Date: March 10, 1994

FROM: Gerald Marazas

TO: Members of X3T10

Subject: Proposed Disposition of review comments received regarding Document 992D, SCSI - 3 Serial Bus Protocol (SBP), Revision 14, dated September 15, 1993

This document contains proposed responses to the subject review comments received from the following individuals:

Jeff Stai
Charles Monia
George Penokie
Gene Milligan

All comments are included herein verbatim. The order of names above indicates the order of presentation of comments and proposed responses within this document. Proposed disposition is preceded by the symbol ">" .

The responses and associated editing of documents 992D has been done by Gerald Marazas, Scott Smyers, Larry Lamers, and Ron Roberts. Revision 15 of Document 992D incorporates the disposition recommended by the preceding parties.

Below start the comments and the proposed disposition.

*********************** Start of comments from Jeff Stai *******************************

Date:

From: Jeff Stai

Subject: Comments on SBP

This posting constitutes my comments on SBP rev 14 (X3T9.2/992D R14). My vote to forward is YES. Well, a provisional yes. I don't see anything in SAM that is controversial that will affect SBP (or any other proposal). I hope I am right. I have many comments on SBP, but none of them are substantive to cause me to vote no on SBP.

I'm going to choose not to try and identify technical versus editorial. That's not my job...;-)
HOWEVER, most of these I think ARE boring editorial changes, until I get to page 32. Happy reading!

pg viii: This Introduction is redundant with the Scope section on the following page. I would delete it.
>   Editorial comment. Introduction retained in modified form.

pg 1-end: I would delete all references to SCSI-2, since I believe this is a SCSI-3 standard and I see no reason to refer to SCSI-2.
>   Comment rejected, reference to SCSI -2 and SCSI-3 retained.

pg 1-end: The 1394 standard is referred to in various ways throughout this document. I would propose we standardize on "IEEE 1394" for all references rather than P1394, since it is reasonable to expect that
P1394 will be standardized in a similar time frame.
> Comment accepted.

pg 1-end: Any use of the word "ID" should be changed to "identifier" to match SAM terminology.
> Comment accepted.

pg 1, 3.1: The following terms should also be defined: FIFO (in regards to the idempotence issue; don't write twice to a FIFO); stream identifier; sub-chain.
> Comment considered. Proposed change rejected.

pg 2, several: Shouldn't the several asynch and isoch FIFOs be defined as command FIFOs?
> Comment considered. Proposed change rejected.

pg 2, 3.1.15, sp (spelling): "Initiator"
> Comment accepted.

pg 2-3, several: The following should reference SAM: 3.1.15, 3.1.21, 3.1.26, 3.1.29, 3.1.30.
> Comment accepted.

pg 3, 3.2: Abbreviations should be included for "asynch" and "isoch". Also, "async" in several locations should be fixed.
> Comment accepted.

pg 3, 3.1.27: The definition of tap should include that it occurs via a write transaction.
> Comment accepted.

pg 5, 5.0, pgf. 2: All of SBP is new to SCSI. Delete the 1st line through the word "defined".
> Comment partially accepted, text edited with reference to "new" deleted.

pg 6, 5.1, several: The words "shall" and "may" should be used in several places. I can share with the editors specifics if necessary.
> Comment accepted.

pg 6, 5.1, pgf. 2: The last sentence should read: "The task attribute is in effect at the time of the first acquisition of any part of the CDS."
> Comment accepted.

pg 6-7, 5.2-5.4: These should be in a task management section, not here. Perhaps part of clause 14. Also, for completeness, TARGET RESET, TERMINATE TASK, and CLEAR ACA should also be defined.
> Comment considered. Proposed change rejected.

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pg 6-7, 5.2-5.4: The various references to "status" in these clauses should be "SBP status".
> Comment accepted.

pg 7, 5.3-5.4: What does "complete any outstanding CDS fetch operation" mean? Why bother?
> Text modified, to make more clear intent of original statement -- new text "wait for any pending >
> transaction data responses to complete:"

pg 7, 5.4: This CLEAR TASK SET doesn't work. The initiator can't set the abort task flag of the tasks belonging to other initiators, or even be aware of them if it could have write permission to do so. The procedure must be modified to eliminate this requirement.
> Text modified to make more clear the original intent. Modified text:
> "1) stop issuing transaction data requests for the affected task set;
> 2) wait for any pending transaction data responses to complete;
> 3) return status of GOOD for the abort task set CDS;
> 4) establish a unit attention condition for all task identifiers;"

pg 7, 5.5.1: The two instances of "target/logical unit" should be "logical unit identifier" as per SAM.
> Comment accepted.

pg 7, 5.5.2: Task management functions should also be mentioned in the 2nd sentence.
> Comment considered. Proposed change rejected.

pg 7, 5.6: The 2nd pgf can be entirely replaced by the much simpler: "The initiator shall indicate it does not wish the target to send autosense data by setting the CDS sense length to zero."
> Comment accepted.

pg 8, 5.6, pgf 2: "...then the target shall set the sense data flag to one within the..."

{at this point, I moved on to clause 6. I think we all realize clause 5 needs work...;-}
> Editorial changes have been made to clause 5.

pg 16, fig 3: A box around "TASK SET" and "TASK SET MANAGER" indicating they are defined by SAM would be helpful.
> Comment accepted.

pg 16, 6.1, pgf 1: There should be something in here that says that the information in a 1212 unit dependent directory defines a single SBP target. Also, should we restrict a node to a single SBP unit, with all
targets defined below it? Just for simplicity....
> Comment accepted.

pg 16, 6.1, pgf 2: This pgf makes no sense.
> Extensive modifications to text and movement of example portions of original moved to informative annex A.

pg 17, 6.1, pgf 2: Replace "P1394" with "known". SBP information may be transported over non-1394, but 1212 compliant transports.
> Clause 6.1 substantially revised.

pg 17, table 3: The quadlet order shown is not required by 1212. Why are we requiring it? Also, a note that unit software version is a 1212 requirement would be helpful.
> Contents of Table 3, Unit Directory, are consistent with IEEE 1212-1991, and are needed
> within SBP.

pg 17, 6.1, last 2 pgfs: If you don't know that the "vendor ID" is being used for a "unit specifier ID", this is very confusing. Just call it "unit specifier ID", like 1212.
> Comment accepted.

pg 18, table 4: The quadlet order shown is not required by 1212. Why are we requiring it? Also, the NOTE has the word "prosposed". I assume "proposed". By whom?
> Contents of Table 4 are consistent with IEEE 1212-1991 and are required by SBP. Subject note
> no longer needed and has been removed.

pg 18, 6.1, pgf 3: What "base address"? It's not defined.
> Text describing Configuration ROM detailed example provided in informative annex A. In
> paragraph three appears the text "The base configuration ROM structure exists at a 48-bit
> node identifier address (FFFF F000 0400$_{16}$) found in every IEEE 1394 node."

pg 18, 6.1, pgfs 7 & 9: What is the "base of CSR space". Be nice to define it here.
> Refer to comment given immediately above.

pg 18, 6.2, pgf 2: All 1394 devices do asynch transfers. Better wording would be "A target that transfers SCSI data using IEEE 1394 asynch data transactions shall...".
> Note taken of comment. Idea in original text emphasizes FIFO facilities supporting application use
> of the asynchronous transfer mode.

pg 19, table 5: What is the "Offset" column trying to tell me? Offset from what?
> Offset is relative to start address pointed to pointer in unit dependent directory under title of async
> login FIFO.

pg 19, 6.2.2-6.2.4: References to "command descriptor blocks" should be "CDSs", since these FIFOs can receive only CDSs.
> Comment accepted.

pg 19, 6.2.2: References to BUSY are inappropriate. More on this when I comment on clauses 9-13.
> Text has been modified.

pg 19, 6.2.2: How do I get more than one asynch normal FIFO for a target?
> Implementation detail of a target. If a target provides multiple normal FIFOs, then it can provide >
> different addresses in the response made to the login procedure.

