

Accredited Standards Committee  
X3, Information Processing Systems

Doc. No.: X3T10/94-140r0  
Date: March 1994  
Project:  
Ref. Doc.:  
Reply to: W. Dallas

To: Membership of X3T10  
From: Bill Dallas  
Subject: Public Review Comments on CAM

Below are the comments I received from Ralph Weber (Digital Equipment Corp) and Gary Porter (Ancot Corp.). I merged the comments together due to the fact that they related to same subjects in the document.

Format is the following:

Commentator ( name )  
Comment Number {x} Technical or Editorial {E or T} Clause { X P S }.  
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Response:

\*\*\*\*\* Clause 11 comments \*\*\*\*\*

(Ralph Weber)  
{001}{E}{11 P5 S2}----- {Original text} In this mode, when the adapter is selected and the XPT/SIM receives an Identify message for a LUN that has registered as a Host Target LUN.

{Comments}  
This is not a sentence. It might be an introductory phrase for the next sentence. If the period were changed to a comma, the resulting sentence would read:  
In this mode, when the adapter is selected and the XPT/SIM receives an Identify message for a LUN that has registered as a Host Target LUN, the SIM/HBA may accept any target mode command, based on conditions specified in this document.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)  
{002}{E}{11 P6 S4}----- {Original text} An example of this is the synchronous data transfer message.

{Comments}  
There is no synchronous data transfer message. The message is the synchronous data transfer request message. The sentence should be corrected to read:  
An example of this is the synchronous data transfer request message.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)  
{003}{E}{11 P6 2<sup>nd</sup> to the last sentence}----- {Original text} On receipt of a supported target message that is not handled transparently, the SIM/HBA shall immediately notify the Host Target Mode peripheral driver by the mechanisms provided by the IMMEDIATE NOTIFY CCB.

**{Comments}**

“By” is used incorrectly in the phrase, “by the mechanisms”. A better word would be “using.” The corrected sentence would read:

On receipt of a supported target message that is not handled transparently, the SIM/HBA shall immediately notify the Host Target Mode peripheral driver using the mechanisms provided by the IMMEDIATE NOTIFY CCB.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{004}{E}{11 P7 S1}----- {Original text} In summary, Host Target Mode peripheral drivers can be called back multiple times for a command received by the SIM/HBA, once for each command required and an additional number depending on the command and host the Host Target Mode peripheral driver has been implemented.

{Comments}

The phrase, “and host the Host Target Mode peripheral driver has been implemented” makes no sense. The first “host” should be changed to “how.”

The corrected sentence would read:

In summary, Host Target Mode peripheral drivers can be called back multiple times for a command received by the SIM/HBA, once for each command required and an additional number depending on the command and how the Host Target Mode peripheral driver has been implemented.

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**Response: Accepted**

(Ralph Weber)

**{005}{T}{11 P9}**-----

{No original text present}

{Comments}

My reading of the Phase Cognizant description in clause 11.1 and in the last two paragraphs of clause 11 suggests that Phase Cognizant mode does NOT support tagged command queuing. I believe that a note to this effect is required in the summary paragraph describing Phase Cognizant operation.

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**Response: Accepted**

(Ralph Weber)

{006}{E}{11.2 P1 S2}----- {Original text} The specified LUN is the one enabled for selection, and if the HBA is to respond as an additional LUN, another Enable LUN is required.

{Comments}

Please breakup this run-on sentence. The corrected text would read:

The specified LUN is the one enabled for selection. If the HBA is to respond as an additional LUN, another Enable LUN is required.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{007}{T}{11.2 P5 S2}----- {Original text} While the request is being held, the CAM Status field of the Target CCB, shall be set to Request in Progress.

{Comments}

The phrase “while the request is being held” is unclear in several ways. What is “the request?” What does “being held” mean? I believe that the correct answers to these questions are as follows. The “request” is the ENABLE

LUN CCB. “Being held” is equivalent to the LUN being enabled for Phase Cognizant mode operation. If both of my guesses are correct, then the sentence should be clarified to read as shown at the end of this comment. The phrase “the CAM Status field of the Target CCB,” has two problems. First, there can be more than one Target CCB. So, the sentence’s inference that the one Target CCB is affected is wrong. Second, the comma at the end of the phrase is inappropriate.

If all the above comments are corrected, the sentence should read:

While the LUN is enabled for Phase Cognizant mode operation, the CAM Status field of each Target CCB shall be set to Request in Progress.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{008}{E}{11.2 P7 Bullet3}-----

{Original text}

- CAM Flags shall set the Target CCB Available as needed

{Comments}

There probably is a missing “be”. Certainly, I don’t see how the CAM Flags can be an active agent in an English sentence.

I believe that the corrected bullet should read:

- CAM Flags shall be set the Target CCB Available as needed

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**Response: Accepted**

(Ralph Weber)

{009}{T}{11.2 P9}-----

{No original text present}

{Comments}

I believe that several items have been omitted from the list of things that must be setup in the Target CCBs delivered as part of the Phase Cognizant mode ENABLE LUN CCB. If I am correct, then each of these points should be added to the existing bulleted list.

I believe that the CCB Available CAM Flag must be set. This is necessary to make the scanning algorithm described in paragraph 7 of Clause 11.2.1 work.

I believe that the Timeout Value field must be set to infinity. This is suggested by the statement in the last paragraph of Clause 11.2.1.

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**Response: Accepted**

(Ralph Weber)

{010}{E}{11.2 P9 Bullet1}-----

{Original text}

- CAM Flag information including AutoDisconnect and AutoSave.

