

Voting Results on T10 Letter Ballot 00-033r0 on  
Forwarding FCP-2 to first public review

| Organization                  | Name              | S Vote | Add'l Info |
|-------------------------------|-------------------|--------|------------|
| Adaptec, Inc.                 | Ron Roberts       | P Yes  |            |
| Amphenol Interconnect         | Bill Mable        | P Yes  |            |
| Ancot Corp.                   | Bart Raudebaugh   | P Yes  |            |
| BREA Technologies, Inc.       | Bill Galloway     | P Yes  |            |
| Brocade Comm. Systems, Inc.   | Robert Snively    | P Yes  |            |
| Circuit Assembly Corp.        | Leroy Fong        | P Yes  |            |
| Cisco Systems, Inc.           | David Peterson    | P YesC | Cmnts      |
| CMD Technology                | Edward Haske      | P Yes  |            |
| Compaq Computer Corp.         | Robert Elliott    | P No   | Cmnts      |
| Congruent Software, Inc.      | Peter Johansson   | P Abs  | Cmnts      |
| Crossroads Systems, Inc.      | Neil Wanamaker    | P YesC | Cmnts      |
| Dallas Semiconductor          | Charles Tashbook  | P Yes  |            |
| Dell Computer Corp.           | Ronald Stockford  | P Yes  |            |
| EMC                           | Gary Robinson     | P Yes  |            |
| ENDL Texas                    | Ralph O. Weber    | P No   | IV Cmnts   |
| Exabyte Corp.                 | Mike Taylor       | P Yes  |            |
| FCI                           | Douglas Wagner    | P Yes  |            |
| Fujitsu                       | Eugene Lew        | P Yes  |            |
| General Dynamics              | Nathan Hastad     | P Yes  |            |
| Genroco, Inc.                 | Donald D. Woelz   | P Yes  |            |
| Hewlett Packard Co.           | Steve Jerman      | P Yes  |            |
| Hitachi Cable Manchester, Inc | Zane Daggett      | P Yes  |            |
| Honda Connectors              | Thomas J. Kulesza | P Yes  |            |
| IBM / Tivoli Systems          | George Penokie    | P No   | Cmnts      |
| Iomega Corp.                  | Tim Bradshaw      | P Yes  |            |
| KnowledgeTek, Inc.            | Dennis P. Moore   | P Yes  |            |
| LSI Logic Corp.               | John Lohmeyer     | P YesC | IV Cmnts   |
| Maxtor Corp.                  | Pete McLean       | P Yes  |            |
| Molex Inc.                    | Jay Neer          | P Yes  |            |
| Nishan Systems Inc.           | Charles Monia     | P Yes  |            |
| Ophidian Designs              |                   | DNV    |            |
| Panasonic Technologies, Inc   | Terence J. Nelson | P Yes  |            |
| Philips Electronics/CD Edge   | Bill McFerrin     | P Yes  |            |
| QLogic Corp.                  |                   | DNV    |            |
| Quantum Corp.                 | Mark Evans        | P Yes  |            |
| Seagate Technology            |                   | DNV    |            |
| Storage Technology Corp.      | Erich Oetting     | P Yes  |            |
| Sun Microsystems, Inc.        | Ken Moe           | P Yes  |            |
| Texas Instruments             | Paul D. Aloisi    | P YesC | Cmnts      |
| Toshiba America Elec. Comp.   |                   | DNV    |            |
| AMP / Tyco Electronics        | charles brill     | P Yes  |            |
| Woven Electronics             | Doug Piper        | P Yes  |            |

## Ballot totals:

34 Yes  
3 No  
1 Abstain  
4 Organization(s) did not vote  
42 Total voting organizations  
8 Ballot(s) included comments

This 2/3rds majority ballot passed.

34 Yes is at least a majority of the membership [21] AND

34 Yes is at least 25 (2/3rds of those voting, excluding abstentions [37])

## 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)

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Comments attached to YesC ballot from David Peterson of  
 Cisco Systems, Inc.:

1. (E) PDF page 134:

Change: F.6.2 Sequence level error recover

To: F.6.2 Sequence level error recovery

This header change should thus be propagated to the table of contents.

2. (E) PDF page 11:

The foreword states "The Fibre Channel protocol operates with Fibre Channel  
 Classes of Service 1, 2, 3, and 4 and operates across Fibre Channel fabrics  
 and

arbitrated loops." Not having looked at class 4 I'm not sure how the FCP-2  
 error detection and recovery procedure will function.

3. (E) PDF page 15:

FC-TAPE is now a published standard reference, NCITS TR-24. FC-AL-2 is now a  
 published standard, NCITS 332-1999 1-APR-1999. Remove entry in clause 2.3 and  
 place reference in clause 2.2.

4. (E) PDF page 17:

Believe the reference to table 28 and 29 is to the FC-FS document (not table  
 28 and 29 in FCP-2).

5. (E) PDF page 17:

Clause 3.1.31 there is no dash between "64 bit" and "60 bit". A dash is used  
 in this context in other places.

6. (E) PDF page 18:

Capitalize "an" following "Port Identifier:".

7. (E) PDF page 19:

Clause 3.1.60 there is no dash between "64 bit". A dash is used in this  
 context in other places.

8. (E) PDF page 19:

Update reference to FC-TAPE and FC-AL-2 in clause 3.2 (see comment #3).

9. (E) PDF page 31:

Note 14, add a period to the last sentence. Add a period after NA also  
 (applicable to table 4 and 5 notes).

10. (E) PDF page 35:

The first sentence in clause 5.3 is awkward. Suggest splitting the sentence  
 to:

"As specified in FC-FS, each Fibre Channel node and each Fibre Channel port  
 shall have a Worldwide\_Name. The Worldwide\_Name shall be a unique name using  
 one of the formats defined by FC-FS and its extensions."

11. (E) PDF page 40:

Clause 6.2, paragraph 4 states "The image pair and any Process\_Associator  
 values do not take part in the identification of initiator or target  
 processes". Since Process\_Associators shall not be used why is it necessary  
 to include it in the sentence?

12. (E) PDF page 42:

Table 11 why is the T in task retry identification requested capitalized and  
 the I and F in initiator function capitalized?

13. (E) PDF page 31:

Appears the first letter of some words in table 12 are also capitalized.  
 Should be consistent with table 11.