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pg 19, 6.3, pgf 2: Same remark as for 6.2, pgf 2 above. Replace "asynch" with "isoch".
> Same answer.

pg 20, table 6: Same remark as for table 5 above.
> Same answer.

pg 20, 6.3.2: Same remark regarding BUSY as for 6.2.2 above.
> Same answer.

pg 21, 7.1: Everywhere else, the "place" status is put is called a status FIFO (refer to 3.1.25 and 13.0). Here it is called a status block buffer. Change it to FIFO.
> Comment accepted.

pg 21, 7.1, pgf after IMP. NOTE: This is accurate, but hard to follow. Add "... for the associated CDS."
> Do not understand difficulty, text appears to be clear.

pg 21, 8 tap slot rules: These belong in 14.3.
> Text modified.

pg 22, table 9: The descriptions for values 10h and 11h need to be expanded on. When do they occur?
> Comment considered. Proposed change rejected.

pg 22, 7.2, pgf 1: The last sentence should be a NOTE.
> Comment accepted.

pg 23, 7.2, pgf 7: The data length cannot be limited to FFh and an integral multiple of four. The SCSI REQUEST SENSE command can return up to FFh bytes. FFh and multiple of 4 really means FCh. The limit should be 100h.
> Comment accepted.

pg 24, table 14: The "Identifier" field is not defined in the text.
> Comment accepted.

pg 25, 8.1, pgf 4: The first sentence can be simplified to: "The CDS sense buffer address field contains the address to which the CDS sense data is returned." Also, the missing reference at the end is clause 7.2.
> Comment considered. Proposed change rejected.

pg 26, table 20: Need a note saying the S100, S200, S400 are defined for the 1394 cable PHY data rates.
> Comment accepted.

pg 26, 8.1.2, pgf 3, line 1: "...boundary which shall not be crossed..."
> Believe present text is clear and appropriate.

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pg 26, 8.1.2, pgf 4, line 1: "...size of packet that shall be used by..."
>   Believe present text is clear and appropriate.

pg 27, 8.2, pgf 1: Need forward reference to where M-flag is defined.
>   Comment accepted.

pg 28, table 24: All over this document, flag names are nicely spelled out. Except here. I propose the following name changes:
   A-flag   abort task flag (as used elsewhere)
   L-flag   linked flag
   O-flag   data transfer order flag
   S-flag   scatter gather flag
   M-flag   next CDS address valid flag
   SCE-flag end of sub-chain flag
>   Comment accepted.

pg 28, 8.2.1, pgf 1: Last sentence should also say that the abort task flag cannot be cleared until the CDS is released by the target (via status or other action).
>   Comment accepted.

pg 28, 8.2.1, pgf 9 to end: These pgfs should be located with the rest of the scatter gather flag definition.
>   Text modified
pg 29, 8.3: It isn't clear that the LOGIN CDS can be sent after login to change the slot allocation and sign-in for AE.
>   Text modified.

pg 29, table 26: The "Number of Slots", "AE Sense Length", and "AE buffer address" fields are not defined in the text.
>   Comment accepted.

pg 30, pgfs 8-12: These constitute an example, and should appear as a NOTE. Also, the note in pgf 13 is redundant with pgf 7.
>   Starting point is not an example, and needs to appear in mainline text. An example is given in the
>   course of the discussion. Believe information flows better in treatment as given. Some changes
>   made to text for enhanced clarity.

pg 30, table 28: These fields are FIFO addresses, not tap addresses.
>   Comment accepted.

pg 31, 8.4: Title should be UNIT MANAGEMENT CDS.
>   Comment considered. Proposed change rejected.

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pg 31, table 30: Why are these bits for each function, and not a single code? What happens when I set bit 5 and 7 at the same time? Bit 0 and bit 2?
>   Text modified.

pg 32, pgf 3: The NOTE following should be replaced with: "The tag value field is valid only for the TERMINATE TASK and ABORT TASK functions." Also, tag value should really be called "task identifier".
>   Comment considered. Proposed change rejected.

pg 32, 9.0 and after: In many places, references are made to specific bus events on the 1394 bus. These events are not visible to SBP, being hidden below the 1394 Transaction Layer. Therefore, I propose that these several references be brought into line with specific 1394 Transaction Layer services. I think this can be done without losing the essential meaning.
>   Strongly agree with above observation.

I understand why the current wording exists: the Transaction Layer in 1394 was very poorly defined! I have been working to fix that, so I will offer substantive suggestions. The important point here is that when we talking about ack codes and such, we run the danger of redefining 1394. Instead, we should use the service interface supplied
in the 1394 standard. If there is anything lacking in that interface for SBP purposes, please let me know and I will work to correct it!

One key point that I keep seeing is the importance of BUSY status. I now have some familiarity with real 1394 implementations, and they all give BUSY (in various forms) rather regularly, for rather short-term busy conditions. These busy conditions almost always clear up on the very next retry. It is silly to bring SBP operations to a halt for what are HARDWARE transaction operations.

For instance, the data transfer protocols state that if the target receives anything but "complete" or "pending", the data transfer is to be stopped and the command aborted! This would cause every SBP command to be aborted by BUSY on otherwise valid 1394 implementations.

The first change is the remove all references to 1394 "requests" and "responses" and refer to them only as "transactions". An example is pgf 2 under 9.0: "A tap is an IEEE 1394 write transaction with a..."
>   The subject clause has been revised in the spirit suggested by the comment. A new clause, SBP
>   Transaction Management has been added. These changes are believe to address the referenced
>   here and through several of the following comments through the reference to page 35.

pg 32, 9.0, pgfs 2-5: New wording using the interface defined in 1394 for all 1394 applications:

"A tap is an IEEE 1394 write transaction. The initiator sends the tap by sending a transaction data request service to its 1394 Transaction Layer, with the destination address equal to the address of one of the target's command FIFOs. A tap contains the first 64 bytes of a CDS.

"The target receives a transaction data indication service from its 1394 Transaction Layer when it receives the tap. If the target accepts the tap without error, it shall respond to the transaction data indication with a resp_complete response code in the transaction data response. If the target does not accept the tap, it shall complete the transaction with a resp_conflict response code in the

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transaction data response. If the target receives the tap with error, it shall respond o the transaction data indication with the appropriate error response code in the transaction data response.

"If the initiator receives a transaction data confirmation with a request status of COMPLETE, it shall consider the tap accepted by the target. If the initiator receives a transaction data confirmation with a request status of ACKNOWLEDGE_MISSING or TIMEOUT, the tap may have been accepted by the target; the initiator shall not attempt to resend the tap without aborting all tasks in the chain. If the initiator receives a transaction data confirmation with any other request status, the initiator shall consider the tap not accepted by the target."

This is what I have in mind. I will gladly work on new wording for the other sections at the appropriate time. Specific places where rewording needs to be done:

10.0, pgfs 2-5
11.0, pgfs 2-3
11.1, pgfs 1-4
11.2, pgfs 1-4
12.0, pgfs 2-7
13.0, pgfs 1-4

Start of proposed responses to following comments.

pg 35, 14.0, pgf 2: 1st sentence should start: "Targets shall not respond to..." Also, last sentence: "The target shall respond normally to...".
> Comment considered. Proposed change rejected.

pg 37, 14.3, pgf 1: Delete the 2nd sentence beginning "Thus...". Begin the 3rd sentence: "A target supporting asynch transfer operation shall be able to...".
> Text modified.
pg 37, 14.3, pgf 3: 1st sentence starts: "The target shall not be required...". 2nd sentence: "When an initiator requests tap slots, the target shall report to..."
> Text modified.
pg 37, 14.4, pgf 1: How does the initiator "gain release" from a prior sign-in request? There is no provision for this in the LOGIN CDS.
> Text modified.
pg 39, table A-1: Those dangling "y"s are driving me nuts!
> Change has been made. Hope your condition improves soon.
pg 47, table D-1: Boy, that REALLY looks like a CDB. A LOT like a CDB. I could swear that 16-byte CDBs were supposed to have their control bytes in the last byte. I presume this is delivered in the SCSI CDS? It doesn't say so. If not, I didn't know we had 16-byte CDSs!
> Item to be worked on.
••••••••••••••••••••••••••••••••••••••• End of Comments from Jeff Stai. ••••••••••••••••••••••

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************************************** Start of Comments from Charles Monia   ****************

Date: November 7, 1993

From: Charles Monia

Subject: Comments on SBP

In my opinion, this standard is not ready for public review for the reasons listed below, therefore my vote is no.