{Comments}

The field is “CAM Flags” not “CAM Flag.” The sentence should be corrected to read:

- CAM Flags information including AutoDisconnect and AutoSave.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{011}{T}{11.2 P9 Bullet3}-----

{Original text}

- The Group 6 and 7 Vendor Unique CDB Length fields contain the number of bytes a target application expects to receive for the vendor unique command set. The previous item shall go hand-in-hand with this requirement. The Group 6 and 7 Vendor Unique CDB Length fields shall be retained for each LUN enabled.

{Comments}

I do not see how this information is important in each Target CCB. This important copy of this information should be in the ENABLE LUN CCB. So, putting copies of this data in each Target CCB is a mistake. It should be removed.

\*\*\*\*\*

Reponse:Rejected: Enable LUN are immediate in nature. The SIM must keep a copy of any data in the CCB it needs.

(Ralph Weber)

{012}{T}{11.2 P12 S1}----- {Original text} If a LUN is disabled, after having been enabled, then the Inquiry data and the Vendor Unique CDB Length data shall be cleared.

{Comments}

Nothing up to this point in the clause describes where the Inquiry data mentioned in the sentence above came from. Also, nothing says who is maintaining this Inquiry data, but I suspect that it is the SIM/HBA. I don't quite know what to fix. The easiest thing would be deleting this paragraph, but adding a better description of the Inquiry data would be a better choice.

\*\*\*\*\*

Semi accepted: Added sentence See Clause 11.2.1 for additional information regarding Inquiry data.

(Ralph Weber)

{014}{E}{11.2 P14 S1}----- {Original text} This function shall return non-zero CAM Status:

{Comments}

Which function? How about clarifying this sentence to read:

The Enable LUN function shall return non-zero CAM Status:

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**Response: Accepted**

(Ralph Weber)

{015}{E}{11.2 P15 Bullet6}-----

{Original text}

- CAM Status of Function Not Implemented indicates that Target Mode is not supported by this implementation of CAM.

{Comments}

This bullet needs an upgrade based on the addition of Host Target Mode operation. Change the bullet to read:

- CAM Status of Function Not Implemented indicates that Phase Cognizant Target Mode is not supported by this implementation of CAM.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{016}{E}{11.2.1 P1 S2}----- {Original text} The XPT/SIM response to these messages shall be as defined in X3.131-1991.

{Comments}

The specification number for SCSI-2 should be in only one place in the standard. It should be in the Normative References clause. Change this sentence to use SCSI-2. It should read:

The XPT/SIM response to these messages shall be as defined in SCSI-2.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{017}{E}{11.2.1 P7 S2}----- {Original text} If none of them have the Target CCB Available bit set, the XPT/SIM shall request the SCSI CDB and post BSY status.

{Comments}

I think that requesting the CDB and posting a BUSY status are odd bed-fellows. I think that the CDB should be rejected, not requested. Also, the correct SCSI-2 status name is BUSY not BSY. Applying these two corrections, the sentence will read:

If none of them have the Target CCB Available bit set, the XPT/SIM shall reject the SCSI CDB and post BUSY status.

(Gary Porter)

{017} It is a common practice in Target implementations to ask for the entire CDB (by handshaking with REQ assertions), even when BUSY. I think the original wording is fine except for the name of the Status code. (BUSY, not BSY).

\*\*\*\*\*

**Response: Accepted Gary Porters rejected Ralph Webers**

(Ralph Weber)

{018}{E}{11.2.1 P9 S1}----- {Original text} If a target application sets Target Available upon recognizing that a CDB has been received and uses a different CCB to perform the data transfer, there is a lower likelihood of a BSY response to the initiator when a CCB is not available.

{Comments}

The correct SCSI-2 status name is BUSY not BSY. The corrected sentence should read:

If a target application sets Target Available upon recognizing that a CDB has been received and uses a different CCB to perform the data transfer, there is a lower likelihood of a BUSY response to the initiator when a CCB is not available.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{019}{E}{11.2.1 P14 S1}----- {Original text} If the Group Code of the Operation Code of the Command Block is Vendor Unique the XPT/SIM shall ensure that only the indicated number of command bytes are received.

{Comments}

The structure is the Command Data Block (CDB), not the Command Block. The sentence should be corrected to read:

If the Group Code of the Operation Code of the CDB is Vendor Unique the XPT/SIM shall ensure that only the indicated number of command bytes are received.

(Gary Porter)

**{019} The structure is the Command Descriptor Block (CDB).**

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**Response: Accepted both comments**

(Ralph Weber)

{020}{T}{11.2.1 P14}----- {Original text, as revised by comment above}

If the Group Code of the Operation Code of the CDB is Vendor Unique the XPT/SIM shall ensure that only the indicated number of command bytes are received. If the required number of bytes are exceeded or not transferred, then the XPT/SIM shall return a status of Check Condition, the Sense Key in the Sense Buffer shall be set to Illegal Request, and the Additional Sense Key and Qualifier shall be set to Command Phase Error.

{Comments}

The entire concept embodied in this paragraph is in conflict with SCSI target mode operation. As the target, the XPT/SIM defines exactly how many CDB bytes are moved. The XPT/SIM changes the bus into command phase. It accepts however many bytes it wants. Then, it changes the bus out of command phase. Under these rules of operation, the phase cognizant target mode XPT/SIM cannot know whether the initiator tries to send fewer or more CDB bytes than it expects.

I will propose the following replacement paragraph:

If the Group Code of the Operation Code of the CDB is Vendor Unique, the XPT/SIM shall transfer the number of CDB bytes shown in the ENABLE LUN CCB for this LUN. The Group Code in the incoming CDB (either 6 or 7) shall select the Vendor Unique CDB size from the ENABLE LUN CCB. If the selected CDB size (in the ENABLE LUN CCB) is zero, the XPT/SIM shall only transfer the CDB Operation Code.

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**Response: Accepted**

(Ralph Weber)

{021}{E}{11.2.1 P15 S2}----- {Original text} The subsequent invocation of the Execute Target I/O function shall perform an automatic reselect when it is invoked.