14. (E) PDF page 47:  
Table 13 the I in Initiator and T in Target should not be capitalized.

15. (E) PDF page 51:  
Clause 8.3, last paragraph, for what it's worth, specifies error recovery behavior that is not class-independent.

16. (E) PDF page 53:  
Last sentence, the E in "Protocol Error" should not be capitalized.

17. (E) PDF page 55:  
Table 22 the first column should be centered.

18. (E) PDF page 59:  
Clause 9.1.2.6 RDDATA does not appear to be in bold font.

19. (E) PDF page 61:  
Clause 9.3, paragraph 6, what would cause a write operation to require a total amount of data less than the amount of data provided by the initiator?

20. (E) PDF page 62:  
Clause 9.4.1, paragraph 4,  
change:  
"it waits until Sequence Initiative has been returned and then transmits an FCP\_RSP IU with CHECK CONDITION status and the sense data that describes the error."  
to:  
"it shall wait until Sequence Initiative has been returned and then transmit an FCP\_RSP IU with CHECK CONDITION status and the sense data that describes the error."

21. (E) whole document:  
Consistent use of the term: "timeout", "time-out", "time out".

22. (T) PDF page 85:  
Clause 12.4.1.6, paragraph 3 should be removed. Paragraph 4 is the agreed upon text.

23. (T) PDF page 86:  
Clause 12.4.1.8, the first paragraph states the procedure shall be used only by FCP devices that have agreed to Sequence level recovery. This procedure can be used regardless of Sequence level recovery provided REC is implemented at the target.

24. (E) PDF page 87:  
Clause 12.5.2, add a space between 1) and 2) and send.

25. (T) PDF page 91:  
Clause A.3 and clause A.4, CRN as defined in SAM-2 rev 15 needs to be added to the Execute Command and Send SCSI Command procedure calls.

26. (T) Annex C:  
Diagrams C.4, C.6, C.7, C.9, C.10 each contain text stating "The use of REC to determine status for error recovery is optional". Again, this is not consistent with the theme of class-independent error detection and recovery. And in C.24 no REC sent from the target as indicated in clause 12.4.1.8. Many of the diagrams are misleading when compared to the text.

27. (E) PDF page 137 and 138:  
Pages are blank, may be deleted.

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Comments attached to No ballot from Robert Elliott of  
Compaq Computer Corp.:

CPQ-001: PDF 32, Page 16 (Editorial)

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Section 4.9 Clearing effects of task management, FCP, FC-FS, and FC-AL-2  
actions

In three places the verb "effect" ("to cause to be") should be "affect" ("to  
effect a change in"):

1. Table 4 - Clearing effects of link related functions - header: "FC link  
action effecting [fix] FCP target object"
2. Table 5 - Clearing effects of initiator actions - header: "initiator action  
effecting [fix] target object"
3. Table 5 note 4 "For multiple-LUN targets, CLEAR TASK SET, ABORT TASK SET,  
and SCSI LOGICAL UNIT RESET effect [fix] only the addressed LUN."

CPQ-002: PDF 32, Page 16 (Editorial)

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Section 4.9 Clearing effects of task management, FCP, FC-FS, and FC-AL-2  
actions

In "Table 4 - Clearing effects of link related functions" two column headers  
are "LOGO(13), PLOGI" and "PRLI(8)(13), PRLO."

Note 13 refers to LOGO and PRLO. It does not refer to PRLI. Change the  
second column header to "PRLI(8), PRLO(13)."

CPQ-003: PDF 33, Page 19 (Technical)

Section 4.9 Clearing effects of task management, FCP, FC-FS, and FC-AL-2  
actions  
and Section 6.3.4 New or repeated PRLI

<excerpts from fcp2>

Section 4.9 Clearing effects of task management, FCP, FC-FS, and FC-AL-2  
actions

Table 6 (and maybe 4) does not reflect working group agreement.

Table 6 - Management of mode pages during PRLI and PRLO  
PRLI/shared/other initiators = use saved or default mode pages  
[00-342r0 requested "unchanged, most current values if no reset"]  
[discussing 00-342r0, Sep CAP WG agreed on "unspecified" with a note  
explaining what "unspecified" means]

Table 4 - Clearing effects of link related functions (excerpt)

For PRLI(8)(13), PRLO

Target mode page parameters restored from saved pages (...)

For all initiator ports(12) = N

Only for initiator port associated with the action = Y

Section 6.3.4 New or repeated PRLI

After the completion of any new or repeated binding PRLI, both members of all  
image pairs successfully established shall have the same state as they would  
have after a hard reset or a power on with respect to each other. All clearing  
actions specified in 4.9 shall be performed. Tasks, reservations, status, and  
MODE SELECT parameters for other image pairs are not affected.

</excerpts>

According to 00-307r0 Minutes from SCSI CAP 11 Sep 2000:

"Jim Coomes reviewed the issues between FCP-2 process login and proposed that  
mode pages not change as a result of process login (00-342r0) unless a power  
on reset or target reset also occurred. Bob Snively stated a preference for  
making the behavior unspecified. Concerns were raised about readers not  
knowing what unspecified means and it was agreed that a descriptive note is  
required."

According to 00-300r3 Installation of corrections in FCP-2, item 4.115: IBM

comment from George Penokie (Editorial)

"Page 14 - table 5 - The two entries labeled 'discard current mode pages' should be changed to 'not specified'. There is no reason to force the device to discard current mode pages or do any other action with mode pages at this point.

Response: Accepted. See 6.51.

Installation: Installed as requested.

Note that T10-00-342r0 (Clearing affects on other initiators, by Jim Coomes) also references this issue. At the time, the thought was to specify the PRLI unshared case as "unspecified", but after further study, I have used "use saved or default mode pages".

Approved October 30, 2000."

00-342r0 requested a change in the "PRLI/shared/none logged in" row, not the "unshared" row. I assume that "PRLI unshared case" was meant to be "PRLI shared/none logged in" in the 00-300r3 resolution comment.

The issue is that an initiator probably doesn't know if other initiators happened to be logged in or not, so it always has to check shared mode pages after logging in. Forcing the target to revert to saved/default pages on either last logout or first login doesn't help anything. Many existing FCP targets preserve mode pages, and a change in FCP-2 that adds no value but makes existing devices noncompliant should be avoided.

