                                   01-317 Revision 1
Responses to feedback on SCSI Domain Validation Technical Report.
Terry Gibbons 05 NOV 2001.

****

Comments attached to Abs ballot from Mr. Robert Snively of
Brocade Comm. Systems, Inc.:

This document is outside the scope of our company's business.
Our organization has not reviewed this document.

****

Comments attached to No ballot from Dr. William Ham of
Compaq Computer Corp.:

1. editorial

Location in document: document properties

Comment:
 change the author's name from Ron Roberts to Terry Gibbons

Suggested action to resolve comment:
implement the comment

Action: <ACCEPT>

2. editorial

Location in document: unknown

Comment:
The PDF file font list says it contains Helvetica-Oblique and TimesNewRomanMT
somewhere. Search for those font uses and change them to Arial to match the
predominant font.

Suggested action to resolve comment:
Implement the comment

Action: Times buried in Figure 1 - an inserted slide, this is fixed. Found no
        Helvetica.

3. editorial

Location in document: throughout

Comment:
In the PDF file, set the PDF page numbers to match the printed page numbers so

it looks like "6 (1 of 19)"

Suggested action to resolve comment:
Implement the comment

Action: Need PDF assistance. John Lohmeyer will take care of this.

4. editorial

Location in document: abstract

Comment:
 remove "or system administrators"

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

5. editorial

Location in document: abstract and others

Comment:
General comment: Make use of "SCSI domain" vs "domain" vs "physical SCSI
domain" consistent

In most cases, "domain" suffices - this is the term in the definitions. In a
few cases, "parallel SCSI domain" limits the scope to SPI devices and not
other fabrics, which may be appropriate.

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

6. editorial

Location in document:

Comment:
The first item in the table of contents is "Figures". Try to exclude this
line from the table of contents.

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

7. editorial

Location in document: 3.

Comment:
In the section 3 section name, remove "symbols," since none are defined or
used.
Or, add some symbols (like =) and change the name of 3.3 to "symbols and
abbreviations".

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

8. technical

Location in document: 3.1.1

Comment:
in definitions, "asynchronous transfer" term is defined but is not used
anywhere, although "asynchronous" is. Change this to "asynchronous" or
change the uses of "asynchronous xyz" to "asynchronous transfer"

Also, add a definition of "synchronous transfer".

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

9. technical

Location in document: 3.1.2

Comment:
Delete the definition of bus path, as it is not used anywhere but the
definition of stub, which is not used anywhere.

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

10. technical

Location in document: 3.1.2, 3.1.8, 3.1.25, 3.1.29, possibly others

Comment:
the term "bus" or "SCSI bus" should be replaced with the term "bus segment"
or SCSI bus segment". This is required to be consistent with the latest
version of SPI-4.

Suggested action to resolve comment:
Replace all instances in the document where the term "bus" is used when the
reference is to "bus segment"

Action: <ACCEPT> What about "bus free" and "bus reset"?

11. technical

Location in document: 3.1.9 and others

Comment:
In definitions, change "mega transfers"(two words) to "megatransfers"
throughout

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

12. technical

Location in document: 3.1.16

Comment:
In definition of logical unit, change "SCSI-3 Architecture Model - 2 (SAM-2)"
to "SAM-2"
Suggested action to resolve comment:
Implement the comment

Action: <REJECT>All acronyms referring to References Under Development have
        been replaced by full names.

13. technical

Location in document: 3.1.19

Comment:
In definitions, need to define megabytes as 10^6 (it could also be 2^20)

Suggested action to resolve comment:
Pick one and use it throughout

Action: <ACCEPT>One instance changed to 2^20 bytes.

14. technical

Location in document: 3.1.23

Comment:
This definition is superceded by 3.1.24 and is not accurate.

Suggested action to resolve comment:
delete 3.1.23

Action: <ACCEPT>

15. technical

Location in document: 3.1.29

Comment:
term is not used

Suggested action to resolve comment:
Delete 3.1.29

Action: <ACCEPT>

16. editorial

Location in document: 3.2

Comment:
add abbreviation:
Async = asynchronous data transfer

Don't capitalize R and C in "Redundancy Check" (or capitalize all the other abbreviations)

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

17. editorial

Location in document: 3.3

Comment:
"3.3 Keywords" shows up in the PDF bookmarks with its section number. Since Acrobat Distiller doesn't normally do this, I suspect there is something wrong with the style for this line.
(ideally all section numbers would be included in the bookmarks)

Suggested action to resolve comment:
Make bookmarks consistent

Action: <ACCEPT> Inserted new header.

18. editorial

Location in document: 3.3.3

Comment:
 the "should" keyword definition, put period inside quotes

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

19. editorial

Location in document: 4.1

Comment:
 "exists" should be "exist"

Suggested action to resolve comment:
Change the text

Action: <ACCEPT>

20. editorial

Location in document: 4.2

Comment:
standardese doesn't allow "the following figures" - there should be an
explicit list like "figure 2, figure 3, figure 4, and figure 5"

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

21. editorial

Location in document: Figures 2,3,4,5,6

Comment:
"SCSI Address 6" outside the initiator box seems out of place. It's different
from how the targets are labeled. Put a similar label on each target, or say
"Initiator 6" inside the box.

