards seem to be the latest project regardless of status. But the normative references have instructions for using later versions not earlier versions. Is it a good idea to call out non-available standards without a compelling reason?

30. Annotation 3; Label: Gene E Milligan; Date: 6/21/2000 11:34:07 PM  
Change <<If one of the exception commands listed in table 6 is received, the device server shall abort the self-test, update the self-test log, and service the command as soon as possible but not longer than two seconds after the command descriptor block has been validated.>> to "If one of the exception commands listed in table 6 is received, the device server shall abort the self-test, update the self-test log, and service the command as soon as practical and not longer than two seconds after the command descriptor block has been validated."

31. Annotation 4; Label: Gene E Milligan; Date: 6/21/2000 11:37:00 PM  
Change << (Abort background self-test function).>> to " (abort background self-test function)."

32. Page 48

Annotation 1; Label: Gene E Milligan; Date: 6/21/2000 11:57:34 PM  
In Table 7 change <<Otherwise, terminate with CHECK CONDITION status, CAL UNIT FAILED SELF-TEST>> to "Otherwise, terminate the subsequent command with CHECK CONDITION status, CAL UNIT FAILED SELF-TEST" two places.

33. Annotation 2; Label: Gene E Milligan; Date: 6/22/2000 12:26:05 AM  
The reservations overview should include an overview of the types of reservations (i.e., RESERVE/RELEASE and PERSISTENT RESERVATIONS).

34. Page 49

Annotation 1; Label: Gene E Milligan; Date: 6/22/2000 12:14:14 AM  
<<A command that explicitly writes the medium shall be checked for reservation conflicts before the device server modifies the medium or cache as a result of the command.>>

The requirement for commands that do not write the media satisfy the requirement. Why are there two versions?

35. Page 51

Annotation 1; Label: Gene E Milligan; Date: 6/22/2000 12:19:39 AM  
<<A reservation may apply to some or all tasks queued before>> is not stated in a SAM conformant manner.

36. Page 52

Annotation 1; Label: Gene E Milligan; Date: 6/22/2000 12:23:55 AM  
<<Multiple reserve/release commands or persistent reserve service actions may be queued at the same time.>>

What does this mean in SAM terms?

37. Annotation 2; Label: Gene E Milligan; Date: 6/22/2000 10:53:00 PM  
Change <<, so most systems require significant reinitialization after a failure that results in a hard reset.>> to ". Systems may require significant reinitialization after a failure that results in a hard reset." or delete the statement.

38. Annotation 3; Label: Gene E Milligan; Date: 6/22/2000 10:55:55 PM  
Change <<The Persistent Reservations management method is used among multiple initiators that require operations to be protected across initiator failures, which usually involve hard resets.>> to "The Persistent Reservations management method may be used among multiple initiators that require operations to be protected across initiator failures, which may involve hard resets."

39. Annotation 4; Label: Gene E Milligan; Date: 6/22/2000 10:58:31 PM  
Change <<Even though different protocols that transport SCSI>> to "Even though different protocols that transport SCSI commands"

40. Annotation 5; Label: Gene E Milligan; Date: 6/22/2000 11:12:24 PM  
Change <<Persistent reservations are optionally retained when power to the target is lost.>> to "Persistent reservations are optionally retained when power to the target is removed." or delete in favor of the redundancy in the next paragraph.

41. Page 53

Annotation 1; Label: Gene E Milligan; Date: 6/22/2000 11:15:49 PM  
Change <<but they remove the ability for the application client to uniquely>> to "but they do not provide the ability for the application client to uniquely" or delete the whole phrase.

42. Annotation 2; Label: Gene E Milligan; Date: 6/22/2000 11:36:13 PM  
Change <<Persist Through Power Loss (APTPL)>> to "APTPL" since if an acronym is defined it should be subsequently used and the definition in this subsequent instance is different than the initial definition.

43. Page 54

Annotation 1; Label: Gene E Milligan; Date: 6/22/2000 11:49:45 PM  
What is a <<the scope-specific address, if any.>> and where is it defined?