{Comments}

This sentence is direct from our Department of Redundancy Department. Drop the “when it is invoked” so that the sentence reads:

The subsequent invocation of the Execute Target I/O function shall perform an automatic reselect.

\*\*\*\*\*

Response: Accepted but I missed it in the document.

(Ralph Weber)

{022}{T}{11.2.2 P2&P5 S1}----- {Original text} If the Status Valid bit is set, the XPT shall send the status byte specified in the SCSI Status field to the current initiator and then send the Command Complete Message.

The XPT/SIM shall be able to execute all the phases indicated by the Buffer Valid bits of the CAM Flags, within a single invocation of the Execute Target I/O i.e. if more than one bit is set, the order of execution of the phases shall be data, status, and message.

{Comments}

I realize that the sending a COMMAND COMPLETE message after sending SCSI Status is a significant convenience feature. However, I think it dilutes the usefulness of Phase Cognizant mode.

First, the phase cognizant peripheral driver cannot set both the Status Valid and Message Valid bits. If Status Valid is set, the COMMAND COMPLETE message is going to terminate the I\_T\_L\_x nexus. So, sending any more message bytes after that is nonsense.

Second, this construct prohibits peripheral drivers from implementing linked commands in phase cognizant mode. Linked commands require messages other than COMMAND COMPLETE after the SCSI Status, particularly LINKED COMMAND COMPLETE or LINKED COMMAND COMPLETE (WITH FLAG). So sending COMMAND COMPLETE after the status phase is wrong for linked commands.

Therefore, I propose that the standard be changed to just send the status byte when Status Valid is set. I recognize that this will force phase cognizant peripheral drivers to set both Status Valid and Message Valid and provide a COMMAND COMPLETE message byte. But, it a more technically correct standards definition.

(Gary Porter)

{022} Linked commands have always been a problem for Targets. The main source of the problem is that the Target doesn't even know a command is part of a linked sequence until the first CDB has been interpreted. I see no

way to specify ahead of time that a command is EXPECTED to be part of a linked command sequence. The best solution I can think of is to report to the upper layer driver that a linked command CDB has been received, and do a disconnect before sending Status and the appropriate message. The driver can allocate resources for follow-on CDB, then the SIM/XPT can send Status, Linked Command Complete (maybe With Flag), and go to Command Phase for the next (linked) command.

Another option is just to reject all linked commands with CHECK CONDITION Status as an illegal request.

\*\*\*\*\*

Response: This will be resolved.

(Ralph Weber)

{023}{T}{11.2.3 Table 22}----- {Original text} Number of Scatter/Gather Entries in the EXECUTE TARGET I/O CCB.

{Comments}

I do not understand why we do NOT use the number of scatter/gather entries field in the EXECUTE TARGET I/O CCB. Surely, this field is needed to describe any data that might be transferred in a data in or out phase.

The Dir column should contain an O for the Number of Scatter/Gather Entries field.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{024}{E}{11.3.2 P1 S6}----- {Original text} For notification message handling the SIM/HBA will also need to maintain certain state information about the message, but how that is accomplished is left to the discretion of the SIM/HBA implementer.

{Comments}

There is a requirement in this sentence that is not identified with the magic word, “shall.” Change the sentence to read:

For notification message handling the SIM/HBA shall maintain certain state information about the message, but how that is accomplished is left to the discretion of the SIM/HBA implementer.

(Gary Porter)

{024} I think the proper terminology for the discretion of the implementor is “implementation dependent”, so the sentence should read :

For notification message handling, the SIM/HBA shall maintain, in an implementation dependent manner, certain state information about the message.

\*\*\*\*\*

Response: Accepted Ralph’s reads better.

(Ralph Weber)

{025}{E}{11.3.3 P2 S2}----- {Original text} The IMMEDIATE NOTIFY CCB contains a unique sequence identifier for a Host Target Mode LUN.

{Comments}

There is a requirement in this sentence that is not identified with the magic word, “shall.” Change the sentence to read:

The IMMEDIATE NOTIFY CCB shall contain a unique sequence identifier for a Host Target Mode LUN.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{026}{E}{11.3.3 P3 BulletA}----- {Original text} Any processing needed to comply with this specification and the SCSI 2 specification.

{Comments}

It’s “SCSI-2” not “SCSI 2”. Change the sentence to read:

Any processing needed to comply with this specification and the SCSI-2 specification.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{027}{E}{11.3.3 P3 BulletB}----- {Original text} Issue a NOTIFY ACKNOWLEDGE CCB with the Sequence Identifier field set to the value from Sequence Identifier field of the IMMEDIATE NOTIFY CCB for this event/message.

{Comments}

The phrase “this event/message” is not specific. Change the sentence to read: Issue a NOTIFY ACKNOWLEDGE CCB with the Sequence Identifier field set to the value from Sequence Identifier field of the IMMEDIATE NOTIFY CCB for the event/message being processed.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{028}{E}{11.3.3 P4 S1}----- {Original text} It is a requirement that there is a one for one correspondence between the Immediate Notify and the Notify Acknowledgement from the Host Target Mode peripheral driver.

{Comments}

There is a requirement in this sentence that is not identified with the magic word, “shall.” Change the sentence to read:

There shall be a one for one correspondence between the Immediate Notify and the Notify Acknowledgement from the Host Target Mode peripheral driver.

(Gary Porter)

{028} “one-to-one”, please. This is a compound modifier of the term “correspondence”.

\*\*\*\*\*

Response: Accepted both.

(Ralph Weber)

{029}{E}{11.3.3 P5 S2}----- {Original text} There shall not be two sequence identifiers in use at the same time for a Host Target Mode LUN.