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

22. technical

Location in document: 4.2

Comment:
change "Each component of the SCSI system" to "Each initiator and target"

Suggested action to resolve comment:
Umplement the comment

Action: <ACCEPT>

23. editorial

Location in document: 4.2

Comment:
 change "system administrator" to "user"

Suggested action to resolve comment:

Action: <ACCEPT>

24. technical

Location in document: 4.2 above just above Figure 3

Comment:
the statement that this configuration requires termination at both ends of
the cable implies incorrectly that somehow other configurations do not
require termination.

Suggested action to resolve comment:
Delete the sentence.

Action: <ACCEPT>

25. editorial

Location in document: In figure 4

Comment:
"Terminator" should be "Terminators" on the left

Suggested action to resolve comment:
Change the figure.

Action: <ACCEPT>

26. technical

Location in document: Just above Figure 4

Comment:
It is not "one physical cable" but rather "one bus segment"

Suggested action to resolve comment:
Change "one physical cable" to "one bus segment"

Action: <REJECT>Sentence deleted during WG meeting. Expressed only one of
        many applications.

27. technical

Location in document: section 4.2 just below Figure 5

Comment:
There are sources available for the general and specific rules for
constructing domains. Add a reference to both EPI and SPI-4 to specify the
specific rules. EPI contains significant material that is not present in
SPI-4.

Suggested actions to resolve comment:
Add these words just below Figure 5: "The detailed rules for configuring
domains with expanders are contained in EPI and SPI-4. These rules define
requirements for constructing valid domains and for dynamically reconfiguring
domains. Considerations for extending the length of individual bus segments
are presented in EPI."

Add EPI to the references.

Action: <ACCEPT>

28. editorial

Location in document: section 4.2 botton of page 6

Comment:
 last sentence, figure number is missing from the reference

Suggested action to resolve comment:
Add figure number

Action: <ACCEPT>...if Word will let me.

29. editorial

Location in document: in Figure 6

Comment:
 the bus segment numbers might be confusing. Figure 5 has two segments
without numbers. Perhaps labeling them A, B, C, ... would help avoid
confusing them with the SCSI IDs.

(change references in 6.3.2 if this is done)

Suggested action to resolve comment:
Change to letters for segment identification and update references to this
figure.

<REJECT> The numbers were added to Figure 4 (not 5). But numbers remain.

30. editorial

Location in document: section 5 and section 6

Comment:
Should chapters 5 Domain examination and 6 Testing Methods be merged? They
carry some redundant information now.

Possible new section 5 arrangement:
5 Domain validation
* General (from 5)
* Topology discovery (from 5)
* Assumptions (from 6)
* Data patterns (moved here from 6) [Add new section header.]
* Test criteria (generic parts moved here from 6) [Move useful material to
  appropriate section.]

* Domain validation tests
** Basic test (from 5)(incl Basic test criteria from 6)
** Enhanced test (from 5)(incl Enhanced test criteria from 6)
** Test order (from 6)
** Test conditions (from 6)(without data patterns) [Correct reference to
   fall-back.]
** Test output (from 6)

* Margin test
** Margin test and parameters (from 5)
** Assumptions (from 6)
** Test order (from 6)
** Test conditions (from 6)(with fast-10 line from test criteria)
** Test combinations (from 6)
** Test direction (from 6)
** Test output (from 6)
** Margin flow charts (from 6)
[Section 6 is gone. Figures and TOC updated.]

Suggested action to resolve comment:
implement the suggested section re-arrangement

<REJECT> Tentatively. Changes subject to timeliness and Working Group
         acceptance. Test order, test conditions, test output are redundant
         in this outline. Why not move the entire "Test conditions" and not
         just the data patterns?
<UPDATE> Accepted and implemented.

31. editorial

Location in document: 5.1

Comment:
change "system administrator" to "user"

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

32. technical

Location in document: 5.2

Comment:
Topology discovery should mention expanders, since they create the topology

Suggested action to resolve comment:
Add "Determining the topology of the domain involves identifying the valid
SCSI addresses and their relationship to each other and to expanders within a
domain"

Action: <ACCEPT>

33. technical

Location in document: 5.3.1

Comment:
 after "INQUIRY command" add "(see SPC-3)"

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

34. technical

Location in document: 5.3.2

Comment:
 After "WRITE BUFFER and READ BUFFER commands" add "(see SPC-3)"

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

35. technical

Location in document: 5.3.2

Comment:
The Enhanced test description is missing the fundamental algorithm (this will
need some rewording for standardese):

1) Issue a READ BUFFER command with echo buffer descriptor mode to determine
if an echo buffer is supported, obtain the size of the echo buffer, and
determine whether multiple initiators are able to use the echo buffer without
overwriting each others' data.
2) issue a WRITE BUFFER command with echo buffer mode using a selected data
pattern;
3) issue a READ BUFFER command with echo buffer mode. If the command results
in a CHECK CONDITION with a sense key of ABORTED COMMAND and an additional
sense code of ECHO BUFFER OVERWRITTEN, repeat the write at step 2);
4) compare the read data with the selected data pattern; and
5) Return to step 2) with another data pattern or finish the Enhanced test.