44. Page 55

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 12:01:47 AM  
<<If a PERSISTENT RESERVE OUT with a REGISTER AND IGNORE EXISTING KEY service action is sent when an established registration key exists, the registration shall be superseded with the specified service action reservation key.>>

Is this the case even if for some other action the originating initiator would be in violation of the existing persistent reservation?

45. Annotation 2; Label: Gene E Milligan; Date: 6/23/2000 12:12:54 AM  
<<NOTE 4 It is recommended a target have enough resources to handle a registration from each initiator known to the target.>>

Delete note 4. This is a non-sensical recommendation. For Fibre Channel known initiators could be humongous and each initiator is allowed to register an unlimited number of keys. Resources are not a rubber band. Resources are determined by target markets.

46. Page 57

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 10:35:35 AM  
In <<5.5.3.6.1 Overview of removing registrations and persistent

reservations>> there are two different lists with the same introduction. Why is it two lists? Should the second list be preempt rather than remove?

47. Annotation 2; Label: Gene E Milligan; Date: 6/23/2000 10:39:49 AM  
<<most recent aptpl value>>

aptpl should be small caps. In addition globally some of the items that should be small caps look like they are large caps.

48. Annotation 3; Label: Gene E Milligan; Date: 6/23/2000 10:42:37 AM  
What is the a difference between releasing and removing a reservation? I assume the difference is whether or not the keys remain registered. But unless I just missed it, I think this difference needs to be more blatantly provided prior to the complete discussion of the two methods.

49. Page 58

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 10:48:26 AM  
<<The device server shall return a CHECK CONDITION status for a PERSISTENT RESERVE OUT command that specifies the release of a persistent reservation held by the requesting initiator if the SCOPE and TYPE fields do not match the scope and type of the established persistent reservation. The sense key shall be set to ILLEGAL REQUEST and additional sense data shall be set to INVALID RELEASE OF PERSISTENT RESERVATION.>>

This paragraph should mention the outcome of the reservation.

50. Annotation 2; Label: Gene E Milligan; Date: 6/23/2000 10:53:23 AM  
<<If the value in the SERVICE ACTION RESERVATION KEY field is associated with the reservation being preempted then the reservation is preempted and any matching registration(s) removed (see 5.5.3.6.3.3).>>

Removed not preempted?

51. Annotation 3; Label: Gene E Milligan; Date: 6/23/2000 10:56:35 AM  
<<If the value in the SERVICE ACTION RESERVATION KEY field is not associated with the reservation being preempted then any matching registration(s) are removed (see 5.5.3.6.3.4).>>

Huh?

So the non-associated remains?

What are <<matching reservations>> that are removed regardless of association?

52. Page 59

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 10:58:54 AM  
<<See figure 2 for a description of how a device server should interpret a PREEMPT service action to determine the actions it should take>>

Should take, not shall take?

53. Annotation 2; Label: Gene E Milligan; Date: 6/23/2000 10:59:22 AM  
What is an inactive persistent reservation?

54. Annotation 3; Label: Gene E Milligan; Date: 6/23/2000 11:00:59 AM  
If the SERVICE ACTION RESERVATION KEY does not match, how does it point to a registration?

55. Annotation 4; Label: Gene E Milligan; Date: 6/23/2000 11:03:06 AM  
Good thing figures take precedent over text since Figure 2 seems to have more requirements than the text (e.g., active persistent reservation).

56. Annotation 5; Label: Gene E Milligan; Date: 6/23/2000 11:05:39 AM  
<<time-out due to queuing restrictions>>

Task management restrictions?

Queue blocked or task blocked?

57. Page 62

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 11:28:30 AM  
Change <<is defined by the implementation.>> to "is vendor specific."

58. Annotation 2; Label: Gene E Milligan; Date: 6/23/2000 11:31:24 AM  
<<Above the interconnect implementation, two contention resolution options exist:>>

Huh? Would be clear if the intro was deleted and the list was turned into a paragraph.

59. Annotation 3; Label: Gene E Milligan; Date: 6/23/2000 11:38:57 AM  
<<Once a device server grants a reservation, all initiators (regardless of port) except the initiator to which the reservation was granted shall be treated as different initiators.>>

I agree with this if a single device server is behind the multiple ports. But since I do not agree with all instances of the use of device server I think there is room for this statement to be misconstrued when the multiple ports have multiple LUNs with multiple device servers behind them.