The following problems must be addressed before I can vote in the affirmative.

General comment 1: I believe the number of editorial errors are unacceptable for a document to be submitted
for public review.
>   General reply. Editorial errors fixed in version 15.

General Comment 3: Requirements need to be correctly identified throughout the standard.
005   The target requirements for command queue processing need to be defined. From the specification, it is not clear when the target is apt to stop reading a command chain.
>   Work group discussion item based on current revision of SAM document.

010   I found the time stamping description in section 5.7 hard to understand. I assume, proper time stamping by an initiator is essential to insure that command queues for all initiators are serviced fairly. In my opinion, a clear description is required before the document can be reviewed adequately.
>   Editorial changes made.

I feel that the remaining technical issues ought to be addressed during the public review period.

General:
1.   References to SCSI-2 should be changed to SCSI-3.
>   Comment considered. Proposed change rejected.

2.   The text needs a thorough proofreading. There are a lot of editing and spelling errors, along with
many incomplete or awkward sentences. I can supply specifics.
>   Fixes made.

3.   A number of places seem to be missing a "shall" statement. I'll be happy to point them out.
>   Fixes made.

4.   The following protocol-specific responses are not defined as required by SAM:
a)   Command Complete (SAM R12, pp 38)
b)   Service Delivery or Target Failure (SAM R12, pp 68)
c)   Function Complete (SAM R12, pp 68)
d)   Function Rejected (SAM R12, pp 68)
>   Work group discussion item based on current revision of SAM document.

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5.   The specification should describe the protocol-specific mapping of SAM service primitives.
>   Work group discussion item, based on current revision of SAM document.

6.   A concise description of how an initiator specifies the sequence of CDS delivery is essential.
This description should include the precedence of each command fifo.
>   Editorial fixes and clarifications made. Subject concern believed to be addressed.

001   Various - The acronyms "isoch" and "asynch" are undefined.
>   Editorial change made, refer to conventions section.

002   Page 4, Section 4.1, third paragraph. The definitions for "octlet" and "quadlet" should
appear in the glossary.
>   Comment accepted

003   Page 6, section 5.2, second paragraph. "received" should be "received".
>   Comment accepted.

004   Page 6, section 5.2, second, third and fourth paragraphs. I was uncertain about the status
parameter referred to in this section. Does this refer to SCSI status or the status associated with a
completed CDS? The term "status" should be qualified to distinguish between these two.
>   Work group discussion item based on current revision of SAM document.

005   Page 6, section 5.2, last paragraph. The note says "... The target must insure that it has the ability to
continue forward progress in a chain beyond the CDS which has been aborted."
>   Comment accepted.

What is the definition of "forward progress"? I assume this refers to the targets ability to
acquire CDS's. Please define the conditions under which a target may suspend CDS acquisition.
>   Comment accepted.

I am especially concerned that a task set full condition on one LUN may cause the target to stop
fetching CDS's for other LUNS.
>   Comment accepted.

006   Page 6, Section 5.3, first paragraph. The fifo used for the task management tap
associated with the Abort task set should be specified.
>   Editorial change made.

007   Page 7, Section 5.4, "Clear Task Set" There is the potential for data corruption that needs
to be addressed for this and other scenarios in which a CDS terminates due to an exception condition.
>   Work group discussion item based on current revision of SAM document.
>   #####   Start of compound comment herein accepted.

The problem is caused by the fact that, after a command failure, the target may continue to fetch and
execute SCSI commands for the logical unit before the initiator has had a chance to intervene.

For Clear Task Set, the problem occurs when:
a) There is a CDS chain from another initiator containing SCSI commands for that task set and;
b) The ACA flag is clear in one or more CDBs within that chain.

In that case, when the target acquires the next CDS from the other initiator, the command will not be executed and will be terminated with CHECK CONDITION (due to the unit attention condition from the Clear Task Set). Since ACA was disabled, a subsequent chained CDS for that logical unit will be executed, thus causing the CA and unit attention conditions to be lost. More importantly, because command execution was not stopped after
the initial unit attention failure, subsequent commands will execute "out of sequence".

By the time the initiator discovers that a command has failed it will be too late. The target will have already acquired and executed other CDS's in the chain, possibly corrupting data beyond recovery. At the very least, there needs to be text somewhere warning of this possibility.

There is a similar problem when the initiator is notified of a unit attention condition by means of the AER mechanism. In that case, since there is no ACA, the initiator cannot intervene to stop the target from acquiring and executing additional CDS's, regardless of whether or not ACAs were disabled.

Note that both problems are generic to all non-interlocked SCSI protocols. ie. the problem needs to be addressed in SAM.

By the way, in the case of SIP/SPI, it was always possible for the initiator to intercept an AEN and intervene before more commands were sent.
> ###### End of compound comment which is accepted.

008 Page 7, section 5.6, second paragraph, last sentence on page "....to send automatically the...." should be "... to automatically send...".
> Editorial change made.

009 page 8, section 5.6, second paragraph. "...the target is required to set...." should be "... the target shall set..."
> Comment accepted.

010 Page 8, section 5.7 I did not understand the role of the time stamp from this description. From various presentations, I get the idea that the function of the time stamp is to insure some level of fairness in processing command chains. If so, that is not clear from the explanation.
> Comment accepted.

011 General One picture is worth a thousand words. It would be nice to have a diagram or two showing how CDS queues work.
> Work group discussion item.

012 Section 5 The material in this section seems tutorial. Perhaps it belongs in an annex.
> Comment considered. Proposed change rejected.

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013   Page 8, section 5.10 The SAM service primitives should be described along with their mapping to SBP.
>   Work group discussion item based on current revision of SAM document.

014   Page 9, section 5.12 "...by which an initiator can operation..." - seems like this should read "...by which an initiator can initiate an operation ...".
>   Comment accepted.

015   Page 10, sections 5.12.2, 5.12.3 Seems like tutorial matter belonging in an annex.
>   Comment considered. Proposed change rejected.

016   Page 12, section 5.12.4 "... the target is allowed to process one and only one...." should be changed to "...the target shall not process more than one...".
>   Comment accepted.

017   Page 14, section 5.12.5, fifth paragraph There should be a pointer to the section describing how an initiator is notified of an available tap slot.
>   Comment accepted.

018   Page 23, Section 7.3, second paragraph, last sentence. "...AE reporting is disabled until the initiator performs another login procedure." Should login be changed to sign-in?
>   Comment accepted.

019   Page 28, section 8.2.1, second paragraph. There seems to be a problem insuring that a linked command can be aborted in a timely manner.
>   Work group discussion item.

Assuming the CDS address corresponds to the tag in SAM, then The task identifier seems to change depending on which linked CDS is being serviced at a particular time. (By the way, SAM assumes that the identifier is fixed for the duration of the task.)
>   Work group discussion item.

As a result, the initiator has no way of knowing which linked CDS has been acquired, and hence has no way to insure that the "current" CDS in a linked series will be aborted. Note that setting the "A" flag has no effect in this case.
>   In general, initiator does not learn of forward progress in the target until completion status
>   returned.
I'd suggest using the address of the last CDS in the series as the "tag", which would then be fixed for the duration of the task. Note that using the address of any other linked CDS prevents that CDS from being reused until the task terminates.
>   Work group discussion item based on current revision of SAM document.

020   Page 28, section 8.2.1, second paragraph. The initiator has no way to intervene and alter the sequence
of linked commands depending on the outcome of a command early in the chain.
>   Comment accepted. Linked commands do have problems.