Suggested action to resolve comment:
Add standardese and implement the comment

Action: <ACCEPT>

36. technical

Location in document: 5.3.3, 6.3.3 and elsewhere

Comment:
change "margin parameter offset adjustment", "margin offset parameter
adjustment", and "margin parameter" to "margin control value"

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>"Margin offset parameter adjustment" is incorrect and has
              been fixed. "Offset" appears to be redundant, use "margin
              parameter adjustment".

37. editorial

Location in document: 5.5.3 and elsewhere

Comment:
 remove the dash from "pre-compensation"

8

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

38. technical

Location in document: bottom of page 9

Comment:
change "offset" to "values"

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>Same as 36.

39. technical

Location in document: 6.2.1

Comment:
 clarify that the order is per target. It doesn't matter if you do:
basic target 0
basic target 1
...
enhanced target 0
enhanced target 1
...

or
basic target 0
enhanced target 0
basic target 1
enhanced target 1

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>Reworded with commentor present.

40. technical

Location in document: 6.2.1

Comment:
 add this paragraph to explain why the test order is proscribed:

The direction of P_CRCA during writes differs during ST data phases
(initiator to target) and DT data phases (target to initiator), although
it is the same for reads (target to initiator). To avoid bus contention,
support for DT should be confirmed with the Basic test (which only uses
reads) before running the Enhanced test with any transfer rate using DT
data phases.

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

41. technical

Location in document: 6.2.2

Comment:
add:
Before running domain validation, a synchronous transfer timeout should be
enabled in the port control mode page (see SPI-4).

9

Suggested action to resolve comment:
Implement the comment

Action:<ACCEPT>

42. editorial

Location in document: bottom of page 10

Comment:
"basic" should be "Basic" to match other references

Suggested action to resolve comment:
Change the text

Action: <ACCEPT>

43. editorial

Location in document: 6.3.4

Comment:
 "to (from)" is awkward. Change to "with" the first two times and "to" the
third time.

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

44. technical

Location in document:6.3.6

Comment:
change last paragraph of 6.3.6 to match last paragraph of 6.2.3 (or vice
versa)

6.3.6:
It is recommended that Echo READ/WRITE BUFFER command be used. If the Echo
function is not available, the application client may use normal READ/WRITE
BUFFER commands.

6.2.3:
The READ/WRITE BUFFER command's echo buffer mode should be used. If the echo
buffer mode is not available, the application client may use READ/WRITE
BUFFER commands with data mode.

Suggested action to resolve comment:
Change the wording per comment

Action: <ACCEPT> 6.3.6 used.

45. technical

Location in document: 6.3.7

Comment:
 change "issued to the display" to "provided to the user"

Suggested action to resolve comment:
Implement the comment

Action:<ACCEPT>

46. editorial

Location in document: before page 13

Comment:

 a brief description of flow charts is needed (perhaps in chapter 3 under a
document conventions subsection).

square box = action
diamond = decision
rounded blob = user interaction
etc.

Suggested action to resolve comment:
Add the description as suggested in the comment

Action: <REJECT> The activity is self-explanatory.

47. technical

Location in document: page 13

Comment:
add a START circle to go with the END circle on the last page

Suggested action to resolve comment:
Add the circle

Action: <ACCEPT>

48. technical

Location in document: page 13 flowchart

Comment:
 change "From Low-to-High" to "For each"

Suggested action to resolve comment:
Change the flowchart

Action: <ACCEPT>

49. editorial

Location in document: pages 13, 14, 15

Comment:
 give each page a Figure caption at the bottom (and add a table of figures at
the beginning of the document)

Then, instead of "Next Page" or "Previous Page" refer to Figure 1, Figure 2,
etc.

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT> Implement as part of redraw. Figure 7 and Figure 7 continued.

50. technical

Location in document: on page 13 left of Basic Check Passed?

Comment:
 put "NO" and '2nd - nth failure" together and make failure lowercase

Suggested action to resolve comment:

Action: <ACCEPT>

51. editorial

Location in document: left side of page 13

Comment:
 move the vertical lines further apart

11

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT> Eliminated through redraw.

51. technical

Location in document: pages 13, 14, 15

Comment:
 in the flowcharts, label pt.aa, pt.bb, etc. with descriptive names, e.g.:

pt.aa = Process DV results
pt.ab = Check for more segments
pt.bb = Margin connection
pt.ba = Margin expander connection

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

52. editorial

Location in document: page 15, second box

Comment:
change "using target" to "using a target"

Suggested action to resolve comment:
Implement the comment

Action: <ACCEPT>

53. editorial

Location in document: all

Comment: congrats to the editor for pulling this stuff together - the no vote
is because there are too many technical errors. Looks like all are easily
fixed.

Suggested action to resolve comment:
Have a nice day.

Action:<Right now, it's not day.>

****

Comments attached to Abs ballot from Mr. Robert H. Nixon of
Emulex:

My organization can not currently offer relevant technical expertise.