{Comments}

This sentence does not clearly state that concurrent identical sequence identifiers are prohibited. Change the sentence to read:

There shall not be two identical sequence identifiers in use at the same time for a Host Target Mode LUN.

(Gary Porter)

**{029} This is an awkward construct. I think it should read :**

A Host Target Mode LUN shall have no more than one sequence identifier in use at any time.

\*\*\*\*\*

Response: Accepted Ralph’s there can be multiple sequence identifiers in use at any one time but they must unique.

(Ralph Weber)

{030}{E}{11.3.3 P2 S3}----- {Original text} The words “in use” for the sequence identifiers shall mean from peripheral driver callback to Notify Acknowledgement from the peripheral driver.

{Comments}

The time aspect of this statement is not clearly spelled out. Change the sentence to read:

The words “in use” for the sequence identifiers shall mean the time from peripheral driver callback to Notify Acknowledgement from the peripheral driver.

(Gary Porter)



{030} Change this to read:  
 A sequence identifier is “in use” from the time peripheral driver  
 callback is invoked until the receipt of Notify Acknowledgement from  
 \*\*\*\*\*

### Response: Accepted Gary’s

(Ralph Weber)  
 {031}{E}{11.3.3 P8 S1}----- {Original text} The order in which the Host  
 Target Mode peripheral driver is notified and when the SIM/HBA releases the SCSI bus to a Bus Free state is not  
 specified.  
 {Comments}  
 I just want to carve a few words out of this sentence for simplicity.  
 Try this:  
 The ordering Host Target Mode peripheral driver notification and the SIM/HBA release of the SCSI bus to a Bus  
 Free state is not specified.  
 (Gary Porter)  
 {031} Make it “The ordering of Host ...” and I’ll be happier.  
 \*\*\*\*\*

### Response: Accepted both

(Ralph Weber)  
 {032}{E}{11.3.3 P8 S2}----- {Original text} The ordering of the Bus Free  
 and callback in Section 11.3.3.1 is to show the required steps.  
 {Comments}  
 Since the purpose is the define away the implied ordering of work in clause 11.3.3.1, I would like to avoid the word  
 “ordering.” Also, we might as well fix the non-ISO terminology, “section.” How about:  
 The listing of the Bus Free and callback in clause 11.3.3.1 is to show the required steps.  
 (Gary Porter)  
 {032} Make it :  
 The change to Bus Free phase and the peripheral driver callback in clause 11.3.3.1 may occur in either order, but  
 both steps are required.  
 \*\*\*\*\*

### Response: Accepted Gary’s

(Ralph Weber)  
**~~{033}{E}{11.3.3 P8}~~**-----  
 {No original text present}  
 {Comments}  
 With all of this discussion of how the ordering of listed steps is not important, I think a sentence about how it is  
 important should be added.  
 Add the following sentence at the end of paragraph 8:  
 In all other cases, the order in which clause 11.3.3.1 lists operations is the order in which those operations shall be  
 performed.  
 \*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{034}{E}{11.3.3 P9 S3}----- {Original text} I.E the first Extended message argument byte received after the Extended message code shall be placed into the Message Arguments array[0] field.

{Comments}

Eliminate the extraneous eight characters at the beginning of this sentence so that it reads:

The first Extended message argument byte received after the Extended message code shall be placed into the Message Arguments array[0] field.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{035}{E}{11.3.3 P10 S1&2}----- {Original text} For the SCSI bus ABORT and CLEAR QUEUE messages, the order in which the CCBs are returned to the Host Target Mode peripheral driver and the IMMEDIATE NOTIFY CCB callback is done to the driver is specified. The order shall be as follows:

{Comments}

The messages are SCSI messages, not SCSI bus messages. So, drop the word “bus” at the beginning of the first sentence. The phrase “is specified” is redundant. Of course the order is specified. It’s present in the standard.

Cleanup these two sentences to read:

For the SCSI ABORT and CLEAR QUEUE messages, the order in which the CCBs are returned to the Host Target Mode peripheral driver and the IMMEDIATE NOTIFY CCB callback is done to the driver shall be as follows:

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{036}{E}{11.3.3.1.1 P1 S2}----- {Original text} These events are specified in the SCSI 2 specification.

{Comments}

It’s “SCSI-2” not “SCSI 2”. Change the sentence to read:

These events are specified in the SCSI-2 specification.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{037}{E}{11.3.3.1.2.1 P2 BulletE}----- {Original text} Set the IMMEDIATE NOTIFY CCB Message Code field to the ABORT Message code ( 06h ).

{Comments}

There should be no hardcoded numeric values in the standards definition. (Or, everything that has an associated numeric value should show that value at every reference site. I think deleting the existing numeric values is easier.) Change the sentence to delete the numeric value and read:

Set the IMMEDIATE NOTIFY CCB Message Code field to the ABORT Message code.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{038}{E}{11.3.3.1.2.1 P2 BulletF}----- {Original text} Set the CAM status of all CONTINUE TARGET I/O CCBs for this I\_T\_L nexus shall have the CAM status set to Request Aborted by Host and shall be returned to the Host Target Mode peripheral driver by the CONTINUE TARGET I/O CCB callback mechanism.

{Comments}

This sentence has two verbs. Deleting the first verb is the easiest fix.

So, the corrected sentence would read:

The CAM status of all CONTINUE TARGET I/O CCBs for this I\_T\_L nexus shall have the CAM status set to Request Aborted by Host and shall be returned to the Host Target Mode peripheral driver by the CONTINUE TARGET I/O CCB callback mechanism.

(Gary Porter)

{038} I think it should read:

All CONTINUE TARGET I/O CCBs for this I\_T\_L nexus shall have the CAM status set to Request Aborted by Host. This status shall be returned to the Host Target Mode peripheral driver using the CONTINUE TARGET I/O CCB callback mechanism.