021   Page 29, Section 8.3 There should be a statement somewhere explaining the reason for allowing an initiator to request an explicit login identification.
>   Believe explanation is given. Subject facility supports multiple initiator environment, especially
>   when these multiple initiators want/need to cooperate.

022   Page 30, section 8.3, fifth paragraph. Reference to "disk drive" seems inappropriate. Aren't these parameters applicable to any device that uses the isochronous facility?
>   Comment accepted.

023   Page 36, Section 14.2.1, Asynch Logout. What is the disposition of chained CDS's upon completion of a logout? I assume they are implicitly returned to the initiator as soon as the logout response is received. If so, that should be stated.
>   Comment accepted.

024   Page 37, section 14.4 When superceding an AE buffer as described in the last sentence of paragraph 3, how does the initiator know when it is safe to reuse the previous buffer? Also, if an AE occurs during a replacement, how does the initiator know which buffer has the data?
>   Discussion item at work group.

•••••••••••••••••••••••••••••••   End of comments from Charles Monia   •••••••••••••••••••

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Date:

From: George Penokie (IBM)

Subject: Comments on SBP

5.12. "...allocation of tap slots is done for advisory purposes..." This phrase should be removed.
Section 5.9 requires the target to remove the slot from the available pool when it is allocated. This is
more than an "advisory". (The phrase about not enforcing a given initiator to its allocation can be left
in.)
>   Comment accepted.

5.12.3. On p. 11, "TAP SLOTS ALLOCATED FOR USE BY AN INITIATOR:" The last two sentences
of this paragraph don't seem to make sense. I'm not sure whether they need to be removed or
clarified.
>   Comment accepted, text modified.

7.1.   P. 21, last paragraph, "TSA flag": Section 5.12.2, p. 12, "USE OF TAP SLOTS FROM THE
GENERAL POOL OF TAP SLOTS" states that there are only "two" groups of slots: Those in the
general pool and those tied to initiators. Item 3 refers to tap slots "with an allocation tied to a given
initiator", however. Likewise, item 6 refers to tap slots tied to a given initiator. If section 5.12.2 is
correct, then I believe that items 3 and 4 could be removed, and item 6 could be restated to say that
"The tap slot available notice is given only to the initiator which used the slot."
>   Text has been modified.

7.2.   "Residue" needs to be defined as the number of bytes which were not transferred for the SCSI
command. (Refer to FCP) Also, the "REQUEST SENSE data (bytes 24 to n) should be interchanged
with the "Response information" (bytes n+1 to m) to agree with FCP format.
>   Comment considered. Proposed change rejected.

The following comments are intended to make the hardware level retry mechanisms (i.e. Busy_x or
Busy_a & Busy_b) which are to be documented in P1394 available to both targets and initiators in an
identical manner. They are also intended to describe the result of either the target or the initiator
returning a "resp_conflict" rcode.
9.   According to my reading of P1394, the appropriate way for a target to reject a tap is to follow
item d) of paragraph 5. (To "respond with a 'pending' acknowledge code and then generate a write
response packet with 'resp_conflict rcode.") Items a)-c) should be removed. Instead of items a)-c),
paragraph 2 could be modified as follows:

A tap shall meet all requirements of the IEEE P1394 standard for block write requests. This includes
either the Single-phase or Dual-phase retry mechanisms as described in IEEE P1394.

(Note that these retry mechanisms are not yet fully documented in Draft 6.4v0, but drafts of the
procedures were available on the "on line" documentation via ftp.)
>   Current version of IEEE P1394, version 6.7, has been enhanced to a considerable extent in this >
>   area. Document 992D (SBP) has been enhanced as well to make explicit reference to transaction
>   layer services provided by P1394. This combination believed to address comment.

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10. Paragraph 3 should include the option for the initiator to follow the Single or Dual phase retry procedure of P1394. Paragraph 4 should clarify that if the initiator rejects the fetch WITH A RESP_CONFLICT RCODE, then the target shall not fetch the rest of the chain.
> Same response as given for comment 9.

11.1. Same comments as #10, above on paragraphs 3 & 4, respectively.
> Same response as given for comment 9.

11.2 Same comments as #10, above on paragraphs 3 & 4, respectively.
> Same response as given for comment 9.

12. Same comments as #10, on paragraphs 6 & 7, respectively
> Same response as given for comment 9.

13. Same comments as #10-- the initiator must be able to use either the Single or Dual-phase retry mechanisms. If the write is rejected by a resp_conflict rcode, then it could be stated that the target is not obligated to retry the operation.
> Same response as given for comment 9.

************************ End of comments from George Penokie. **********************

*********************************** Start of comments from Gene Milligan **************

Date: January 2, 1994

From: Gene Milligan

Subject: Comments on Working Draft SCSI-3 Serial Bus Protocol Revision 14

I did not want to submit comments on one of the several X3T9.2 documents being "forwarded" simultaneously until I had an opportunity to review them all. Having completed the review of the set, this is the third of a series of comments on the documents.

1)   A minor nit, on the front page when forwarded "The contents are being actively modified by the X3T9.2 Task Group." should be deleted. It may be true they are doing this but the procedures contemplates that dpANS are forwarded because they have been completed by the committee and not sent out as trial balloons.
>   Text changed to reflect possibility of change by X3T10 during review process.

2)   Although not an early implementor of the SBP I find the statement "Any commercial or for-profit use is strictly prohibited." counter productive. Please delete it. I presume the early implementors have aspirations of making a profit from SBP.
>   Comment accepted.

3)   It would be a service to the general community to include the acronym SBP in the title.
>   Comment accepted.

4)   For publication the temporary designation P1394 should be replaced with the permanent version 1394 as a global change.
>   Global change made.

5)   It had been alleged at one point that SBP had applications beyond 1394. If that is true the last sentence of the first paragraph of the Introduction is inappropriate. As a free standing layered standard it may be inappropriate in any case. As a minimum change "shall meet all requirements" should be changed to "shall meet all mandatory requirements". But if they are mandatory in 1394 why does SBP need to make this comment. Are mandatory IEEE requirements ignored? This comment also applies to the next to last paragraph of section 2, 12 and to 13.
>   Comment accepted.

6)   The statement that SBP "attempts to solve some of the problems associated with Parallel SCSI protocol" has previously been agreed to be deleted; is inflammatory; may be libelous; is obnoxious; is beneath the elegance of 1394; and should be deleted as previously agreed to.
>   In the spirit of elegance, change has been made.

7)   Queue full conditions are not "arbitrary" and usually result from the queue being full. A reading of SBP indicates that queue full will result from the same condition. The principal difference amount available for the queue while the target will have only a modest amount. Why has the committee surrendered there technical integrity to the marketeers?
>   Text modified in a manner preserving integrity.

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8)   Market statement 2 needs an additional "the" and wrongly considers only a single initiator case since the lack of interruption is the fact that queuing per se is maintained in the host. Depending upon the target horsepower additional I/Os from other initiator may still cause the pause.
>   Comment considered. Proposed change rejected.

9)   As far as I know the committee has not seen any data to support claim 4.
>   Suggested change made.

10)   In aspect 1, 2, and the first paragraph after 3 "Parallel" should be deleted. In 1 "Block" should be plural.
>   Comment accepted.

11)   In aspect 3 the "less packet overhead" is as compared to what? How much less is it on a percentage basis?
>   Comment accepted.

12)   I believe "isoch" is slang and consequently should be included in the 3.1 definitions. Another alternative would be to replace it globally with "isochronous".
>   Accepted the alternative of including "isoch" and "async" clause 3.2 Symbols and Abbreviations.

13)   "The present approach" is inappropriate terminology. Replace it with "SBP".
>   Comment accepted.

14)   The next paragraph should be deleted as "discussions in the SCSI 3 community" are inappropriate for a standard.
>   Comment accepted.

15)   In the third item 2 (I assume the ISO editors will object to the mixed methods of identifying or highlighting paragraphs and/or items) "It is desired to maintain some level of commonality for similar functions ... transport." should be replaced with "The SCSI-3 Architectural Model (SAM) is adhered to maximizing commonality between the various SCSI transport alternatives."
>   Text modified.