****

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

ENDL 01<ACCEPT>
PDF Page 6
3.1.17 logical unit number: -- Follow the pattern of other glossary
entries that have acronyms and make this "3.1.17 logical unit number
(LUN):".

ENDL 02<ACCEPT>
PDF Page 7

3.1.24 "SCSI bus-segment: A SCSI bus segment..." -- Either it is
"SCSI bus-segment" or it is "SCSI bus segment". Please use the
hyphen consistently.

ENDL 03<ACCEPT>
PDF Page 8
4.1 "Figures 1 - 6" -- We have been pressing editors to write this
as "Figure 1, Figure 2, Figure 3, Figure 4, Figure 5, and Figure 6"

ENDL 04<ACCEPT>
PDF Page 8
4.1 "Examples of SCSI bus segments are shown in Figures 1 - 6." --
Figure 1 does not look like a SCSI bus segment to me because I
cannot find the terminators in it.

ENDL 05<ACCEPT>Remove the sentence.
PDF Page 8
4.1 "The position of the terminators within the segment is
irrelevant in defining driver-receiver connections." -- Perhaps it
is that a driver-receiver connection is not a segment at all.
Certainly, a driver-receiver connection as shown in Figure 1 is not
a SCSI bus segment.

ENDL 06
<ACCEPT> Reworded entirely.
PDF Page 9
4.2 "Domains contain combinations of the typical configurations
shown in the following figures." Delete this sentence of gibberish.
1) Domains contain components not configurations, see 3.1.4.
2) "the following figures" really has to name the figures.

ENDL 07<ACCEPT>
PDF Page 9
Figure 2 -- Why is only the initiator shown to have a SCSI Address?
Don't the targets normally have SCSI addresses too? This problem
appears in Figures 2, 3, 4, and 6 too.

It may be intended that the "Target 0" indicates the SCSI Address.
If that is the case then the Initiator should be "Initiator 6".
Definitely the notation needs to be the same for both targets and
initiators.

ENDL 08<ACCEPT>
PDF Page 9
4.2 "Each component of the SCSI system is assigned a pre-defined and
unique SCSI address..." -- Reading this literally, I would expect to
find a SCSI address assigned to the cable, since the cable is a
component of a SCSI system. How about "Each initiator and each
target in a SCSI system is assigned a pre-defined and unique SCSI
address..."

If this change is made, the last sentence of the paragraph can be
deleted, to whit: "Terminators are not assigned addresses." is no
longer needed.

ENDL 09<ACCEPT>
PDF Page 9
4.2 "Figure 3 shows a SCSI domain with the initiator positioned
between two targets. In this configuration termination is required
at both ends of the cable." How is this different from Figure 2? It
looks to me like termination is required at both ends of the cable
in all cases.

ENDL 10<ACCEPT>
PDF Page 9
4.2 Figures 2 and 3 -- Maybe I am being stuffy, but how about giving
these figures titles like "Simplified SCSI domain A" and "Simplified
SCSI domain B".

ENDL 11<ACCEPT>Deleted.

PDF Page 10
4.2 "Figure 4 shows a SCSI domain with an expander in series between
a target and initiator. This is a method of expanding the length of
the initiator-to-target connection beyond that of one physical
cable." -- Why not drop the second sentence since it does not begin
to explain the reasons for using an expander. It might be
acceptable to remove the "the length of".

ENDL 12<ACCEPT>
PDF Page 10
4.2 (last sentence on page) "An example of a complex SCSI domain is
shown in Figure" -- The figure number is missing, unless the page
number 6 at the bottom of the page counts.

ENDL 13<ACCEPT> Language added per Bill Ham 32.
PDF Page 12
5.1 & 5.2 -- Does Topology discovery include discovery of expanders?
5.1 suggests that it does while
5.2 suggests that it does not.

ENDL 14<ACCEPT>The report now references this section as a "Test description"
which ties with the "performance" reference in Section 5.1.
PDF Page 12
5.3 Domain validation -- How does domain validation relate to the
general matters of domain examination described in 5.1? As the
subclauses are currently written, 5.3 looks like a turn into left
field.

ENDL 15<ACCEPT>Same action as ENDL 14.
PDF Page 12
5.3.1 Basic test -- How does "basic test" relate to domain
validation? The previous question was a matter of style and
completeness. Now things are assuming an awful lot regarding what
one knows about the ideas in this TR.

ENDL 16<ACCEPT>
PDF Page 12
5.3.1 "The INQUIRY command is used and is controlled by the
application client." -- 'Controlled' is a relative concept here. The
application client 'controls' when the INQUIRY command is sent, but
the device server (target) 'controls' when and how the command is
processed.

ENDL 17<ACCEPT>
PDF Page 12
5.3.1 "The first 36 bytes of returned data is compared..." -- Both
'bytes' and 'data' are plural nouns, so 'is' is the wrong number for
the verb and 'are' should be used.

ENDL 18<ACCEPT>
PDF Page 12
5.3.1 "If data miscompare occurs but no errors are detected,..."
-- What kind of errors would be detected? The only kind of error
discussed up to this point in the TR is a miscompare error.