\*\*\*\*\*

### Response: Accepted Gary's

(Ralph Weber)

{039}{E}{11.3.3.1.2.1 P2 BulletG}----- {Original text} Set the CAM status of all CONTINUE TARGET I/O CCBs for this I\_T\_L nexus shall have the CAM status set to Request Aborted by Host and shall be returned to the Host Target Mode peripheral driver by the CONTINUE TARGET I/O CCB callback mechanism.

{Comments}

This sentence has two verbs. Deleting the first verb is the easiest fix.

So, the corrected sentence would read:

The CAM status of all CONTINUE TARGET I/O CCBs for this I\_T\_L nexus shall have the CAM status set to Request Aborted by Host and shall be returned to the Host Target Mode peripheral driver by the CONTINUE TARGET I/O CCB callback mechanism.

(Gary Porter)

{039} see {038} above (or maybe Ralph's comment {040}, not duplicated here).

\*\*\*\*\*

### Response: See 40

(Ralph Weber)

### {040}{T}{11.3.3.1.2.1 P2 BulletsF&G}-----

{Original text, set comments 38 and 39}

{Comments}

Those of you who looked carefully at the previous two comments will notice that the sentences in both bullets read exactly the same. I think that this is a cut&paste problem. Probably one of the two bullets should cover ACCEPT TARGET I/O CCBs. I am not sure if the ordering CONTINUE TARGET I/O CCB processing is important with respect to processing of ACCEPT TARGET I/O CCBs. If my assumption about the cut&paste problem and ACCEPT TARGET I/O is incorrect, then one of the two bullets should be deleted.

\*\*\*\*\*

### Response: Deleted

(Ralph Weber)

{041}{E}{11.3.3.1.3 P1 S1}----- {Original text} Optional messages that are handled by the SIM/HBA with or without notification to the corresponding Host Target Mode peripheral driver.

{Comments}

This is not a sentence. The following change makes it a sentence:

This clause describes optional messages that are handled by the SIM/HBA with or without notification to the corresponding Host Target Mode peripheral driver.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

**{042}{T}{11.3.3.1.3.2 P1}**-----

{No original text present}

{Comments}

Based on the first sentence of clause 11.3.3.1.3.3, I believe that the following sentence must be added to the beginning of clause 11.3.3.1.3.2:

The ABORT TAG message shall be supported if Tagged Queue Operation is supported.

\*\*\*\*\*

### Response: Accepted modified

(Ralph Weber)

**{043}{E}{11.3.3.1.3.2 P2 BulletD}**----- {Original text} Set the IMMEDIATE NOTIFY CCB Message Code field to the ABORT TAG Message code ( 0Dh ).

{Comments}

Do not include numeric values in the standards text. Change this sentence to read:

Set the IMMEDIATE NOTIFY CCB Message Code field to the ABORT TAG Message code.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

**{044}{E}{11.3.3.1.3.3 P1 S1}**----- {Original text} The CLEAR QUEUE message shall be supported if Tagged Queue Operation.

{Comments}

The “if” clause is incomplete. If Tagged Queue Operation what? Correct this sentence to read:

The CLEAR QUEUE message shall be supported if Tagged Queue Operation is supported.

\*\*\*\*\*

### Response: Accepted modified

(Ralph Weber)

**{045}{E}{11.3.3.1.3.3 P2 BulletD}**----- {Original text} Set the IMMEDIATE NOTIFY CCB Message Code field to the CLEAR QUEUE Message code ( 0Eh ).

{Comments}

Do not include numeric values in the standards text. Change this sentence to read:

Set the IMMEDIATE NOTIFY CCB Message Code field to the CLEAR QUEUE Message code.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

**{046}{E}{11.3.3.1.3.3 P2 BulletF}**----- {Original text} All CONTINUE TARGET I/O CCBs that the SIM/HBA owns for this LUN, shall have the CAM status set to Request Aborted by Host and shall be returned to the Host Target Mode peripheral driver by the CONTINUE TARGET I/O CCB callback mechanism.Refer to the SCSI 2 specification Section 5.6.4 for any further clarification.

{Comments}

First, clean this mess up by adding a space (or two) after the period that ends the first sentence. Second, it's "SCSI-2" not "SCSI 2". You might as well change "section" to "clause" too. Change the sentences to read: All CONTINUE TARGET I/O CCBs that the SIM/HBA owns for this LUN, shall have the CAM status set to Request Aborted by Host and shall be returned to the Host Target Mode peripheral driver by the CONTINUE TARGET I/O CCB callback mechanism. Refer to the SCSI-2 specification Clause 5.6.4 for any further clarification.

(Gary Porter)

046} I don't understand why the words "that the SIM/HBA owns" are there. The SIM/HBA has no knowledge of any other CCBs. I think we can dispense with this phrase.

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**Response: Accepted both**

(Ralph Weber)

{047}{E}{11.3.3.1.3.4 P1 S1}----- {Original text} The handling of these messages are described in detail in Section 11.3.8.

{Comments}

The word "messages" is the object preposition "of". As such, it cannot be the subject of the sentence and has no effect of the verb "are". The word "handling" is the subject of the sentence and forces the verb to be singular (is), not the plural (are). Also change the word "Section" to "Clause", because this is an ISO document. Thus, the sentence should read:

The handling of these messages is described in detail in Clause 11.3.8.

(Gary Porter)

{047} I think it is even clearer if worded:

Message handling is described ...

\*\*\*\*\*

**Response: Accepted both**

(Ralph Weber)

{048}{E}{11.3.3.1.3.5 P1 S1}----- {Original text} When the supported CLEAR QUEUE message is received for an enabled Host Target Mode LUN by the SIM/HBA, the SIM/HBA shall:

{Comments}

Heading for this clause is "Terminate I/O Process message." So, I think this sentence contains a cut&paste error.