With non-shared pages, the initiator does know the full state of the target with respect to its page, so full specification is helpful. The value after logout doesn't matter, because the initiator cannot access the target without a new login. Thus specifying that pages are reset after login is adequate.

00-342r0 suggested mentioning reset as a special case. That is covered in table 4, so the issue can be ignored in table 6.

Table 6 should use "not specified" for the "PRLI/shared/none logged in" case.

Table 4 should refer entirely to table 6 for the "only for initiator associated with the action" row, rather than trying to apply a "Y" or "N" to them. "Saved or default" means "Y," "not specified" means "maybe", and "maintain current" means "N."

The first sentence of Section 6.3.4 needs this added: "except for mode page parameters (see table 6)."

CPQ-004: PDF 55, Page (Technical)

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Section 9.1.1 FCP\_CMND IU format

In "Table 22 - FCP\_CMND IU Payload," expand the Additional FCP\_CDB Length field to use bits 7:2 rather than just bits 6:2. This is a closer match to the length supported by SPI-4.

CPQ-005: PDF 69, Page 56 (Technical - adds a shall)

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Section 10.2.3 (Disconnect-reconnect mode page/) Buffer Empty Ratio

The Buffer Full Ratio text provides for a special case when the link does not have interconnect tenancy (i.e. it is a fabric rather than a loop connection), but the Buffer Empty Ratio does not have similar text. I suggest adding the same rule to Buffer Empty Ratio.

10.2.2 BUFFER FULL RATIO

The BUFFER FULL RATIO field indicates to the device server, during read operations, how full the buffer should be prior to requesting an interconnect tenancy. Device servers that do not implement the requested ratio should round down to the nearest implemented ratio as defined in SPC-2. FCP devices attached to links that do not have the concept of interconnect tenancy shall round the ratio to 0 and transmit data in a vendor specific manner.

The value contained in the BUFFER FULL RATIO field is defined by SPC-2.

### 10.2.3 BUFFER EMPTY RATIO

The BUFFER EMPTY RATIO field indicates to the device server, during write operations, how empty the buffer should be prior to transmitting an FCP\_XFER\_RDY IU that requests the initiator to send data. Device servers that do not implement the requested ratio should round down to the nearest implemented ratio as defined in SPC-2. [Add this:] FCP devices attached to links that do not have the concept of interconnect tenancy shall round the ratio to 0 and transmit data in a vendor specific manner.

The value contained in the BUFFER EMPTY RATIO field is defined by SPC-2.

CPQ-006: PDF PDF 69, page 55 (Editorial)

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Section 10.2.1 Overview and format of Disconnect-Reconnect mode page for FCP

In Table 30, byte 12, bit 3 should be labeled DIMM and bits 2:0 should be labeled DTDC since they are referenced later. They are currently labeled RESERVED in the table. The later reference declares them reserved.

CPQ-007: PDF 71, page 57 (Editorial)

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Section 10.2.7 MAXIMUM BURST SIZE field  
and Section 10.2.9 Fairness access management bits  
and Section 10.2.10 DIMM and DTDC bits

Remove "field" and "bits" from these section headers - none of the other sections use that wording.

CPQ-008: PDF 71, page 57 (Editorial)

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Section 10.2.9 Fairness access management bits

Add the bit names to the section header:  
Section 10.2.9 Fairness access management (FAA, FAB, FAC)

CPQ-009: PDF 71, page 57 (Editorial)

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Section 10.2.10 DIMM and DTDC bits  
The DISCONNECT IMMEDIATE (DIMM) and the DATA TRANSFER DISCONNECT CONTROL (DTDC) fields defined in SPC-2 are reserved in FCP devices.

Change the D in DIMM from a capital letter to a small capital (both in the header and the text).

CPQ-010: PDF 71, page 57 (Editorial)

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Section 10.2.10 DIMM and DTDC bits  
and Section 10.4.10 RR\_TOV

Use the full name for the fields (like the other fields):  
Section 10.2.10 DISCONNECT IMMEDIATE (DIMM) and DATA TRANSFER DISCONNECT CONTROL (DTDC)  
Section 10.4.10 RESOURCE RECOVERY TIME OUT VALUE (RR\_TOV)

CPQ-011: PDF 25, page 11 (Technical)

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Section 4.2 Device management:

The Fibre Channel protocol implements Asynchronous Event Reporting (see SAM-2) using the Asynchronous Event Notification (AEN) model in SPC-2. The AEN model reports asynchronous events by requiring that the peripheral FCP device take on the initiator role to deliver the asynchronous event sense data to the

host, which is required to act as a target using the processor device model for the duration of the AEN reporting process.

New protocols like SRP and iSCSI are defining native AER information units. FCP should offer the same feature. FCP-2 could add an informative annex describing how it might be done (like bidirectional commands), or it could be identified as a work item for FCP-3.

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Comments attached to Abs ballot from Peter Johansson of  
Congruent Software, Inc.:

I have not actively followed the FCP-2 work and consider myself unqualified to cast a vote on this technical subject.

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

The following comments accompany Crossroads' vote of YES on the T10 Letter Ballot for FCP-2:

1. (E) Cover: The contact information for the Technical editor is dated. Update.
2. (E) ii: The contact information for the T10 Vice Chair is also dated. Update.
3. (E) p3, 3.1.19 FC-FS does not explain about FCP Exchanges. Strike the reference, or indicate that the reference is to "Exchange".
4. (E) p3 3.1.32 CT isn't defined, nor does it show up in the list of acronyms. Spell it out, and put the reference next to it.
5. (T) p4 3.1.37 As the OX\_ID is referenced in several of the recovery procedures, and targets are allowed not to assign RX\_IDs, strike the phrase "meaningful only to the initiator".
6. (E) p4 3.1.47 The correct reference should be to FC-FS.
7. (T) p10 4.2, par 5 In acknowledged classes of service, the command status IU does not actually end the exchange.
8. (E) p11 4.2 par 8 should read "...if command queueing resources are unavailable in the target when a command is received...".
9. (E) p12 4.3 d "REC response" should read "response to an REC".
10. (E) p13 4.5 par 2 Add reference to 8.4. Reference in next par should be 8.1.
11. (E) p21 5.1 par 3 Add reference to use of task retry identifier here.
12. (E-) p22 Table 8. Why are T5, T7 reserved but not in the list of obsolete IUs?
13. (E) p23 5.5 Add Class 4 to the list.
14. (E) p25 5.6.2.9 Add hint that in streamed sequence cases, this ordering also crosses sequence boundaries.
15. (E) 5.6.2.10 Add note that the OX\_ID is assigned by the exchange originator. Remove the tautological phrase at the beginning of this & the next.
16. (E) 6.2 par 2, 6 Remove par 6; add reference after "image pair is removed

by a PRL0 to 6.4.