ENDL 19<ACCEPT>Cross-reference noted.
PDF Page 12
5.3.1 "After a finite number of retries if data miscompare recurs
then fall back should be attempted." -- What is 'fall back'? There
is no mention of it in the glossary. If 'fall back' is discussed
somewhere else in the TR please add a cross reference.

ENDL 20<ACCEPT>See Bill Ham 25 for wording.
PDF Page 12
5.3.1 & 5.3.2 -- The structure of these two subclauses is not the
same. 5.3.1 presents how to do the test before describing what the
test is good for while 5.3.2 does not even describe how to do the
test.

ENDL 21<ACCEPT>Use "domain" instead of physical layer will provide

necessary clarity.
PDF Page 12
5.3.2 "During these tests, the application client should prevent
other processes from using the SCSI device. Some data patterns are
more stressful on the physical layer." --
1) What is the 'physical layer'? The term is not in the glossary and
so I am left to my rather vivid imagination as to what is being
discussed.
2) If some data patterns have the possibility of burning up the
'physical layer' then why not restrict all use of the SCSI domain,
why is limiting the use of just one SCSI device sufficient?
3) Hopefully, it is now clear that the second sentence here is
entirely too vague.

ENDL 22<ACCEPT> Reworded with commentor present.
PDF Page 13
5.3.3 "Margining has the following features:" -- This statement an
the list that follows it is a total hodgepodge. Items a) and b) in
the list are things that margining 'relies on' not features of
margining. Item c) in the list appears to be a special case of
margining. Item d) in the list appears to be something that
margining accomplishes (perhaps a feature of margining). I cannot
make heads or tails out of item e) in the list.

ENDL 23<ACCEPT>Remove references to fast-160.
PDF Page 13
5.3.3 "Adjustment of driver parameters are required during a
margining type verification sequence when implementing the Fast 160
mode of operation defined in SPI-4." --
1) Is margining a test (like basic and enhanced) or is margining a
type of verification sequence, as suggested by this sentence?
2) This sentence suggests that one can accomplish Fast-20 margining
without adjusting driver parameters. Is that the intent?

ENDL 24<ACCEPT>Make sure rewording is consistent.
PDF Page 13
5.3.3 "Various parameters are adjusted to determine the performance
of that driver-receiver connection. It is recommended that all
margin parameter offset adjustments be set to the values shipped by
the supplier when a bus free phase occurs." -- Are we talking about
'parameter adjustments' or 'parameter offset adjustments'? The first
sentence has it one way and the second has the other. Recommend
deleting 'offset' as it only adds confusion to the text.

ENDL 25<ACCEPT>Reworded with commentor present.
PDF Page 13
5.3.3 "In SCSI initiators, the ECP MARGIN CONTROL function contains
the fields that may be used to control margin parameters (see
SPI-4)." -- A cursory inspection of SPI-4 turned up no ECP MARGIN
CONTROL function for initiators. The only ECP MARGIN CONTROL
function appears to cover just expanders.

ENDL 26<ACCEPT>Use Margin parameter adjustment.
PDF Page 13
5.3.3 "The application client must understand the available settings
and the resultant action of adjusting the offset." -- Again are we
adjusting parameters or offsets?

ENDL 27<REJECT>A brief review of margining, to setup the test expectations,
is appropriate.
PDF Page 14
6 "Within a SCSI domain, the Margin test measures the response of
the initiator-target connection to changes in driver-receiver
connection properties. This is accomplished by examining the entire
domain then testing the margins of the analog drivers and receivers
that make up each driver-receiver connection." -- This paragraph
appears to belong in 5.3.3, not here.

ENDL 28
PDF Page 14

6.2.1 Test order
The following test order is recommended.
1) Execute Basic tests as shown in 5.2.1.1.
2) Execute Enhanced tests as shown in 5.2.2.1.
--
1) 5.2.1.1 does not exist. <ACCEPT>
2) 5.2.2.1 does not exist and up to this point in the TR there has
been no definitive description of how the enhanced tests are
performed. Paragraph reference corrected. Paragraph 5.3.2
adequately describes the enhanced tests. <ACCEPT> Added language per Bill
Ham 35.
3) The position of margining in the test order is not mentioned.
<REJECT>Margining is not part of Domain Validation. DV is a pre-requisite to
reliably running Margining, as stated in paragraph 6. The header in 5.3 was
changed to read "Test descriptions" to avoid confusion.
4) These errors are sufficiently egregious as to necessitate a "No"
vote. I will require demonstration that these errors have been
corrected before changing the "No" vote to a "Yes".

ENDL 29<REJECT>There seems to be inadequate data to make changes. Note that
         there has been a reorganizaton per Bill Ham 30.
PDF Page 14
6.2.2 -- End of review!
It is not possible to understand why there is a Clause 5 and a
Clause 6. Each clause appears to contain information that more
properly belongs in the other. Examples are too numerous to detail,
but here are some.

The first list in 6.2.2 seems to belong where 'fall back' is first
mentioned in 5.3.1. There seems to be no value in having 'fall back'
discussed in two places.

The second list in 6.2.2 seems to be a rudimentary attempt to
describe the algorithm for conducting an enhanced test, but lacks
the specificity accorded the description of the basic test algorithm
in 5.3.1.