The sentence should read:

When the supported TERMINATE I/O PROCESS message is received for an enabled Host Target Mode LUN by the SIM/HBA, the SIM/HBA shall:

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{049}{E}{11.3.3.1.3.5 P2 BulletG}----- {Original text} Set the IMMEDIATE NOTIFY CCB Message Code field to the TERMINATE I/O PROCESS Message code (11h).

{Comments}

Do not include numeric values in the standards text. Change this sentence to read:

Set the IMMEDIATE NOTIFY CCB Message Code field to the TERMINATE I/O PROCESS Message code.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{050}{E}{11.3.3.1.3.5 P2 BulletJ}----- {Original text} If the Host Target Mode peripheral driver has other CONTINUE TARGET I/O CCBs associated with this terminated I/O process, the Host Target Mode peripheral driver shall issue an ABORT CCB for each one.

{Comments}

The list in which this bullet appears is headed by, “the SIM/HBA shall:” Yet, the work that this bullet describes is required from the peripheral driver, not from the SIM/HBA. It is unwise to bury a required peripheral driver function in the middle of a SIM/HBA action list. Developers will miss it.

This list, and several others like it, have a similar problem. Specifically, the last bullet in the list places Contingent Allegiance handling requirements on the peripheral driver. Somehow, I find the Contingent Allegiance statement less egregious, both because it implies something that the SIM/HBA does not do and because it ends the list.

I propose two remedies for this problem. The current bullet J can be combined with the current bullet N (thus moving it to the end of the list).

Alternatively, bullets J and N can be moved to a new paragraph that is headed by the words, “the peripheral driver shall:”

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{051}{E}{11.3.3.1.3.5 P2 BulletM}----- {Original text} All ACCEPT TARGET I/O and CONTINUE TARGET I/O CCBs received by the SIM/HBA for this LUN until all events are acknowledged by the Host Target Mode Peripheral driver shall be rejected with:

{Comments}

The left margin alignment for this bullet is wrong. Also there is a pile of unnecessary white-space between the words “until” and “all”.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{052}{E}{11.3.3.1.4 P2 BulletD}----- {Original text} The exact order of these two operations is specified.

{Comments}

I am not sure which of the two possible errors apply to this sentence. There may be a requirement in this sentence that is not identified with the magic word, “shall.” Or, this sentence may be missing the magic word, “not.”

Correct this sentence to read in one of the two ways below, depending on its intended meaning:

The exact order of these two operations is not specified.

These operations shall be performed in the order shown here.

\*\*\*\*\*

### Response: Accepted

These operations shall be performed in the order shown here.

(Ralph Weber)

{053}{E}{11.3.4 Table23}----- {Comments} The Dir-column I for the Message Arguments field is misaligned.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

**{054}{T}{11.3.4 P4}**-----

{No original text present}  
{Comments}

There is a CAM Status value that the SIM/HBA can pass to the Host Target Mode peripheral driver that is not listed. That status is Unavailable Resource.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{055}{E}{11.3.4 P6}----- {Original text} The Sense Buffer Length field shall be the length of the sense buffer.

{Comments}

Make this paragraph read:

The Sense Buffer Length field shall be the length of the sense buffer.

The length shall be at least 18.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{056}{E}{11.3.6 P3 BulletD3 editors note}----- {Original text} The Send Status Bit is for CONTINUE I/O CCBs only. Also you must specify whether this is Host Target Mode or Phase Cognizant Mode in the ENABLE LUN.

{Comments}

I think that this refers to the ENABLE LUN CCB. Change the sentence to read:

The Send Status Bit is for CONTINUE I/O CCBs only. Also you must specify whether this is Host Target Mode or Phase Cognizant Mode in the ENABLE LUN CCB.

(Gary Porter)

**{056} This includes a requirement, without the magic “shall” word.**

I think it should read:

The Send Status Bit is for CONTINUE I/O CCBs only. The ENABLE LUN CCB shall specify either Host Target Mode or Phase Cognizant Mode.

\*\*\*\*\*

**Response: Accepted both**

(Ralph Weber)

{057}{E}{11.3.6 P3 BulletD4d}----- {Original text} The pointer to the sense buffer, and length.

{Comments}

This is not a sentence. Change it to read:

The pointer to the sense buffer, and length of the sense buffer shall be set.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{058}{E}{11.3.6 P3 BulletD5e}----- {Original text} The pointer to the sense buffer, and length.

{Comments}

This is not a sentence. Change it to read:

The pointer to the sense buffer, and length of the sense buffer shall be set.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{059}{E}{11.3.6 P5 BulletD&E}-----

{Original text}

D) The SIM/HBA shall check that the ENABLE LUN CCB Target CCB pointer field is non NULL and for each ACCEPT TARGET I/O CCB in the list the CDB completion function is set. If either the ENABLE LUN CCB or an ACCEPT TARGET I/O CCB is found to be in error, then the ENABLE LUN CCB shall fail with Request Completed With Error.

E) The SIM/HBA shall check that the pointer to the sense buffer is non NULL and length of the sense buffer is a minimum of 18 bytes for each ACCEPT TARGET I/O CCB.

{Comments}

I would like the immediate notify and accept target i/o setup bullets to read the same way. Also, I like the immediate notify wording better. So, replace the above text with:

D) The SIM/HBA shall check that the ENABLE LUN CCB Target CCB pointer field is non NULL and for each ACCEPT TARGET I/O CCB in the list, the Accept Target I/O CCB notify callback field is set. The SIM/HBA shall check that the pointer to the sense buffer is non NULL and length of the sense buffer is a minimum of 18 bytes for each ACCEPT TARGET I/O CCB. If either the ENABLE LUN CCB or the ACCEPT TARGET I/O CCB is found to be in error, then the ENABLE LUN CCB shall fail with Request Completed With Error.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{060}{T}{11.3.6 P5 BulletH}----- {Original text} If preceding checks complete without error, the CAM status of the ENABLE LUN CCB shall be set to Request Completed and the CCB returned.