16)   Change the fourth bullet of the Scope from "in conformity to task set concept of" to "in conformance with the requirements of".
>   Comment accepted.

17)   Without an explanation of the difference between "queue" and "overlapped" bullets six and seven appear to be in conflict.
>   Comment considered. Proposed change rejected.

18)   Delete "parallel" from bullet eight.
>   Comment accepted.

19)   The Normative references may need expansion and addition of X3 document numbers. I think SCSI-2 should be enumerated.
>   *Accepted. This will be dealt with during final edit.*

20)   In 3.1.1 I think it is "The result of transferring" rather than "The act of transferring".
>   *Ambiguous comment - no change deemed necessary.*

21)   Since "asynch" is slang, a definition should be added for it or it should be changed to asynchronous globally.
>   comment accepted.

22)   In 3.1.2-4 isn't a FIFO more than an address? The command FIFO description comes closer.
>   Comment considered. Proposed change rejected. *A FIFO is functionally only an address.*

23)   What makes the command FIFO write only? Surely it performs some useful work by being read.
>   Comment considered. Proposed change rejected.. *The initiator does not have the ability to discern forward progress of the target through examination of data storage areas.*

24)   Regarding 3.1.9 are there no word or byte displacements? (I think the answer is no just offsets.)
>   *Comment accepted. Your understanding is correct there are only bit displacements.*

25)   In 3.1.10 are elements entered "onto" or "into" a queue? What is an "element"? Should the term be "queue" or "task set"?
>   Comment considered. Proposed change rejected.

26)   In 3.1.10 why is it "enter policy" rather than "enqueue policy"?
>   Comment considered. Proposed change rejected.

27)   In 3.1.14 I think an identifier returned from the target to the initiator would identify the target. Does this definition tie to 3.1.22?
>   Comment considered. Proposed change rejected. *You appear to have a flawed understanding*
>   *of the login procedure.*

28)   In 3.1.19 what is "normal execution"?
>   Comment *rejected. Answer: Execution without priority.*

29)   Does 3.1.26 indicate that untagged commands are not supported by SBP?
>   Comment rejected. Answer: No.

30)   Since there is only one baseline portion of a CDS 3.1.28 should be "hold the baseline".
>   *Comment accepted.*

31)   In 3.1.29 "unit dependant directory" needs to have a definition added.
>   *Comment accepted.*

32)   A section should be added for acronyms.
>   Comment considered. Proposed change rejected. *This is done in clause 3.2*

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33) Should section 4 address 1394 services?
> Comment accepted. A clause has been added to address IEEE 1394 transaction level services
> as applied within the SBP context. Various changes made elsewhere to clarify application of IEEE
> 1394 transaction services to satisfaction of SBP requirements.

34) The second paragraph should mention where SBP requires the ROM to be implemented.
> Comment accepted. A reorganization has been made of manner of description of use of IEEE
> 1212/1394 configuration ROM by SBP. An example of compliant usage has been supplied in
> Annex A.

35) In the third paragraph why not delete "node offset" and delete the parenthesis around "unique
address on the bus".
> Comment accepted.

36) In the next to last paragraph replace "limits" with "determines".
> Comment accepted.

37) The second sentence is nothing but marketing hype with no technical basis. Delete it.
> Comment considered. Proposed change rejected.

38) Why are the Conventions not in section 3?
> Comment considered. Proposed change rejected. Present approach believed to conform to ISO
> style.

39) Why is upper case not explained?
> Comment considered. Proposed change rejected. SBP conforms to editorial style adopted in
> other ANSI documents.

40) Why is it a named flag rather than a named bit?
> Comment considered. Proposed change rejected. SBP uses the term Flag.

41) Table 1 includes the distinction between 1394 and SCSI. Why doesn't Table 2?
> Comment considered. Proposed change rejected. Table 2 believe to properly maintain
> distinctions which are needed.

42) Table 1 and 2 should have a note indicating which is transferred first.
> Comment considered. Proposed change rejected. Subject covered in IEEE 1394 document and
> takes into account the IEEE 1394 transmission media.

43) What does the second sentence of Section 5 mean? SBP is a SCSI-3 standard. It would be
expected to use SCSI-3 terminology. Is it only used in section 5?
> Comment accepted. SBP terminology consistent regarding SCSI 3 in all clauses.

44) After the standard is published for a while the CDS will not be new. The second paragraph
should be recast from new to different or neither with CDS just explained. The standard should be
written as a lasting standard not a newspaper.
> Comment accepted.

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45)   Replace "pointers into initiator" with "pointers to initiator".
>   Comment accepted.

46)   In the fourth paragraph replace "usage" with ""use".
>   Comment accepted.

47)   Does the third sentence of this paragraph awkwardly say that FIFOs are only defined in the TARGET? If so a brief clause in the second sentence would convey this. In either case the third sentence should be deleted.
>   Text modified.

48)   In the last paragraph are "The most significant elements" a superset of mandatory items or is there something else that makes them most significant? What are the least significant elements? What bearing does this have on the standard? Why must it be emphasized? It probably will always improve a standard to search out all instances of "thus" and eliminate them.
>   Comment accepted. Wording changed to emphasize command and status delivery.

49)   What is the exact meaning of "largely equally applicable"?
>   Comment accepted. Awkward phrase replaced.

50)   Replace "Such differences as do exist" with "Differences".
>   Comment accepted.

51)   Replace "are cited in the given topic under discussion." with "are cited in the appropriate clauses." (A determination of whether "clause" or "section" should be used is and the document should be made consistent with this determination. I will usually use the American section.) (Parenthetical statement also applies to annex and appendix.)
>   Comment accepted. Consistent usage made of term clause.

52)   I think an additional phrase is needed in the second paragraph of 5.1. "once set, it can not be cleared" makes it sound like the slot is lost forever.
>   Comment considered. Proposed change rejected. Suggest rereading of subject clause.

53)   Is the first sentence of the third paragraph needed in view of the second sentence?
>   Comment accepted.

54)   What is "disgard"? It could be disregard or perhaps discard.
>   Comment accepted.

55)   What are "task codes"?
>   Comment considered. Proposed change rejected. Refer to Table 21 where they are defined.

56)   The note is confusing since it seems contrary that a command data structure does not contain commands.
>   Editorial change made.
57)   Change the first portion of the first paragraph after the note to "The target shall conform to the requirements of the SCSI ...".
>   Comment accepted.

20

A 6

58)   The last sentence of the section adds no additional information and should be deleted.
>   Comment accepted.

59)   I think the first sentence of 5.2 should be turned around. "The initiator shall set the CDS A-flag in the initiator memory to perform an abort task function and then send a task management CDS with the abort task function set" Is that last portion redundant? Is the A-flag and the abort task function the same thing? If so delete the latter portion. Same comment for 5.3.
>   Comment accepted. Revised text improves clarity on this point.

60)   In the second paragraph shouldn't the first subline be an "and" statement with the first full line? Same comment for the next two paragraphs.
>   Comment accepted.

61)   The note should not contain a requirement. The best solution is to make the note a main portion and to reword it to "The target shall continue processing the chain beyond the CDS which has been aborted." But what if it was the last CDS in the chain?
>   Comment accepted. Note reworked to transfer content to mainline text.

62)   In the second paragraph of 5.3 delete "operation".
>   Comment accepted.

63)   In the second paragraph of 5.4 what does "For all identifiers" mean.
>   Comment accepted. Revised text indicates "for all task identifiers defined in SAM".

64)   Does "acquired at the time the clear task set function was received" substitute for "with a clear task set function" or does it imply that two CDSs can be acquired simultaneously?
>   Comment accepted. Revised text should avoid confusion. Two CDSs not acquired simultaneously.
65)   Delete the last sentence of 5.5.
>   Comment accepted.

66)   In 5.5.1 delete "the possibly" and "implemented at the given target".
>   Comment accepted.