Then there is the question of why the basic test algorithm is
described in 5.3.1 while the enhanced test algorithm has to wait to
some smattering of the subclauses in 6.2 to get whatever little
description is on offer.

Next there is the question of what happens if enhanced testing
fails, does one fall back and start at the basic test again or does
one fall back and start with the enhanced test?

As it is currently written, this TR is useful only to those who
already know basically what to do. A major reorganization appears to
be needed.

Note: This comment is not the source of the "No" vote. You can thumb
your nose at this comment and I will change the "No" vote to a "Yes"
when ENDL 28 is fixed. However, failure to cleanup this mess really
means that you are wasting your time with this TR since as written
it is nothing more than a written reminder for those who already know
what it says.

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

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.
PDF Page 5
1: Tivoli comment from George Penokie
Page 1 - section 2.1 - There is not reference in this TC to SPI-3 so why is

16

there a normative reverence to it. This should be removed.
<ACCEPT>Remove the whole section?
2: Tivoli comment from George Penokie
Page 1 -section 2.2 -All the references have the acronym listed after the
name. These should be removed and listed an acronyms section. Or better yet
the acronyms should not be used. Instead the full name of the standard should
always be used.
<REJECT>This is accurate and easier to read than tracking down the acronym
elsewhere.
<UPDATE> ACCEPT: Remove acronyms for all specs.
3: Tivoli comment from George Penokie
Page 1 - section 1 -The term 'document' should be 'technical report'.
<ACCEPT>
4: Tivoli comment from George Penokie
Page 1- section 1 -The term 'document' should be 'technical report'.
<ACCEPT>
5: Tivoli comment from George Penokie
Page 1 - section 2 - The term 'documents' should be 'standards'.
<ACCEPT>
6: Tivoli comment from George Penokie
Page 1 - section 2 - The term 'documents' should be 'standards'.
<ACCEPT>
7: Tivoli comment from George Penokie
Page 1 - section 2.2 - The term 'documents' should be 'standards'.
<ACCEPT>
8: Tivoli comment from George Penokie
Page 1 -section 2.2 - The term 'documents' should be 'standard'.
<ACCEPT>
PDF Page 6
9: Tivoli comment from George Penokie
Page all - Sections all - There appears to only be a 1/2 a line space between
paragraphs throughout this TC. That needs to change to a full line space
between paragraphs and sections. This needs to be fixed.
<ACCEPT>
Page 2 - section 3.1.16 - The term '(SAM-2)' should be deleted as it is
redundant.
<ACCEPT>All abbreviations for references removed.
PDF Page 7
10: Tivoli comment from George Penokie
Page 2-3 - sections 3.1.x - Many of these definitions were copied from older
version of SPI-4 and have changed. They all should be looked at to assure they

match up with the definitions in the current version of SPI-4
<ACCEPT>The editor will go out of his way to overcome the lack of properly
posted material.
PDF Page 8
11: Tivoli comment from George Penokie
Page 4 - section 4.1 - The term 'document' should be 'technical report'.
<ACCEPT>
12: Tivoli comment from George Penokie
Page 4 - section 4.1 - The statement 'Figures 1 - 6' should be 'figure 2,
figure 3, figure 4, figure 5, and figure 6.'
<ACCEPT>
PDF Page 9
13: Tivoli comment from George Penokie
Page 5 - section 4.2 - The statement 'following figures' should be 'figure 2,
figure 3, figure 4, figure 5, and figure 6.'
<ACCEPT>
14: Tivoli comment from George Penokie
Page 5 - section 4.2 paragraph under figure 2 - The statement '...and remain
constant (as long as the hardware value is not physically changed).' should be

'... and remain constant, as long as the hardware value is not physically
changed.'
<ACCEPT>
PDF Page 10
15: Tivoli comment from George Penokie
Page 6 - section 4.2 - paragraph under figure 5 - The statement 'Up to 16 SCSI
addresses may be assigned.' needs to be qualified because it is only valid for
devices connected to a wide (i.e., 16 bit) SCSI bus.

<REJECT> The statement is accurate.
16: Tivoli comment from George Penokie
Page 6 - section 4.2 3rd paragraph under figure 5 - The term 'Figure' has no
figure number and should not be capitalized.
<ACCEPT>
PDF Page 12
17: Tivoli comment from George Penokie
Page 8 - section 5.3.1 and 5.3.2 - These two sections are a duplication of
what already is in annex N of SPI-4. It should be replaced with a reference to
SPI-4. Or deleted from SPI-4.
<REJECT>This one document needs sufficient material for someone to develop DV tests.
PDF Page 13
18: Tivoli comment from George Penokie
Page 9 - section 5.3.3- The term 'executed' should be replaced with 'run'.
<REJECT>The .EXE extension is used to indicate an executable program. This
term is understood to programmers and users.
<UPDATE>ACCEPT: Change to perform.
19: Tivoli comment from George Penokie
Page many - section many - The a,b,c and 1,2,3 lists appear to have a 1/2 line
space between entries. This needs to change to no line space.
<ACCEPT>
20: Tivoli comment from George Penokie
Page 9 - section 5.3.3 first item d - The statement '(chip, connector, cable,
etc.)' should be '(e.g., chip, connector, cable)'.
<ACCEPT>
21: Tivoli comment from George Penokie
Page 9 - section 5.3.3 first item e - The statement 'Note that these values
are those available at power-on and that saving changes are prohibited across
power cycles. The Save Pages (SP) bit must be set to zero when adjusting these
values for purposes of domain validation.' should be change to 'These values
are those available at power-on and saving changes are prohibited across power
cycles. The Save Pages (SP) bit of the MODE SELECT command (see SCSI Primary
Commands -3) is required to be set to zero when adjusting these values for
purposes of domain validation.
<ACCEPT>
22: Tivoli comment from George Penokie
Page 9 - section 5.3.3 - last paragraph - The term 'must' is not allowed and
needs to be change to 'is required to'.
<ACCEPT>
23: Tivoli comment from George Penokie
Page 9 - section 5.3.3 last paragraph - The term 'can' is not acceptable. It
should be replaced with 'may'.
<ACCEPT>
24: Tivoli comment from George Penokie
Page 9 - section 5.3.3 - The term 'ECP MARGIN CONTROL function' is not defined