{Comments}

I may not know what I am talking about on this one. But, if I am right, this is a big issue.

If the ENABLE LUN CCB is returned when the request is completed, then the SIM can no longer use the ENABLE LUN CCB private area or reference the group 6 & 7 CDB size values found in the ENABLE LUN CCB. Is returning the CCB the right thing to do?

\*\*\*\*\*

Response: The ENABLE LUN CCB is an immediate CCB an shall be returned back to the caller. The SIM should make copies of any data needed to perform it’s tasks.

(Ralph Weber)

{061}{E}{11.3.7 P3 LastBullet}-----

{Original text}

- For ENABLE LUN CCB with a list count of zero (DISABLE LUN) see section 11.3.11.

{Comments}

This bullet is not lined up with the other “-“ bullets in the list.



Neither is it aligned with the lettered bullets. Align it correctly.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{062}{T}{11.3.7 P5 LastBullet}-----

{Original text}

- Disconnects Mandatory - Indicates to the SIM/HBA that the peripheral driver requires that any initiator which sends a CDB to the enabled LUN shall grant the disconnect privilege.

{Comments}

This is an obtuse way of stating what the SIM/HBA must expect and/or do.

I propose the following rewrite of this bullet:

- Disconnects Mandatory - Indicates to the SIM/HBA that any Identify message received must have the DiscPriv bit set. Clause 11.3.8.2 describes the SIM/HBA response if the DiscPriv bit is not set when the Disconnects Mandatory CAM Flag indicates that it must be.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{063}{E}{11.3.8 P2 BulletE}----- {Original text} E) Otherwise the

xpt\_action() return status shall be Request Inprogress.

{Comments}

The spelling and capitalization of “request in progress” differs from that found in the rest of the document.

Change this bullet to read:

E) Otherwise the xpt\_action() return status shall be Request in Progress.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{064}{E}{11.3.8.2 P2 BulletB}----- {Original text} The SIM/HBA shall notify

the Host Target Mode peripheral driver of this event by the Immediate Notify mechanism described in Section 11.3.3.

{Comments}

Change the word “Section” to “Clause”, because this is an ISO document.

Thus, the sentence should read:

The SIM/HBA shall notify the Host Target Mode peripheral driver of this event by the Immediate Notify mechanism described in Clause 11.3.3.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{065}{E}{11.3.8.2 P2 BulletC5}----- {Original text} 5) The Target ID of the

initiator that selected this SIM/HBA in the Initiator ID field.

{Comments}

This bullet is not aligned with the bullets 1 through 4 in the list. Also, the “target ID of the initiator” is a twisted concept. How about changing the bullet to read:

5) The SCSI Bus ID of the initiator that selected this SIM/HBA in the Initiator ID field.  
\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)  
{066}{E}{11.3.8.2 P2 BulletD}----- {Original text} D) Set the CAM status to CDB Received.  
{Comments}  
There is a requirement in this bullet that is not identified with the magic word, “shall.” Change the bullet to read:  
D) The CAM status shall be set to CDB Received.  
\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)  
{067}{E}{11.3.8.2 P2 BulletE1}----- {Original text} If the peripheral driver does not support tagged commands then the SIM/HBA shall reject the QUEUE TAG message and continue as specified in SCSI 2 Section 5.6.14 (Message Reject).  
{Comments}  
It’s “SCSI-2” not “SCSI 2”. Also change the word “Section” to “Clause”, because this is an ISO document.  
Change the sentence to read:  
If the peripheral driver does not support tagged commands then the SIM/HBA shall reject the QUEUE TAG message and continue as specified in SCSI-2 Clause 5.6.14 (Message Reject).  
\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)  
{068}{T}{11.3.8.2 P2 BulletG}----- {Original text} G) Call the peripheral driver CDB received callback function which was already set in the ACCEPT TARGET I/O CCB.  
{Comments}  
There is no “CDB received callback” field in the ACCEPT TARGET I/O CCB. The applicable field is “Callback on Completion.” I propose that this bullet be changed to better reflect the ACCEPT TARGET I/O CCB field names. Also, the phrase “which was already set” is wordy. It can be shortened to “provided.” The revised bullet would read:  
G) Call the peripheral driver CDB completion callback function provided in the ACCEPT TARGET I/O CCB.  
\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)  
{069}{T}{11.3.8.3 Header}-----  
{Original text}  
11.3.8.3 Host Peripheral Driver CDB Received Callback  
{Comments}  
There is no “CDB received callback” field in the ACCEPT TARGET I/O CCB. The applicable field is “Callback on Completion.” I propose that this bullet be changed to better reflect the ACCEPT TARGET I/O CCB field names.  
The revised header would read:  
11.3.8.3 Host Peripheral Driver CDB Completion Callback  
\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{070}{T}{11.3.8.3 P1 S1}----- {Original text} When the peripheral driver’s CDB received callback function is called, it shall do the following:

{Comments}

There is no “CDB received callback” field in the ACCEPT TARGET I/O CCB. The applicable field is “Callback on Completion.” I propose that this bullet be changed to better reflect the ACCEPT TARGET I/O CCB field names.

The revised sentence would read:

When the peripheral driver’s CDB completion callback function is called, it shall do the following:

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{071}{T}{11.3.8.3 P2 BulletB}----- {Original text} B) If a CHECK CONDITION SCSI status is to be returned to the initiator, then the Host Target Mode peripheral driver shall setup for the CONTINGENT ALLEGIANCE condition.