67)   All CDSs within a chain are for the same target. However can they be for a random selection of LUNs?
>   Comment considered. Proposed change rejected. Answer to question -- Yes, they each have a
>   LUN field.

68)   Since the appendix (needs decision on title for ISO commonality) is informative, I presume no further details are necessary and suggest "details" in 5.5.2 be replaced with "information".
>   Comment accepted.

69)   In 5.6 replace "A means is provided to enable" with "Autosense enables". Delete the second sentence of 5.6 as it is not relevant even though true.
>   Though expressed in comment accepted. Editorial changes made.

70)   The last paragraph should be translated from "baby talk".
>   Editorial changes made.

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71)   In the third paragraph of 5.7, and perhaps globally, replace "has value one" with "equals one".
>   Comment accepted. Suggestion implemented in conventions section of document.

72)   In 5.8 replace "As a part of" with "During".
>   Comment accepted.

73)   In 5.9 each of the paragraphs seem to be somewhat contradictory to the others.
>   Editorial changes made to enhance clarity.

74)   The editors can not be blamed having been rendered senseless by SCSI-2's "an SCSI" but "a available" should be "an available".
>   Editorial change made. Editors believe they continue to be in possession of some if not all their
>   senses.

75)   In 5.11 the second sentence should be "An initiator shall provide a queued CDS".
>   Editorial change made.

76)   The third sentence should be "The delivery is paced by the target."
>   Editorial change made.

77)   The fourth sentence should be "This helps to avoid ...".
>   Editorial change made.

78)   In the second paragraph replace "Provision is made for the initiator to specify the manner in which" with "The initiator may optionally control the manner in which".
>   Editorial change made.

79)   In the third paragraph replace "In all target environments, the initiator must be prepared to accept a response" with "The initiator shall accept a response".
>   Editorial change made.

80)   Either delete the second sentence or replace it with "The tap slot architecture should reduce the probability of a tap not being accepted by a target." if the claim is true rather than just more marketing hype.
>   Editorial change made.

81)   In the last sentence delete the first "allowed".
>   Editorial change made.

82)   In the last sentence of the first paragraph of 5.12 delete "It is emphasized that".
>   Editorial change made.

83)   In the second paragraph what does "having indicated to it there is work to be performed on their behalf" mean? An acceptable alternative to making it clear, is to delete the statement.
>   Editorial change made.

84)   The third paragraph adds more confusion than benefit. I suggest deleting it.
>   Editorial change made.

85)   The first sentence of the fourth paragraph is redundant to 5.11. Delete it.
>   Editorial change made.

86)   The second sentence of the next to last paragraph is redundant and confused. Delete it. The last sentence adds no value. Delete it.
>   Editorial change made.

87)   In 5.12.1 I think "relation" should be "relationship".
>   Editorial change made.

88)   In the third paragraph what does "A useful and expected to be common value is 64" mean? Is this a disguised mandatory requirement or a disguised advertisement for a particular vendor?
>   Editorial change made. No vendor being advertised.

89)   Delete "adopted from FCP".
>   Editorial change made.

90)   Assuming much of SBP is important, in 5.12.2 delete "It is important to recognize".
>   Editorial change made.

91)   Change the second sentence of the second paragraph to "The target shall accept an implementation specific, minimum number of taps ...". Having made the statement correct from a standards standpoint what does it mean? To me it means the target is free to accept any old number of taps so why bother saying anything?
>   Editorial change made.

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92)   In the third paragraph delete "It is convenient to use the term tap slot when dealing with the obligations associated with accepting a tap sent in a given command FIFO." Also delete the rest of the paragraph.
>   Editorial change made.

93)   In the last paragraph replace "from" with "in". Also replace "overlap" with "overlapped".
>   Editorial change made.

94)   In 5.12.3 replace "decides to manage" with "manages".
>   Editorial change made.

95)   The second paragraph needs major work to translate it to something for a standard.
>   Editorial change made.

96)   In the third paragraph replace "Observe, the given tap" with "The tap".
>   Editorial change made.

97)   Replace the "The very latest point in time for the target to release a tap slot is when" with "The target shall release the tap slot no later than when".
>   Editorial change made.

98)   Delete the last two sentences of the paragraph.
>   Editorial change made.

99)   Delete the next paragraph.
>   Editorial change made.

100)   Delete the first two sentences of the fifth paragraph and change the remaining sentence to "The target shall provide an explicit ...".
>   Editorial change made.

101)   In the following paragraph combine the second and third sentences to "The notice is given in only one Status block by setting the TSA flag to one."
>   Editorial change made.

102)   Replace "is given permission by the Serial Bus Protocol to" with "may".
>   Comment accepted, editorial change made.

103)   In the next paragraph what does "is the latest time at which the target that the initiator that the tap slot has entered the "available for use" state" mean?
>   Editorial change made.

104)   The next paragraph is too confused to keep.
>   Editorial change made.

105)   What is "TAP SLOTS ALLOCATED FOR USE BY AN INITIATOR:"? Why is it in all caps? Can the rest of the paragraph be put into acceptable style for a standard?
>   Editorial change made. Answer to question -- yes.

106)   In the next paragraph replace "Given that the initiator gets both an identifier and an allocation of tap slots, it is strongly recommended then the initiator decide to be a "good neighbor" and limit its" with "The initiator shall limit its".
>   Editorial change made.

107)   In the last line of that paragraph delete "so as".
>   Editorial change made.

108)   Delete the fourth from last paragraph.
>   Editorial change made.

109)   What is "USE OF TAP SLOTS FROM THE GENERAL POOL OF TAP SLOTS:" and why is it capitalized?
>   Editorial change made.

110)   Delete the first sentence if (109) was not the first sentence.
>   Editorial change made, changes regarding comments (109) and (110) made consistent.

111)   This paragraph should be translated from free form discussion to something appropriate for a standard.
>   Wording improved.

112)   Consider deleting the last paragraph covering one of an infinite number of things that are not requirements.
>   Editorial change made.

113)   Section 5.12.4 and 5.12.5 require major editorial work.
>   Major editorial work expended on subject sections.

114)   In Figure 1 it is not clear what the M_flag is equal to.
>   Diagram fixed.

115)   In the next paragraph replace "a available" with "an available".
>   Editorial change made.

116)   Decide whether "acknowledgment" should be lower case or upper case and make it consistent.
>   Comment accepted.

117)   In the fourth paragraph after Figure 1 delete "Before continuing with Example 1, it should be mentioned that" and "In this spirit, the explanation continues as to command delivery." Also delete "As a major emphasis point,".
>   Editorial change made.

118)   Delete the first two sentences of the third from last paragraph. Having done that decide if the balance of the paragraph should be salvaged.
>   Editorial change made.

119)   In the next paragraph delete "between the situations depicted between the two examples".
>   Editorial change made.

120)   Delete or salvage the last paragraph.
>   Editorial change made.

121)   Change section 6 to "Figure 3 is an illustration".
>   Editorial change made.

122)   In the last sentence of the first paragraph delete the redundant "The illustration shows a single task set;".
>   Editorial change made.

123)   Figure 3 appears to be a block diagram of more than SBP. can also see 1394.
>   Due to other comments, changes made in figure 3. This diagram addresses elements of the
>   interface between IEEE 1394 and SBP.

124)   In the first paragraph of 6.1 what is the definition of "units"?
>   Clarification provided in edited text within SBP.

125)   Figure X should be Figure 4.
>   Fix made.

126)   In 6.1 where does the number of quadlets in the directory entry start? Does it include quadlet one?
>   Comment accepted, text provides clarification. Answer to question -- Original text did state
>   answer, it is the number of quadlets, not including the first quadlet.

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127)   How does the key (12h) indicate that the low order 24 bits of this quadlet contain the vendor ID of the entity defining the architectural interface of this node? What is "the architectural interface"?
>   Clarification provided. reference made to IEEE 1212-1991 standard.

128)   How does the key (D4h) indicate the offset and which item is the offset from?
>   Refer to reply given in number 127.