in SPI-4 as indicated in two places in this section. It is not clear to me
what in SPI-4 I am supposed to be looking at. It could be the 'MARGIN CONTROL
expander function' but I am not sure. This needs to be corrected.
<ACCEPT> Reworded with commentor present.
PDF Page 14
25: Tivoli comment from George Penokie
Page 10 - section 6 - This is a hanging section. This needs to be fixed.
<ACCEPT>
26: Tivoli comment from George Penokie
Page 10 - section 6.1 1st paragraph. - The term 'application client' is not
correct. This should be customer, application, host, or some over non-SCSI
term.
<ACCEPT> Contingent upon group approval.
27: Tivoli comment from George Penokie
Page 10 - section 6.1 - This section needs an opening statement indicating
what the list of things are. Also, this list should be made into an a,b,c
list.
<ACCEPT> Reworded introduction to make the rest look like a list.
28: Tivoli comment from George Penokie
Page 10 - section 6.2.1 item 1 and 2 - The statement '...as shown in 5.2.x.1.'

should be '...(see 5.2.x.1)'.
<ACCEPT>
29: Tivoli comment from George Penokie

Page 10 - section 6.2.1 - The list format is not correct. It should be.
'....recommended:
1) ... ; and
2) ......'.
<ACCEPT>
30: Tivoli comment from George Penokie
Page 10 - section 6.2.2 two times - The term 'executed' should be change to
'run'.
<ACCEPT>See previous.
PDF Page 15
31: Tivoli comment from George Penokie
Page 11 - section 6.3.3 - last paragraph - The term 'must' is not allowed and
needs to be change to 'is required to'.
<ACCEPT>
32: Tivoli comment from George Penokie
Page 11 - section 6.2.3 - The statement 'READ/WRITE BUFFER command' should
have a '(see SCSI Primary Commands-3)' after if.
<ACCEPT>
33: Tivoli comment from George Penokie
Page 11 - Section 6.2.4 - The term 'issues' should be 'failures' or 'errors'.
<ACCEPT>
34: Tivoli comment from George Penokie
Page 11 - section 6.2 4 item a - The term 'application client' is not correct.
This should be customer, application, host, or some over non-SCSI term.
<ACCEPT>Use application.
35: Tivoli comment from George Penokie
Page 11 - section 6.2.4 item a - The statement 'stored in a file for future
access' should be changed to 'saved'.
<ACCEPT>Reworded with commentor present.
36: Tivoli comment from George Penokie
Page 11 - section 6.3.1 - The term 'application client' is not correct. This
should be customer, application, host, or some over non-SCSI term.
<ACCEPT>Use application.
37: Tivoli comment from George Penokie
Page 11 - section 6.3 2 item 2 - The statement '...expanders, i.e., those
expanders directly connected to the initiator.' should be '...expanders (i.e.,

those expanders directly connected to the initiator)'...
<ACCEPT>
38: Tivoli comment from George Penokie
Page 11 - section 6.3 2 item 2 - The statement ' See Figure 6 and note the
expanders connected.' should be 'See figure 6 and the expanders connected...'.
<ACCEPT>
39: Tivoli comment from George Penokie
Page 11 - section 6.3.1 item 3 - The statement '...expanders, i.e., those
expanders directly connected to the first layer of expanders.' should be
'...expanders (i.e., those expanders directly connected to the first layer of
expanders).'.
<ACCEPT>
40: Tivoli comment from George Penokie
Page 11 - section 6.3.2 item 3 - The following statement 'See Figure 6 and
note the expander between...' should be 'See figure 6 and the expander
between...'.
<ACCEPT>
41: Tivoli comment from George Penokie
Page 11 - section 6.3.3 - The term 'application client' is not correct. This
should be customer, application, host, or some over non-SCSI term.
<ACCEPT>Use application.
42: Tivoli comment from George Penokie
Page 11 - section 6.3.3 - The term 'ECP MARGIN CONTROL function' is not
defined in SPI-4 as indicated in two places in this section. It is not clear
to me what in SPI-4 I am supposed to be looking at. It could be the 'MARGIN
CONTROL expander function' but I am not sure. This needs to be corrected.
<ACCEPT>Reworded with commentor present.
43: Tivoli comment from George Penokie
Page 11 - section 6.3.3 last paragraph - The statements 'Check sense data for
Echo Buffer Overridden. This should indicate a corrupted Echo Buffer.' should
be 'Check sense data for an ASCQ of ECHO BUFFER OVERRIDDEN for an indication
of a corrupted echo buffer.'.
<ACCEPT>