17. (T) 6.2 par 4, 6.3.1 par 2, 6.3.5. There are several references here to requirements & capabilities of the Originator & Responder. I can find several bits in PRLI that specifically refer to capabilities, but none to requirements (unless write FCP\_XFER\_RDY disable is a requirement - the word requires appears in several places). Additionally, the TASK RETRY IDENTIFICATION REQUESTED bit needs to be labeled one or the other. In addition, 6.3.1 indicates that if the Responder does not accept a requirement it shall not form an image pair, but the description of FCP\_XFER\_RDY disable describes a mechanism where if the Responder does not support the feature it merely clears the bit in the ACC. Suggested remedy is to remove the last sentence of 6.2 par 4 and the phrase "and agrees to the requirements" from 6.3.1 par 2.
18. (E) 6.3.1 par 2. Add reference to the significance of Image Pair Established in the ACC as the indicator of acceptance.
19. (E) 6.3.4 Add paragraph to indicate that the effect of a new or repeated information PRLI is to leave the state unchanged.
20. (E) 6.3.5 Word 3 Bit 5: Remove last sentence.
21. (E) 6.3.5 Word 3 bit 4: add to penultimate sentence "... and the Image Pair Established bit set to 0".
22. (E) p34, p62 Add "This page intentionally left blank".
23. (E) p35 8.1 Table 14. Add line corresponding to encoded value 02h ACC.
24. (E) p36 REC Accept. Add note that the RX\_ID may now be valid (i.e., it may have been specified as 0xffff in the REC Link Service Request, as the Originator may not have received the RX\_ID, but one may have been assigned by the Responder). In other words, the Responder shouldn't blindly copy it from the request.
25. (T) p43 9.1.2.4 par 1. Add at end of sentence beginning "No more than one..." "; otherwise the Exchange Responder shall send an FCP\_RSP indicating a response code of Command Fields Invalid".
25. (E) p45 9.1.2.4 Abort Task Set. Remove the note.
26. (E) p45 9.1.2.7 last sentence, Annex F. As these are in conflict, remove Annex F, and the reference to it in 9.1.2.7.
27. (E) p47 9.2.3 par 2. Add before last sentence "The sum of the value of FCP\_BURST\_LEN field and the value of FCP\_DATA\_RO shall not exceed the value of FCP\_DL." (as this includes the case of the prior sentence, it could be removed).
28. (T) p47 9.3 par 5,6. It would appear that in the case of write operations that use FCP\_XFER\_RDY IUs, the sense of data beyond FCP\_DL being requested by the command is actually an underrun, and opposite the sense in which overrun is set in the XFER\_RDY\_DISABLE case. I would suggest that par 5 refer to the setting of FCP\_RESID\_UNDER, and that the calculation of FCP\_RESID for FCP\_RESID\_OVER cases have its sign inverted, and the description of FCP\_RESID\_OVER at the top of p51 be amended to include the XFER\_RDY\_DISABLE case.
29. (E) p48 9.4.1 par 3 In the last sentence replace "the proper" by "INTERMEDIATE".
30. (E) p57 10.2.11 par 1. Replace "the maximum amount of data" by "the amount specified as the first burst size or the amount requested by one or more FCP\_XFER\_RDYs"
31. (E) p63 Table 34. Add case of fabric attached or point-point to R\_A\_TOV

default values.

32. (T) p65 Table 35. Add XR Received or FCP\_DATA received as (optional) points to restart timer.

33. (E) p69 12.3.4 par 2. It isn't clear why there are two options here, as the ones suggested are in fact the same thing. The second option should be removed, and the first made less specific. This action is up to the application client, and he uses a task management request to perform the function (and he may elect to use a different one than ABORT TASK).

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

ENDL 1: PDF Page 14 (Introduction) Last paragraph on page  
<<master architectural standard>>  
Since there is not subordinate architectural standard, how about just  
"architectural standard".

ENDL 2: PDF Page 14 (Introduction) Last paragraph on page  
<<The SAM-2 standard>>  
Since SAM-2 is not a standard yet, how about just "SAM-2".

ENDL 3: PDF Page 16, 3.1.2  
<<set in>>  
I believe that "sent to" would be more correct.

ENDL 4: PDF Page 16, 3.1.11  
<<extent of the data>>  
Based on the way that bidirectional transfers have reworded 'data  
buffer size', I think it would be best if this were changed to "extent  
of the data (data-in or data-out) as has been done in 3.1.7.

ENDL 5: PDF Page 16, 3.1.14  
<<data pointer value>>  
There is no definition for "data pointer value". Is there a subclause  
reference that can be added or some other way of making clear what a  
"data pointer value" is?

ENDL 6: PDF Page 16, 3.1.14  
<<more than one time during a data delivery action>>  
My understanding of SAM-2 specifies that "more than one time during a  
data delivery action" is equivalent to a single FCP\_DATA IU suggesting  
that data overlay requires multiple "data delivery actions" not a  
[single] data delivery action."

ENDL 7: PDF Page 17, 3.1.15  
<<targeted destination>>  
If "targeted" doesn't refer to "target" then it should be removed.

ENDL 8: PDF Page 17, 3.1.19  
<<FCP Exchange - A SCSI I/O Operation for the Fibre Channel FC-2  
layer. See FC-FS.>>  
Like all other definitions, the term being defined should be separated  
from the definition with a colon (not a dash). Also, would it be  
possible to cross reference an FCP-2 clause describing FCP Exchange in  
addition to the reference to FC-FS.

ENDL 9: PDF Page 17, 3.1.25  
<<In this standard, the word "initiator" refers to an FCP\_Port using  
the Fibre Channel protocol to perform the SCSI initiator functions  
defined by SAM-2.>>  
Unless this standard never uses "initiator" in its SAM-2 meaning, the  
verb 'refers' should be changed to 'also refers'.