On second thought, on agreement, what does different initiators have to do with it. They are treated as different initiators regardless of reservations since they are different initiators. The statement should be about reservation states.

60. Annotation 4; Label: Gene E Milligan; Date: 6/23/2000 11:41:40 AM  
What are <<machine states>>? I think this should be logical unit states.

61. Page 64

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 11:48:21 AM  
Change <<A single logical unit may also serve as a path to multiple resources if the processor device server may interpret information within the data packet and route the packet to the appropriate resource.>> to "A single logical unit may also serve as a path to multiple resources if the processor device server interprets information within the data packet and routes the packet to the appropriate resource."

62. Annotation 2; Label: Gene E Milligan; Date: 6/23/2000 11:52:43 AM  
Change <<If the processor device server determines that an error or unusual condition has occurred>> to "If the processor device server determines that an exception condition has occurred" two places.

The millennium was an unusual condition and was not an error other than that it is occurring twice within a year. In SCSI context both "an error and an unusual condition" would be an error.

63. Annotation 3; Label: Gene E Milligan; Date: 6/23/2000 11:53:50 AM  
I think <<The SCSI processor device is distinguished from an SCSI communications device by the fact that the primary destination of the data packets is within the target device. An SCSI communications device, passes the data on to an ultimate destination outside the target through a network.>> be deleted since there are no longer SCSI communication devices.

64. Annotation 4; Label: Gene E Milligan; Date: 6/23/2000 11:54:58 AM  
Change <<protocol dictated>> to "protocol specified".

65. Page 65

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 11:58:30 AM  
In Table 10 add an Obsolete type "OB = Obsolete"

66. Page 79

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 12:04:34 PM

<<RECEIVE COPY RESULTS commands with a matching value>>

Matching what?

67. Annotation 2; Label: Gene E Milligan; Date: 6/23/2000 12:23:39 PM  
<<The index for a target descriptor is the starting byte number for the target descriptor in the parameter data minus 16 divided by 32.>>

Does that mean minus 0.5. A formula with appropriate parenthesis would be clear.

68. Page 80

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 12:29:06 PM  
<<The copy manager is assumed to employ a sensible vendor-specific policy to decide when to stop retrying.>>

Delete "sensible". Both notes 7 and 8 are of questionable value - typical for notes.

69. Page 91

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 12:34:51 PM  
<<after it established how the copy manager shall process tape reads of unknown block length without error.>>

What is "it"? Mandatory requirements are not allowed to be hidden in notes.

70. Page 94

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 12:38:26 PM  
Change <<general rules are described the clauses>> to "general rules are described in the subclauses referenced in Table 36"

71. Annotation 2; Label: Gene E Milligan; Date: 6/23/2000 12:42:18 PM  
<<If residual destination data is sufficient to perform the output then no data shall be processed. Otherwise, just as much data as needed shall be processed (which may involve reading data from the source device) so that the destination data (which includes any residual destination data from the previous segment) is sufficient. >>

Is this clearer than "do what needs to be done"?

72. Annotation 3; Label: Gene E Milligan; Date: 6/23/2000 12:44:54 PM  
<<The specified number of bytes of inline or embedded data>>

What is "inline data"?

What is "embedded data"?

73. Page 95

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 12:46:05 PM  
<<The data movement shall not involve "processing" as described here.>>

Where?

74. Page 98

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 12:58:38 PM  
<<The BLOCK DEVICE NUMBER OF BLOCKS field specifies the length, in source logical blocks, of data to be processed in the segment.>>

What does processed mean?

75. Page 106

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 1:08:28 PM  
<<If a TUR value of one is supported and the TUR bit contains one, then a TEST UNIT READY



command (see 7.28) shall be used to determine the readiness of the device. If a TUR value of one is not supported and the TUR bit contains one,>>

But the TEST UNIT READY command is mandatory. What gives?

76. Page 118

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 1:11:56 PM  
Table 55 is another example of instances of bumping up the standard version without due cause.

77. Page 119

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 1:14:04 PM  
An acronym would be just as helpful for the other standards as it is for SCSI-2.