44: Tivoli comment from George Penokie
Page 11 - Section 6.3.3 - The statement '...after Read Echo Buffer command.'
should be '...after READ ECHO BUFFER command (see SCSI Primary Command - 3).'.
<ACCEPT>
45: Tivoli comment from George Penokie
Page 11- Section 6.3.4 - The term 'Execute' should be 'Run'.
<ACCEPT>Use perform.
PDF Page 16
46: Tivoli comment from George Penokie
Page 12 - section 6.3.4 - The term 'application client' is not correct. This
should be customer, application, host, or some over non-SCSI term.
<ACCEPT>Use application.
47: Tivoli comment from George Penokie
Page 12 - section 6.3.4 2nd paragraph - Replace the term 'restraint' with 'A
minimum number of combinations'.
<ACCEPT>
48: Tivoli comment from George Penokie
Page 12 - section 6.3.4 2nd paragraph - The statement '...recommended. For
instance, an application client may test only the minimum and the maximum of a
set of margin offset parameter adjustments.' should be '...recommended (e.g.,
an application may test only the minimum and the maximum of a set of margin
offset parameter adjustments).'
<ACCEPT>
49: Tivoli comment from George Penokie
Page 12 - section 6.3.5 - The following sentence 'All of the above should be
executed through an outbound data path "TO" a particular target and inbound
"FROM" a particular target.' should be 'The test in x.x.x and x.x.x should be
run through an outbound data path to a particular target and inbound from a
particular target.'
<REJECT>The emphasis is on to and from so that the direction is clear in the
following statements.
<UPDATE>Specify tests and use this language.
50: Tivoli comment from George Penokie
Page 12 - section 6.3.6 - The term 'executed' should be replaced with 'sent'
or 'transmitted'.
<REJECT>You can't send a test, see directional notation in Tivoli 49.
<UPDATE>Changed to performed.
51: Tivoli comment from George Penokie
Page 12 - Section 6.3.6 last paragraph - The end of the paragraph should state
'(see SCSI Primary Commands-3).'
<ACCEPT>
52: Tivoli comment from George Penokie
Page 12 - section 6.3.7 2nd paragraph - The statement 'to the display' should
be deleted.
<ACCEPT>
53: Tivoli comment from George Penokie
Page 12 - Section 6.3.7 item a - The term 'section' should be deleted.
<ACCEPT>
54: Tivoli comment from George Penokie
Page 12 - section 6.3.7 - The term 'application client' is not correct. This
should be customer, application, host, or some over non-SCSI term.
<ACCEPT>Contingent upon group approval.
55: Tivoli comment from George Penokie
Page 12 - section 6.3.7 item a - The statement 'stored in a file for future
access' should be changed to 'saved'.
<ACCEPT>See previous.
56: Tivoli comment from George Penokie
Page 12 - Section 6.3.7 - The term 'issues' should be 'failures' or 'errors'.
PDF Page 17
<ACCEPT>
57: Tivoli comment from George Penokie
Page 13 - section 6.3.8 - The second 'Async Fails' decision block should be
deleted and the 'NO' condition of the "Enhanced Check Passed?" block routed to

the input of the first 'Async Fails?' decision block.
<ACCEPT>
58: Tivoli comment from George Penokie
Page 13 - section 6.3.8 - There needs to be some text to explain what the flow
charts are and the flow charts need to be labeled as figures with
cross-references to those figures.

<REJECT>This is one flow chart, not a set of logical figures.
<UPDATE>add figure and comment

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

SDV - TI Comments
Paul Aloisi

Definitions added

SCSI Terminator: The terminator is at each end of a SCSI bus segment. The
terminator provides impedance match and biasing, holding the bus in a negated
state when it is not driven.
<ACCEPT>
3.1.26 add ID0 is the LSB, least significant bit
<ACCEPT>

4.2 second paragraph
Each component - component should be changed to device and up to 16 unique
address
<ACCEPT>
Each component device of the SCSI system is assigned a pre-defined and up to
16 unique SCSI addresses set by the system administrator. These addresses are
hard wired and remain constant (as long as the hardware value is not
physically changed). Terminators are not assigned addresses.
<REJECT> There is a conflict with the last sentence (removed by ENDL 08).

Expanders do not have SCSI addresses, but a secondary address that is not
predefined in hardware.

5.3.3 second paragraph Fast 160 should be fast-160
<ACCEPT>

6.3.8 first block added (ID0 is the LSB)
<REJECT>Decided that order is not necessary. See Bill Ham 48.

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Comments attached to Abs ballot from Mr. Doug Piper of
Woven Electronics:

No expertise in this matter

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