There is a similar problem in definition 3.1.54.

ENDL 10: PDF Page 17, 3.1.28

<<executes SCSI commands>>

SCSI never electrocutes commands and furthermore a device server (not a logical unit) processes SCSI commands. Therefore, "executes SCSI commands" should be changed to "receives SCSI commands."

ENDL 11: PDF Page 17, 3.1.32

<<well-known address identifier>>

How about "Fibre Channel well-known address identifier".

ENDL 12: PDF Page 17, 3.1.34

<<Arbitrated Loop>>

Why is arbitrated loop capitalized here but not in 3.1.30?

ENDL 13: PDF Page 18, 3.1.38

<<an address identifier>>

If the format of all the other glossary entries is to be followed, "an" should be capitalized.

ENDL 14: PDF Page 18, 3.1.44

<<FC-FS protocol>>

This would read better as "An FC-FS protocol"

ENDL 15: PDF Page 18, 3.1.45

<<Number of bytes>>

This would read better as "The number of bytes"

ENDL 16: PDF Page 18, 3.1.51

<<an unlinked SCSI command>>

To me, "an unlinked SCSI command" suggests a command that was linked but has somehow become unlinked. The more traditional wording for this is simply "a SCSI command".

ENDL 17: PDF Page 18, 3.1.52

<<A single byte returned by the device server to the application client in its response>>

So does "its" refer to the device server or the application client? I think this phrase works just fine as "A single byte returned by the device server to the application client" (with the phrase "in its response" deleted).

ENDL 19: PDF Page 18, 3.1.53

<<tag: The initiator-specified component of a task identifier that uniquely identifies one task among the several tasks coming from an initiator to a logical unit. See SAM-2.>>

This is a great reproduction of the SAM-2 definition of tag. Now what about the FCP-2 special case? Shouldn't there be some mention of that in the glossary?

ENDL 20: PDF Page 19, APTPL (acronym)

The effect of the response to SPC-2 letter ballot comment 2.2 [41] CQP 1B is to remove the APTPL acronym from SPC-2, thus there will be no SPC-2 reference for the acronym. Since the only uses of the APTPL acronym in FCP-2 reference the APTPL field in the PERSISTENT RESERVE OUT parameter data, the best course of action would be to delete this acronym and make the changed described in ENDL 21 and 22.

ENDL 21: PDF Page 31, Table 4, Note 11

<<When the most recent APTPL value received by the device server is zero.>>

Because the APTPL acronym is not being defined in SPC-2, this should be changed to "When the most recent value received by the device server in a PERSISTENT RESERVE OUT parameter data \*APTPL\* field is zero." Note: \*APTPL\* is meant to indicate that APTPL should be in small caps.

ENDL 22: PDF Page 33, Table 5, Note 11

<<When the most recent APTPL value received by the device server is

zero.>>

Because the APTPL acronym is not being defined in SPC-2, this should be changed to "When the most recent value received by the device server in a PERSISTENT RESERVE OUT parameter data \*APTPL\* field is zero." Note: \*APTPL\* is meant to indicate that APTPL should be in small caps.

ENDL 23: PDF Page 89, Table A.1

<<I\_T\_L\_Q Nexus identifier>>

SAM-2 does not contain the concept of a "Nexus Identifier". Suggesting that SAM-2 defines a "Nexus Identifier" as this Table A.1 text does may cause confusion. Possible resolutions are:

- 1) remove "identifier" from this table entry
- 2) remove this row from the table
- 3) make no changes and live with the ambiguity

ENDL 24: PDF Page 91, A.2

<<Input-1, Input-2>> and <<Output-1, Output-2>>

Input and Output should not be capitalized so that the notation matches that found in the routine prototype above.

ENDL 25: PDF Page 91, A.3 - Execute Command prototype

To match SAM-2 Rev 15, "[Command Reference Number]" needs to be added to the input parameters list.

ENDL 26: PDF Page 91, Table A.3

The proposal that added [Command Reference Number] to SAM-2 did not mention the Send SCSI Command request or SCSI Command Received indication, but it appears that "[Command Reference Number]" should be added to the inputs for both routine prototypes (both in FCP-2 and in SAM-2).

ENDL 27: PDF Page 91, Table A.3 first row

<<send SCSI command request>>

To be consistent with the capitalization elsewhere in this table, this should be "Send SCSI Command request".

\*\*\*\*\*

Comments attached to No ballot from George Penokie of IBM / Tivoli Systems:

Date: Dec 14, 2000

To: T10 Committee (SCSI)

From: George Penokie (Tivoli Systems)

Subject: Comments on FCP-2 Letter Ballot

General

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

1: Tivoli comment from George Penokie

PDF Page 2

2: Tivoli comment from George Penokie

Page ii - The address information of George Penokie is incorrect. It should be:

Tivoli Systems  
3605 Highway 52 N. MS 206  
Rochester, MN 55901  
E-mail: gpenokie@tivoli.com

PDF Page 14

3: Tivoli comment from George Penokie

Page xiv - Annex B - The term 'Fibre Channel Protocol' should be 'Fibre Channel protocol' to match all the other entries in this section.

4: Tivoli comment from George Penokie

Page xiv - You should change the statement 'SCSI-3 family' to 'SCSI family'.

PDF Page 15

5: Tivoli comment from George Penokie

Page 1 - section 1 - The name for SAM-2 is SCSI Architecture Model -2.

PDF Page 16

6: Tivoli comment from George Penokie

Page 2 - section 2.4 - The term Small Form Factor is not correct. The name of that organization is SFF. All references to Small Form Factor should be changed to SFF.

PDF Page 17

7: Tivoli comment from George Penokie

Page 3 - section 3.2.32 - The abbreviation 'CT' is not defined anywhere.

PDF Page 21

8: Tivoli comment from George Penokie

Page 7 - section 3.4 - The ISO convention for 1,000 is 1 000 not 1000.

PDF Page 24

9: Tivoli comment from George Penokie

Page 10 section 4.2 - One of the I/O Operation terms splits across lines at the /. The I/ is on one line and the O Operation is on another. This can be prevented by adjusting a Frame parameter.