78. Page 120

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 1:18:15 PM  
Should "When the HISUP bit is zero, the device server may support the REPORT LUNS command." be added?

79. Annotation 2; Label: Gene E Milligan; Date: 6/23/2000 1:23:41 PM

<<A Multi Port (MULTIP) bit of one shall indicate>>

Should the other bits use this form rather than "indicates"?

80. Annotation 3; Label: Gene E Milligan; Date: 6/23/2000 1:25:48 PM  
<<A medium changer (MCHNGR) bit of one indicates that the device is embedded within or attached to a medium transport element. See SMC-2 for details about medium changers, including a device model for an attached medium changer device. The MCHNGR bit is valid only when the RMB bit is equal to one. A MCHNGR bit of zero indicates that the device is not embedded within or attached to a medium transport element.>>

Isn't this inside out or backwards?

81. Page 121

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 1:49:50 PM  
Change <<upto> to "up to".

82. Page 133

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 1:53:21 PM  
<<parameters in effect for the application client>>

Parameters are in effect for initiators not application clients per se.

83. Page 139

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 3:04:51 PM  
<<If the length is not sufficient to contain the entire parameter list, the first portion of the list shall be returned. This shall not be considered an error.>>

This does not quite cover the zero length case due to using wording different than is standard for most commands. Why is it specified twice (here and with the parameter data)?

84. Page 140

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 3:01:38 PM  
I suggest changing <<persistent reservation(s), if any, that is present>> to "persistent reservations, if any, that are present".

85. Page 141

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 3:06:20 PM  
Why define the ADDITIONAL LENGTH field so many times?

86. Page 142

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 3:14:42 PM  
<<A SCOPE field value of LU shall indicate that the persistent reservation applies to the entire logical unit.>>

The acronym LU is defined only in the notes of a distant table. Ordinarily notes in a table only apply to the table in which they occur. I think LU should be defined in the abbreviations or here. Another alternative would be to use the words. Note that two paragraphs later the acronym is not used. Strive for consistency.

Page 143

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 3:19:38 PM  
Change <<Any application client on any initiator>> to "Any application client in any initiator".

As a global comment "on" is often used providing distorted meaning. "Sitting on" does not convey "residing in."

87. Annotation 2; Label: Gene E Milligan; Date: 6/23/2000 3:23:50 PM  
<<application client on any initiator may execute tasks that request transfers>>

In SCSI parlance I think this and any other instances should be "application client in any initiator may initiate tasks that request transfers" but may be it is not a task until it resides in the LU and so perhaps "application client in any initiator may request transfers"

88. Page 144

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 3:28:02 PM  
<<and use the PERSISTENT RESERVE OUT command to preempt that reservation if required.>>

Delete "if required".

89. Page 145

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 3:34:52 PM  
<<Preempts persistent reservations from another initiator and aborts the task set for the preempted initiator>>

What if the task set architecture is all initiators per LU?

Should this be "Preempts persistent reservations from another initiator and aborts the tasks for the preempted initiator"?

90. Page 146

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 3:46:00 PM  
<<All fields shall be sent on all PERSISTENT RESERVE OUT commands, even if the field is not required for the specified service action and scope values.>>

In this case should it be specified that if the Obsolete function is not supported Bytes 22 and 23 shall be zero? (I do not recall a prior requirement to originate an obsolete function and am not sure what the precedent should be. Perhaps the reader should be left to look in SPC to see what to put in the bytes. The latter is the position I took on another comment. But in both comments it may be OK to specify the behavior that would have applied to SCSI devices that did not support the Obsolete function.)

91. Annotation 2; Label: Gene E Milligan; Date: 6/23/2000 3:50:08 PM  
Change <<zero filled in the most significant bytes to fit the field.>> to "zero filled in the most significant bits to fit the field."

92. Page 147

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 3:55:15 PM  
Change <<The APTPL bit PERSISTENT RESERVE OUT parameter is not summarized in table 83, since it is specified above.>> to "The APTPL bit PERSISTENT RESERVE OUT parameter, specified above, is not summarized in table 83 ."

93. Page 152

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 5:24:13 PM  
I think the BUFFER CAPACITY field should include the designations of MSB and

LSB.