129)   In the first paragraph after Table 4, the "base address" is which base address?
>   Refer to reply given in number 127.

130)   In the last note replace "may implemented' with "may be implemented".
>   Editorial change made.

131)   In 6.2.1 replace "This tap" with "This FIFO".
>   Editorial change made.

132)   The nomenclature in Table 5, 6, and A-1 do not match the conventions of 4.1.
>   comment accepted.

133)   In the first paragraph after Table 5 replace "must" with "shall".
>   Editorial change made.

134)   In 6.2.2 replace "The initiator is expected to" with "The initiator shall".
>   Editorial change made.

135)   Replace the last sentence of 6.2.3 and 6.2.4 with the equivalent of the last sentence of 6.2.2.
>   Editorial change made.

136)   Replace "This tap" in the first line of 6.3.1 with "This FIFO".
>   Editorial change made.

137)   Repair 6.3.4's "to anasync FIFO based upon existance based on the existance" somehow.
>   Editorial change made.

138)   Also repair "The number of isoch ACA FIFOs available one per stream identifier."
>   Editorial change made.

139)   In 7 replace "as result" with "as a result".
>   Editorial change made.

140)   In the next to last paragraph change "The initiator is expected to" to "The initiator shall" and "can associated with" to "can be associated with".
>   Editorial change made.

141)   Change "definde" in 7.1 to "defined" and run a spelling checker on the document.
>   Changes made.

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142) Some tables use Byte, some Bytes, and some Displacement. Determine which should be used.
> Editorial changes made.

143) What does "The CDS address is the value contained in the address of this CDS field" mean?
> Editorial clarification provided in document.

144) Is there an essential difference between rules 3 and 6?
> Subject rules reworked and consolidated. Subject material relocated to clause 15.1.3.

145) What does "No consideration is give with regard to availability of tap slots from the general pool" mean?
> Comment considered. Text reworked, refer to clause 15.1.3.

146) Is rule 7 "Available means the target considers that it has the resource available to accept a tap" helpful? To me it sounds like available means available.
> Comment accepted. Refer to reply given in number 144.

147) In section 8 a more specific reference than "in this standard" should be given.
> Editorial change made.

148) In the second paragraph of 8 replace "address contained there" with "sense buffer" and "must be" with "is".
> Editorial change made.

149) In the last sentence what is "codes field"? Is it the CDS codes field of Table 15?
> Comment accepted. clarification provided in text.

150) After Table 14 what field does the note apply to?
> comment accepted. clarification provided in text.

151) In the next to last paragraph FIFO should be capitalized.
> Editorial change made.

152) Where is Table x?
> Table 10.
153) Should the description of value 1h in Table 16 be Format specified in Table 14?
> Change made in table 14 and 16.

154) In Table 18 what is a "Unit management CDS"?
> Fixed in document text.

155) Where are the values 1h through 3h of Table 20 defined?
> Comment accepted. Reference made to IEEE 1394.

156) After Table 24 replace "is allowed to modify" with "shall modify". Change "the chain contain the CDS" to "the chain that contains the CDS".
> Editorial change made.

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157)　What are we to learn from the second sentence of the Note?
> 　Comment considered. Proposed change rejected. Note says what it means, L_Flag setting in
> 　SBP CDS determines processing by SBP.

158)　Regarding the "O-flag" in addition to replacing "must' with "shall" how can data over the 1394 be transferred in other than sequential order since it is a serial I/O?
> 　Editorial clarification. All data packets are to be transferred in order. All data packets shall have
> 　monotonically increasing data addresses from logical low address to logical high address.

159)　Where is the scatter / gather function defined?
> 　Clarification provided in text.

160)　For the case where the M-flag is cleared and the link bit is not, shouldn't the additional sense codes be specified?
> 　Comment considered. Proposed change rejected.

161)　Replace "The current CDS marks" with "A CDS with the SCE-flag set marks".
> 　Editorial change made.

162)　Why is the S-flag described out of sequence? In item b change "the data" to "data". Change "This data address" to "The data address".
> 　Editorial change made.

163)　In Table 26 are Bytes 56 through 71 for Login only?
> 　Comment considered. Proposed change rejected.

164)　What are the units of the division?
> 　Answer -- bytes.

165)　In the seventh paragraph after Table 27 replace "must' with "shall".
> 　Editorial change made.

166)　In the next paragraph I appreciate the plug, even if it is spelled with a "k" but doesn't it apply to targets which are not disc drives also?
> 　Editorial change made.

167)　I think the note should be up near the definition of R
.> 　Comment accepted.

168)　The three definitions following Table 28 are shams. "Black is black" does not pass as a definition. If nothing more is to be said delete them.
> 　Comment considered. Proposed change rejected.

169)　The fields noted after Table 29 are not contained in Table 29 so why are they mentioned as not used if they don't exist?
> 　Editorial changes made.

170)　Does Table 31 apply only to isochronous? Should this be mentioned?
> 　Comment considered. Proposed change rejected. Answer to both questions -- No.

171)   It would be clearer to replace "tag value field" with "tag value bytes".
>   Comment considered. Proposed change rejected.

172)   In 10 how much should the fetch exceed 72 bytes by?
>   Comment accepted. Reworked to state shall not exceed.

173)   Where is "transaction time-out time" defined?
>   Answer -- Within IEEE 1394 document. Reference made back to this document.

174)   Replace "rejects a target fetch" with "rejects a target's fetch".
>   Editorial change made.

175)   In the last portion of 11.1 there is a conflict. It is not possible to perform an or statement in order since only one item is performed.
>   Comment accepted. Subject clause rewritten.

176)   In the next to last paragraph of 11.2 where is the "pending acknowledge code" and the "resp_normal rcode" specified?
>   Comment accepted. Fixes made.

177)   In 12 and 13 what does "possibly a write a response packet" mean?
>   Comment accepted. Fixes made.

178)   In 14 what are the protocols in addition to? Change the last paragraph to "Targets shall not respond to SBP ... identifier for use ... identifier for use ...".
>   comment accepted.

179)   In 14.1 delete the extra space in the title or define "p" and "rocedure".
>   Fix made.

180)   Please accept the "an/a prize" and then change "obtains an identifier or a identifier and the addresses of command FIFO" to "obtains an identifier or an identifier and the addresses of the command FIFO". However should address be singular or FIFO plural? Is the address a fixed address?
>   Prize accepted. Fix made. By virtue of accepting prize, will tax status change ?

181)   Change the second paragraph to "obtain an identifier".
>   Editorial change made.

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182) The location of the Async login FIFO should be moved from 14.2.1 to 14.1.1.
> Comment considered. Proposed change rejected.

183) In the next to last paragraph of 14.1.1 if the login is not accomplished how does the target know where to return sense data and status? If the paragraph is correct otherwise, change "protocol, then" to "protocol, and then". These comments also apply to 14.1.2.
> Comment accepted. Answer to question -- In the CDS.

184) In the last paragraph of 14.1.2 what does "using the protocols" mean? Is it something like "taking the waters"?
> Clarification made in text.

185) In 14.2 I presume the Initiator resources should also be released.
> Comment considered. Proposed change rejected. There are no other resources in the target
> associated with login. Target does not release initiator resources in the initiator.

186) Replace "isochronous data transfer on the given stream" with "isochronous data transfer of the given stream". Is it necessary for the first two sentences of the second paragraph to be so redundant?
> Editorial change made.

187) In 14.2.1 I think the initiator identifier should not be released until after the status is returned. Otherwise how is it known who to return it to?
> Editorial change and clarification provided.

188) Add the phrase "without performing another login" to the end of 14.2.1 and 14.2.2.
> Comment accepted.

189) In 14.3 change "request the target assign it" to "request that the target assign it". Change "In the alternative," to "Optionally". Delete "wish to". Change "In either situation, initiator may" to "In either case, the initiator may".
> Editorial change made.