10: Tivoli comment from George Penokie

Page 10 - section 4.2 - last paragraph on page - The 'will' needs to be changed to a 'shall'. Will is not a key word. All 'will's in this standard should be located and changed.

PDF Page 25

11: Tivoli comment from George Penokie

Page 11 - section 4.2 - 2nd to last paragraph - There is an example in this paragraph but it is not clear where the example ends and the normative starts. I suggest bounding the example by ()s.

12: Tivoli comment from George Penokie

Page 13 - section 4.4 - the last a) item - The term 'backup copy' should be changed to 'copy' as there is no difference between the two.

PDF Page 28

13: Tivoli comment from George Penokie

Page 14 - table 2 - The title of this table should not include FCP as FCP-2 is a superset of FCP.

14: Tivoli comment from George Penokie

Page 14 - table 2 - target accepts REC row - The statement 'LS\_RJT if not' is not clear. 'If not' what?

15: Tivoli comment from George Penokie

Page 14 - table 2 - initiator provides CRN row - What does 'not required' mean?

PDF Page 29

16: Tivoli comment from George Penokie

Page 15 - table 3 - The term 'required' is not defined as a key word. I believe it should be replaced with 'mandatory' which is a key word. Apply this throughout this standard.

17: Tivoli comment from George Penokie

Page 15 - section 4.8 - last sentence - The following sentence does not make any sense. 'The ABORT TASK function and any functions required to recover Exchange resources and state are performed using FC-FS basic and extended link services.' How does the word 'state' fit into that sentence?

18: Tivoli comment from George Penokie

Page 15 - section 4.9 - 1st paragraph - The statement '...the device upon completion of the specified action.' should be changed to '...the device upon successful completion of the specified action.' This makes it clear that failed operations have no effect.

PDF Page 30

19: Tivoli comment from George Penokie

Page 16 - table 4 - 8th row - The statement 'For all initiator port' should be changed to 'For all initiator ports'.

20: Tivoli comment from George Penokie

Page 16 - table 4 - last row - The Ys and Ns do not line up with the text in the first column.

21: Tivoli comment from George Penokie

Page 16 - table 4 - 11th row - The statement 'cleared to 1' should be 'set to 1' or better yet 'set to one'.

22: Tivoli comment from George Penokie

Page 16 - table 4 - 14th row - Why is the access control data not cleared on a power cycle?

PDF Page 31

23: Tivoli comment from George Penokie

Page 17 - table 4 - footnote 5 - There is no reference as to where TPRLO is defined. I would expect to see a reference to another standard as it is not defined in this standard.

24: Tivoli comment from George Penokie

Page 17 - Table 4 - footnotes 4, 6, and 9 - What is the point in having a footnote with an entry of NA? All the footnotes with NA should be removed.

25: Tivoli comment from George Penokie

Page 17 - table 4 - note 5 - The statements 'GLOBAL bit = '1'. If the GLOBAL bit ='0',...' should be 'GLOBAL is set to 1. IF the GLOBAL bit is set to 0,....'

26: Tivoli comment from George Penokie

Page 17 - table 4 - footnote 15 - The is no definition of 'OLS' on this standard nor is there any reference to where it is defined. What does OLS stand for?

27: Tivoli comment from George Penokie

Page 17 - table 4 - note 5 - The statement '...should be performed...' should be '...should only be per-formed...'

PDF Page 32

28: Tivoli comment from George Penokie

Page 18 - table 5 - 3rd row - The entry 'For transmitting L\_Port only' has no N, Y, or - entries.

29: Tivoli comment from George Penokie

Page 18 - table 5 - 6th row - The Ys and Ns do not line up with the text in the first column.

30: Tivoli comment from George Penokie

Page 18 - table 5 - 8th row - The statement 'For all initiator port' should be changed to 'For all initiator ports'.

PDF Page 33

31: Tivoli comment from George Penokie

Page 19 - Table 5 - footnotes 3, 5, 6, 8, 13, 14, and 15 - What is the point in having a footnote with an entry of NA? All the footnotes with NA should be removed.

PDF Page 36

32: Tivoli comment from George Penokie

Page 22 - section 5.4 - There are at least 3 times the term 'Information Unit' is used and there are at least 3 times the term 'IU' is used. This gives the impression these are two different things when they are the same. Pick one and make it the same throughout the document.

33: Tivoli comment from George Penokie

Page 22 - table 8 - This table should be forced to be on one page to make it easier to read.

PDF Page 39

34: Tivoli comment from George Penokie

Page 25 - section 5.6.2.12 - 3rd and 4th paragraphs - The statement 'a value of 0...' should be 'a value of zero...'

PDF Page 41

35: Tivoli comment from George Penokie

Page 27 - section 6.3.2 - last paragraph - The statement 'setting the ESTABLISH IMAGE PAIR bit to 0.' should be 'setting the ESTABLISH IMAGE PAIR bit to zero.'

36: Tivoli comment from George Penokie

Page 27 - section 6.3.3 - first paragraph - It would be helpful to add a cross reference to where the FCP Service Parameter page is defined.

PDF Page 43

37: Tivoli comment from George Penokie

Throughout the document - In several places a '0' or a '1' is used where a 'zero' or a 'one' should be used. In any sentence where a '0' or '1' occurs in the text it should be changed to a 'zero' or 'one'. For example: 'bit shall be 0' should be 'bit shall be zero'.

PDF Page 44

38: Tivoli comment from George Penokie

Page 30 - section 6.3.5 - word 3 bit 4 - The statement 'set to 1b' should be 'set to one' in all occurrences

PDF Page 50

39: Tivoli comment from George Penokie

Page 36 - table 16 - word 5 - The entry should be in small caps not caps. The same is true for the paragraph below the table.

40: Tivoli comment from George Penokie

Page 36 - section 8.2 - first paragraph after table 16 - The term 'E\_STAT Sequence Initiative' should be in small caps.

PDF Page 52

41: Tivoli comment from George Penokie

Pages 35 to 38 - tables 15, 16, and 17 - All these tables have field names that are not in small caps.

42: Tivoli comment from George Penokie

Page 38 - 1st and 2nd paragraphs after table 17 -The term R\_CTL for IU is not in small caps.

PDF Page 57

43: Tivoli comment from George Penokie

Page 43 - section 9.1.2.4 - Clear ACA - 4th paragraph - The acronym 'CA' is not defined anywhere.