94. Page 154

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 5:30:47 PM

In Table 93 what does <<immediately>> mean in terms of the SCSI architecture?

95. Page 156

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 5:34:43 PM

In Table 96 values => 02h are wrong according to international standards.

96. Page 161

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 6:28:03 PM

<<the AVAILABLE DATA field shall not be altered and the failed segment details shall not be discarded.>>

Does this mean the details transferred are also retained?

If all the details were transferred is anything discarded?

97. Annotation 2; Label: Gene E Milligan; Date: 6/23/2000 6:29:33 PM

Delete <<The fields still being discussed are not good candidates for inclusion in a separate service action because they need to be created and discarded under the same circumstances as the fields already defined. The inclusion of an indefinite length sense data field is a step of significant value.>> and consider deleting <<Possible uses include indicating the number of successful, failed, and indeterminate transfer operations to source and destination copy targets device. >>

98. Page 165

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 6:34:18 PM

Delete <<Obsolete Bits 1 through 4 of Byte 1 provided a method, limited to device addresses 0 through 7, to handle third-party reservations in earlier versions of the SCSI standard. The obsolete method has been replaced by the RESERVE(10) and RELEASE(10). If Byte 1, Bit 4 is equal to one device servers not implementing the obsolete method shall terminate the command with CHECK CONDITION status and the sense key shall be set to ILLEGAL REQUEST.>> The definition of Obsolete does not provide for redefining the requirements and in fact stabilizes the definitions forever.

99. Page 172

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 6:41:54 PM

<<For additional information see SSC.>>

Information on what?

100. Page 173

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 6:44:46 PM

Change <<sense codes not explicitly required by this standard is optional.>> to "sense codes not explicitly required by this standard are optional."

But why are they optional and not vendor specific.

101. Page 176

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 6:50:27 PM

Note 43 discusses buffered operations. All SCSI operations are buffered. I think the intended topic is write cached operations and the text should be adjusted accordingly.

102. Page 193

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 7:32:03 PM

<<Obsolete Bits 1 through 4 of Byte 1 provided a method, limited to device addresses 0 through 7, to handle third-party reservations in earlier versions of the SCSI standard. The obsolete method has been replaced by the RESERVE(10) and RELEASE(10). If Byte 1, Bit 4 is equal to one device servers not implementing the obsolete method shall terminate the command with CHECK CONDITION status and the sense key shall be set to ILLEGAL REQUEST.>> Also the

next paragraph.

See earlier comment on obsolete functions.

103. Page 195

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 7:35:36 PM  
Change to <<and service action concerns all SCSI devices.>> to "and service action is applicable to all SCSI devices."

104. Page 196

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 7:37:34 PM  
<<See SCC-2>> is not an acceptable bit name. This causes an unwarranted purchase of SCC-2.

105. Page 207

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 7:42:00 PM  
Left justification should be used in the second column of Table 132.

106. Page 211

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 7:44:32 PM  
In Table 136 what does xx mean?

107. Page 212

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 7:51:58 PM  
What is the compulsion of having so many notes. <<NOTE 52 The per unit of time count basis is device type specific. Direct-access devices typically use a latency period (i.e., one revolution of the medium) as the unit of time.>>

Does anyone know who determined this was typical and what the statistical requirements are for typical?

108. Page 221

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 8:00:43 PM  
<<while the device is operating at a steady state>>

What does this mean?

Does this mean operating without any commands for a long time?

Does this mean operating with the same command at the same exact intervals?

The above questions are asked to understand why a 3 degree Celsius tolerance is specified without specifying the accuracy of the environment.

109. Page 268

Annotation 1; Label: Gene E Milligan; Date: 6/23/2000 8:14:59 PM  
<<possible via the NCITS world wide web site (<http://www.ncits.org>), the ANSI world wide web site (<http://www.ansi.org>), the IEC site (<http://www.iec.ch/>), or the ISO site (<http://www.iso.ch/>).>>

Another possibility is the ISO/IEC JTC 1 web site <http://www.jtcl.org/>

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

SPC -2 Comments from Texas Instruments

1. John Lohmeyer's email address needs to be updated.
2. I don't consider Figure 1 a roadmap, it is a structure of the SCSI standards, paragraph under figure 1

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