190) Change "optional to " to "optional for" and "mandatory to" to "mandatory for". In the next to last paragraph the first sentence states tap slot allocation is mandatory for all targets but the third states it is only mandatory for targets that are supporting asynch transfer. If the first sentence is correct reduce the paragraph to only the first sentence. If the first sentence is wrong correct it and reduce the redundancy it the rest of the sentences and convert them to "standard" language.
> Editorial change made.

191) In the last paragraph change "must" to "shall". Is it intentional that initiators that don't request allocation of tap slots can hog all tap slots?
> Comment accepted. Editorial change made. Answer to question -- No.

192) In 14.4. replace "at any time thereafter" with "later".
> Comment accepted.

193) In the second sentence delete "at the target". Change "In the alternative," to "Optionally". Delete "wish to gain". In the second paragraph delete "one and".
> Editorial change made.

194) In the next to last paragraph change "in the AE sense length" to "if the AE sense length".
> Editorial change made.

195) What takes place if the AE sense length is greater than zero but less than required?
> Editorial clarification provided. Answer to question -- truncated data sent.

196) Shouldn't there be a section for a Sign-out procedure?
> Editorial change made. Answer to question -- Yes.

197) In the scope of Annex A replace "carries with it" with "has".
> Comment accepted.

198) In the last paragraph of A.1 the first sentence states the ROM is an example. The second sentence states that again and adds that it is not definitive. What does this mean? Is the example wrong? Why not delete the second sentence?
> Example is correct. Clarifications provided in reworked text.

199) In the third sentence replace "ROM must be parsed for pointers" with "ROM is parsed for pointers". ("Must be" is as objectionable in an informative annex as is "shall" even if it is not correct standards language.)
> Comment accepted.

200) Adjust the column sizes of Table A-1 to avoid the odd word wrap in the first column.
> Fixed.

201) In addition to not following the hex convention, Table A-1 does not follow the binary convention of 4.1.
> Editorial change made.

202) In the table and in A.3 there appears to be room for "Capability" rather than "Capab.".
> Comment accepted.

203) It is nice to know that the "lost" bit has been found but probably "last" was intended.
> comment accepted.

204) In the table and in A.3 there appears to be room for "unit directory offset" rather than "unit directory off".
> Comment accepted.

205) In the unique_id_hi delete "is".
> Editorial change made.

206)   The description of async login FIFO key states in effect that the lack of the async login FIFO entry in the unit dependant directory indicates that the target does not implement all mandatory elements of the async data transfer protocol. Is this allowed? An analogous comment applies to the isoch login FIFO key.
>   Clarification provided in text. Isochronous transfer is an IEEE 1394 option. Asynchronous data
>   transfer support is a required element of IEEE 1394.

207)   In A.7 replace "this FIFO" with "the Async FIFO".
>   Comment accepted.

208)   The SCSI-3 queuing model is not an appropriate reference several places in Annex B. It should cite SAM.
>   Comment accepted.

209)   What about multiple LUNs with regard to linked commands?
>   Comment accepted.

210)   Delete "As a further restriction". Delete both "shalls" in the second full paragraph and change the second "take" to "takes".
>   Comment accepted.

211)   ACA is not a queue type. It is a task attribute.
>   Comment accepted.

212)   In the last paragraph replace "accept a modestly reduced level of control over the time sequence of processing" with "accept reduced control of the processing sequence".
>   Comment accepted.

213)   In B.1 replace "If there exists a sequence" with "If a sequence" and "commands which are to be completed" with "commands to be completed". Delete "interested in the situation".
>   Comment accepted.

214)   In the second paragraph change "The first alternative is probably best suited to the case in which only one initiator is relevant to the situation." with "The first alterative is best suited to single initiator task sets."
>   comment accepted.

215)   Should "in front" be replaced with "at a lower address" or "at a higher address"?
>   Comment accepted. Answer -- lower address.

216)   In the third paragraph delete "This is to say, the initiator constructing the given chain has it within its own ability to control fetch policy by the target so that the given chain is processed in the manner considered appropriate by that initiator."
>   Comment accepted.

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217)   In the last paragraph delete "given". Make "relative to commands" singular unless "command blocks" in this case should be "CDS". Delete "interested". Move "time" from "sequence" to "stamps". Delete "desired relative". Delete "and therefore". Delete "in the desired order" after "stamps". The net result is "Taps for these several chains are sent in an appropriate sequence such that the order of arrival (implied time stamp) is achieved at the target."
>   comments accepted.

218)   The first paragraph of B.2 is confusing. The next two need to be worked on.
>   Comments accepted.

219)   In B.3 delete "subject". Delete "value" twice. Better yet reduce the paragraph to just the first sentence. If the other sentences are not deleted Change "For this final" to "The final" and "must indicate" to "indicates". But why are the linking requirements being repeated here?
>   Editorial comment accepted.

220)   Unless this Annex should be made Normative, in the Scope replace "necessary to implement" with "on". Make "formats" singular or change the related section name.
>   Comment accepted.

221)   In C.2 change "some terms which are used freely throughout this document" to "special terms used in this Annex."
>   Text reworked.

222)   Does 1394 have "targets"?
>   IEEE 1394 has nodes. In SBP context, a node may undertake the role of an initiator or a target.

223)   Should "sy" be upper case?
>   Per IEEE 1394 conventions answer to question is -- No.

Subject annex which is the object of comments 224 through 250 is being reworked
As such, responses to each comment is to be given at a later time.

224)   Change the paragraph after Table C-1 from "that listener treats such a packet as an error" to "the listener declares an error." In the e.g. statement should "halt" be "report and stop"?

225)   In the next paragraph should it be "synchPeriod field" or "synchPoint field"? (The Normative Annex uses neither term.)

226)   In the last paragraph in two places should it be "this standard" or "this Annex"?

227)   I think the last paragraph of C.4.1 and the third paragraph plus two bullets of C.4.2 should be moved into C.4. ahead of C.4.1. Adjust "above" when this is done.

228)   Why aren't potential talker errors included?

229)   Three paragraphs ahead of Table C-2 change "Notice that a stream gap" to "A stream gap".

230)   Unless the Annex is changed to Normative, change the line before table C-2 from "defined" to "shown".

231)   What are the units of the seconds count?

232)   In C.4.3 what constitutes execution? If the OK to continue bit is a one, when does the "execution" resume?

233)   Why is STREAM CONTROL a normative Annex rather than included in the body of the standard?

234)   Change "must have already obtained" to "shall have obtained".

235)   In the third paragraph change "contents" to "Operation Code" and "determine" to "designate" or "specify".

236)   Where are the Operation Codes and Control Field codes specified?

237)   Change the fourth paragraph to "talker and the command is pause, the target shall wait for".

238)   Change the fifth paragraph to "If the function code is start, the target shall either ...".

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239)   Where is the "identifier field"?

240)   What are the units of the synch period field and the seconds count?

241)   In the paragraph before Table D-2 delete "the following table and described in".
242)   Should there be definitions for abort handling?
243)   It appears the two paragraphs after the table should have hex notation.

244)   The parenthetical statement under the table seems wrong since this is the normative section. Where are they defined elsewhere?

245)   For the stream event field what about the twelve other codes?

246)   For the Action field what about the thirteen other codes?

247)   Do all devices have to support a byte offset of 2 to the fifteenth?

248)   Why is only the target required to set the reserved field to zero?

249)   In the last paragraph change "the target shall treat this as an error" to "the target shall declare an error". Feel free to choose other than "declare" but don't make it a non-error treated as an error.

250)   Error handling is promised to be in a later section of this appendix (SIC) in the last line of the Annex. Who is planning to make good later on this promise?
Return back to comments for which responses are given.

251)   Change the title of Annex E to "Read examples".
>   Comment accepted.

252)   Should the latter portion of the first paragraph be "optional split transactions are not recommended"? Why has the option been included if it degrades performance?
>   Option recognizes need for deferral of response given context of responder capabilities in given
>   implementations or relative to particular requests requiring extensive processing.

253)   Replace the second and third paragraph with "Although SBP is defined to facilitate commonality with other SCSI transport mechanisms, the remaining sections include some additions required to support the 1394 transport."
>   Comment accepted.

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