44: Tivoli comment from George Penokie

Page 43 - section 9.1.2.4 - Clear ACA - 4th paragraph - In the statement 'Depending on the mode page parameters that have been established,' there should be a cross reference added to where the mode page is defined.

45: Tivoli comment from George Penokie

Page 43 - section 9.1.2.4 - target reset - 1st paragraph - The statement '...resets all tasks for all initiators.' should be '...aborts all tasks for all initiators.'.

PDF Page 58

46: Tivoli comment from George Penokie

Page xx - Throughout the document - In-line notes need to be numbered per ISO format rules. (i.e., NOTE 1, NOTE 2, etc.)



57: Tivoli comment from George Penokie

Page 50 section 9.4.5 - The last sentence of the last paragraph - This sentence only leads to confusion as to whether or not the FCP\_RSP\_INFO field should be there or not if the FCP\_SNS\_LEN\_VALID bit is zero. I believe the best solution would be to remove the sentence as the issue is clearly defined in section 9.4.8.

PDF Page 65

58: Tivoli comment from George Penokie

Page xx - Throughout the document - All notes should be in 9 point font.

PDF Page 68

59: Tivoli comment from George Penokie

Page 54 - section 10.1 - There should be a something here about seeing table 4 for how to handle mode pages under various conditions.

60: Tivoli comment from George Penokie

Page 54 - section 10.2.1 - The term SCSI-3 should be replaced with SCSI as FCP-2 is not part of SCSI-3.

61: Tivoli comment from George Penokie

Page 54 - section 10.2.1 - The last sentence on this page is split between to pages with lots of white space in-between. This occurs because of the table anchor is positioned at the end of the paragraph. Move the anchor to a paragraph of it's own and the line will not be split.

PDF Page 69

62: Tivoli comment from George Penokie

Page 55 - section 10.2.1 - 1st paragraph after table 30 - The bounds of the example are not clear. Where does it end and the normative text start again. I suggest the 'For Example...' be replaced with '(e.g., ....).

PDF Page 70

63: Tivoli comment from George Penokie

Page 56 - section 10.2.4 - There is a 'will' that should be changed to a 'is going to'.

PDF Page 71

64: Tivoli comment from George Penokie

Page 57 - section 10.3 - The last sentence on this page is split between to pages with lots of white space in-between. This occurs because of the table anchor is positioned at the end of the paragraph. Move the anchor to a paragraph of it's own and the line will not be split.

PDF Page 74

65: Tivoli comment from George Penokie

Page 60 - section 10.4.5 - The term 'LIFA phase' is not defined and there are no references to where it is defined.

66: Tivoli comment from George Penokie

Page 60 - section 10.4.5 - The term 'LIPA phase' is not defined and there are no references to where it is defined.

67: Tivoli comment from George Penokie

Page 60 - section 10.4.5 - The term 'LIHA phase' is not defined and there are no references to where it is defined.

PDF Page 77

68: Tivoli comment from George Penokie

Page 63 - section 11.1 - table 34 - The text in many of the cells is too close to the cell tops.

69: Tivoli comment from George Penokie

Page 62 - section 11.1 - table 34 - The term required and allowed are not defined key words and should not be used in this fashion in this standard. The things are mandatory, or optional not required or allowed.

70: Tivoli comment from George Penokie

Page 62 - section 11.1 - table 34 - The term 'Ref' should be changed to 'Subclause'.

71: Tivoli comment from George Penokie

Page 62 - section 11.1 - table 34 - Some of the symbols used in the Default Value column are not defined anywhere. (i.e. the greater than and the greater than or equal symbols).

72: Tivoli comment from George Penokie

Page 62 - section 11.1 - table 34 - notes - The term ELS is used and then in the term 'extended link services' is used. Although I know these are the same thing how is someone supposed to know that? ELS seems to be the term used most of the time. The term ELS should be used here.

73: Tivoli comment from George Penokie

Page 62 - section 11.1 - table 34 - note 2 - The statement 'service are required to implement this timer.' should be changed to 'service shall implement this timer.'.

74: Tivoli comment from George Penokie

Page 63 - section 11.1 - table 34 - note 5 - The term 'must' needs to be change to 'shall'. The entire document needs to be 'must'ified.

PDF Page 78

75: Tivoli comment from George Penokie

Page 64 - section 11.3 - The note in this section looks to be normative therefore should be made normative by removing the term 'note'.

76: Tivoli comment from George Penokie

Page 64 - section 11.3 - The term exchange authentication is not defined and there is no reference to where it is defined.

77: Tivoli comment from George Penokie

Page 64 - section 11.2 - items a and b - Why if the term 'Frame' now capitalized when every other place up to this point it has not been capitalized. It should be made consistent throughout the document.

PDF Page 80

78: Tivoli comment from George Penokie

Page 66 - section 12.1.2 - 1st paragraph - The term 'desirable' should not be

used. A better way to say this would be Such 'recovery should be used for SCSI...'

79: Tivoli comment from George Penokie

Page 66 - section 12.1.2 - 1st paragraph - There is a cross reference missing.

80: Tivoli comment from George Penokie

Page 66 - section 12.2.2 - item a - This item should start with a capital 'A' as it is the start of a sentence.

PDF Page 81

81: Tivoli comment from George Penokie

Page 67 - section 12.2.3 - 2nd item a - This item should start with a capital 'After' as it is the start of a sentence.

PDF Page 82

82: Tivoli comment from George Penokie

Page 68 - section 12.3.2 - 1st paragraph - The term 'Parameter' should be in small caps and a reference made to where it is defined.

83: Tivoli comment from George Penokie

Page 66 - section 12.3.2 - 3rd paragraph - The term 'Read command' should be 'READ command'.

84: Tivoli comment from George Penokie

Page 68 - section 12.3.3 - The term 'N\_' should be changed to 'N\_Port' in all cases to make it clear to what it is.

85: Tivoli comment from George Penokie

Page 68 - section 12.3.3 - item b - Here is a case where 'one' is used instead of 1. I would like all 1s to be changed to ones.

86: Tivoli comment from George Penokie

Page 68 - section 12.3.3 - 2nd item a - The term 'N\_' should be changed to 'N\_Port' to make it clear to what it is.

PDF Page 83

87: Tivoli comment from George Penokie

Page 69 - section 12.3.5 - 3rd paragraph - The term 'Parameter' should be in small caps and a reference made to where it is defined.

88: Tivoli comment from George Penokie

Page 69 - section 12.4.1.2 - The statement '...set to Abort Sequence, Perform ABTS before issuing the REC.' does not make sense. Why is Perform capitalized when it occurs after the comma?

PDF Page 85

89: Tivoli comment from George Penokie

Page 71 - section 12.4.1.5 - 1st paragraph of page - The term 'write command' should be 'WRITE command'

90: Tivoli comment from George Penokie

Page 71 - section 21.4.1.5 - The last list of items in this section contain '-' instead of 'a,b,c'.

PDF Page 86

91: Tivoli comment from George Penokie

Page 72 - section 12.4.1.7 - 2nd paragraph - In the term 'relative offset field' relative offset should be small caps.

92: Tivoli comment from George Penokie

Page 72 - section 12.4.1.7 - The statement 'the appropriate action required' should be changed to 'the action required' the term 'appropriate' adds nothing to the meaning.

PDF Page 87

93: Tivoli comment from George Penokie

Page 73 - Section 12.4.2.2 - 1st paragraph - In the term 'Parameter field' the term parameter should be in small caps.

94: Tivoli comment from George Penokie

Page 73 - section 12.4.2.3 - 1st paragraph - The statement '...values are not used, it is possible for a missing ACK to an FCP\_RSP IU to allow the target to attempt to abort a more recent Exchange using the same OX\_ID.' is unclear. I suggest it be reworded to '...values are not used, and if there is a missing ACK to an FCP\_RSP IU a target may attempt to abort a more recent Exchange that used the same OX\_ID.'

95: Tivoli comment from George Penokie

Page 73 - section 12.5.2 - The 1,2 list implies order, is that true? If not it should be an a,b,c list. If so then there should be a space between the ') 's and the start of the text.

PDF Page 88

96: Tivoli comment from George Penokie

Page 74 - section 12.5.2 - 2nd to last paragraph - The sentence 'Other retry mechanisms after the second REC fails shall comply with FC-FS, but are otherwise vendor specific.' does not make sense. How can

something be required to comply with FC-FS and vendor specific. I suggest removing the last part of the sentence.

97: Tivoli comment from George Penokie

Page 74 - section 12.5.3 - 1st paragraph - As much as I don't like to say this, the term 'exchange' is capitalized everywhere else why is it not capitalized here?

PDF Page 89

98: Tivoli comment from George Penokie

Page 75 - section A.1 - The 1st sentence - The statement '...by the SAM-2.' should be '...by SAM-2.' or '...by the SAM-2 standard.'

PDF Page 95

99: Tivoli comment from George Penokie

Page 81 - section B.1.7 - 1st sentence - The term 'write command' should be WRITE command' if this is referring to the SCSI WRITE command.

PDF Page 96

100: Tivoli comment from George Penokie

Page 81 - section B.1.8 - section title and other places in this section - The term 'Write command' should be 'WRITE command' if this is referring to the SCSI WRITE command.

PDF Page 102

101: Tivoli comment from George Penokie

Page 88- 102 - section c.1 - figure c.x - The titles of these figures is at the top of the figure, it should be moved to the bottom of the figure to be consistent with the rest of this document.

PDF Page 135

102: Tivoli comment from George Penokie

Page 121 - section D.1.1 - item 7 - This 'will' needs to be deleted and changed to a 'This query obtains'.

PDF Page 143

103: Tivoli comment from George Penokie

Page 129 - section F.1 - The term 'clause' should be replaced with 'annex' in several places in this section.

PDF Page 144

104: Tivoli comment from George Penokie

Page 130 - section F.3.1 - A reference to table F.1 needs to be added.

105: Tivoli comment from George Penokie

Page 130 - section F.3.1 - 1st paragraph under table F.1 - The term 'subclauses' should be deleted.

PDF Page 146

106: Tivoli comment from George Penokie

Page 132 - section F.5.1 - There needs to be a reference to table F.2 added.

107: Tivoli comment from George Penokie

Page 132 - section F.5.1 - 1st paragraph under table F.2 - The term 'subclauses' should be deleted.

PDF Page 147

108: Tivoli comment from George Penokie

Page 133 - section F.5.4 - The equation 'FCP\_RESID = FCP\_DL - highest offset of any byte transmitted - 1' results in two values depending on the order it is solved. This needs to be corrected with ()s.

109: Tivoli comment from George Penokie

Page 133 - section F.5.5 - The equation  $FCP\_BIDIRECTIONAL\_READ\_RESID =$

$FCP\_BIDIRECTIONAL\_READ\_DL - \text{highest offset of any byte written} - 1$  results in two values depending on the order it is solved. This needs to be corrected with ()s.

PDF Page 148

110: Tivoli comment from George Penokie

(T) Page 134 - section F.5.5 - It appears the FCP\_BIDIRECTIONAL\_RESID field is

always required to be in the parameter list even when both the bidi under and over bits are set to 0. This automatically makes all existing implementations invalid because that field is not there. This field should only be here if one of the two bits is set to one and this should be made clear in the text.

\*\*\*\*\*

Comments attached to YesC ballot from John Lohmeyer of LSI Logic Corp.:

All of my comments are editorial

1. Cover Page

Correct Technical Editor contact information.

2. Page 2

Correct Lohmeyer fax number is (719) 533-7183.

3. Page 2

NCITS email address is ncits@itic.org.

4. Page 2

Patent Statement: "holder's" should be "holders".

5. Page 11

The T10 list needs to be updated and put into the correct format. Contact me for the URL of the current T10 membership list.

6. Page 12

While I support including the T11 list in FCP-2, the T11 list should be formatted correctly.

7. Page 13

I believe that the NCITS list should come first and is in a different format from the TC list. Check www.ncits.org for this list format or contact Deborah Donovan, if the list is not online.

\*\*\*\*\*

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

FCP-2 - Second Letter ballot comments From Texas Instruments  
Nov -2000

- 1. Bob Snively's company and address have changed, no longer at Sun.
- 2. John Lohmeyer's email is Lohmeyer@t10.org
- 3. George Penokie's information has changed to Trivoli Systems
- 4.

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