{Comments}

Setting up the CONTINGENT ALLEGIANCE condition is only part of the peripheral driver’s responsibility. Properly maintaining the CONTINGENT ALLEGIANCE condition is an equal or more important responsibility. Therefore, I propose adding “and maintain” to this bullet. The modified bullet would read:

B) If a CHECK CONDITION SCSI status is to be returned to the initiator, then the Host Target Mode peripheral driver shall setup and maintain the CONTINGENT ALLEGIANCE condition.

(Gary Porter)

{071} I think we should also refer to SCSI-2 here, so add at the end:

### “as specified in SCSI-2.”

\*\*\*\*\*

### Response: Accepted both

(Ralph Weber)

{071}{E}{11.3.8.5 P2 BulletA}-----

{Original text}

A) If the CAM status is not Request Complete Without Error, then an error has occurred. The Host Target Mode peripheral driver shall be responsible for maintaining and if applicable forming sense data. The sense data conditions are defined in the SCSI 2 specification. The Host Target Mode peripheral driver also shall be responsible for maintaining the CONTINGENT ALLEGIANCE condition associated with the SENSE DATA.

{Comments}

It’s “SCSI-2” not “SCSI 2”. Also, I can see no reason for making “SENSE DATA” all caps. The bullet should read:

A) If the CAM status is not Request Complete Without Error, then an error has occurred. The Host Target Mode peripheral driver shall be responsible for maintaining and if applicable forming sense data. The sense data conditions are defined in the SCSI-2 specification. The Host Target Mode peripheral driver also shall be responsible for maintaining the CONTINGENT ALLEGIANCE condition associated with the sense data.

(Gary Porter)

{071}(the second one) I think the business of forming sense data must come before maintaining it, so this should read:

“... responsible for forming sense data, if applicable, and for maintaining it.”  
\*\*\*\*\*

**Response: Accepted both**

(Ralph Weber)  
{072}{E}{11.3.8.6 P2 S1}----- {Original text} Editors Note: Additional information can be found in the SCSI 2 specification Section 5.1.1 BUS FREE.

{Comments}  
It’s “SCSI-2” not “SCSI 2”. Also change the word “Section” to “Clause”, because this is an ISO document.  
Change the sentence to read:  
Editors Note: Additional information can be found in the SCSI-2 specification Clause 5.1.1 BUS FREE.

(Gary Porter)  
{072} I expect that an Editor’s Note is an internal thing which will be removed before the document is forwarded. As long as the Editor understands his Note, we can probably stop worrying about its wording. On the other hand, if this is a Note that implementors will need, its name should be changed to reflect reality.  
\*\*\*\*\*

**Response: Accepted both**

(Ralph Weber)  
{073}{E}{11.3.8.6 P3 BulletD2}----- {Original text} 2) Cause an unexpected bus free. Section 5.1.1 SCSI 2 specification.

{Comments}  
The second sentence in the bullet has no verb. Also, it’s “SCSI-2” not “SCSI 2”. Also change the word “Section” to “Clause”, because this is an ISO document. Change the bullet to read:  
2) Cause an unexpected bus free. See Clause 5.1.1 in the SCSI-2 specification.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)  
{074}{E}{11.3.8.6 P3 BulletF}----- {Original text} F) It is the responsibility of the Host Target peripheral driver to preserve Contingent Allegiance. . . .

{Comments}  
There is a requirement in this sentence that is not identified with the magic word, “shall.” Change the sentence to read:  
F) The Host Target peripheral driver shall preserve the Contingent Allegiance condition. . . .

\*\*\*\*\*

Response: Accepted but I missed it in rev 6.

(Ralph Weber)  
{075}{T}{11.3.8.6 P5 BulletC}-----  
{No original text present}  
{Comments}

Why is the Tag Queue Action field value not specified for the CONTINUE TARGET I/O CCB? This looks like an omission to me. If I am right, then the following bullet should be added to the bullets under bullet C:  
1) The QUEUE TAG message (HEAD OF QUEUE TAG, ORDERED QUEUE TAG, or SIMPLE QUEUE TAG) shall be placed in the Tag Queue Action field of the ACCEPT TARGET I/O CCB.

\*\*\*\*\*

Response: Rejected - The tagged id's and action field has been already filled in by the Host Target mode driver.  
(Ralph Weber)

{076}{E}{11.3.8.6 P5 BulletD2}-----  
{Original text}

2) Cause an unexpected bus free. Section 5.1.1 SCSI 2 specification.

{Comments}

The second sentence in the bullet has no verb. Also, it's "SCSI-2" not "SCSI 2". Also change the word "Section" to "Clause", because this is an ISO document. Change the bullet to read:

2) Cause an unexpected bus free. See Clause 5.1.1 in the SCSI-2 specification.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{077}{E}{11.3.8.6 P5 BulletF}----- {Original text} F) It is the responsibility of the Host Target peripheral driver to preserve Contingent Allegiance. . . .

{Comments}

There is a requirement in this sentence that is not identified with the magic word, "shall." Change the sentence to read:

F) The Host Target peripheral driver shall preserve the Contingent Allegiance condition. . . .

\*\*\*\*\*

Response: Accepted by I missed it in rev 6 of the doc.

(Ralph Weber)

{078}{E}{11.3.8.7 P2}----- {Original text} Note:

For this example Disconnects are mandatory. The SIM/HBA is selected by an initiator, the timeout period starts. IDENTIFY message is received and SIM/HBA drives the bus to command phase. The command is received and SIM/HBA disconnects. When the SIM/HBA disconnects from the bus (bus free) the timeout period ends, no action taken. If the timer expired before the disconnect then this ACCEPT TARGET I/O CCB shall represent a timeout condition.

For this example Disconnects are not allowed. The SIM/HBA is selected by an initiator, the timeout period starts. IDENTIFY message is received and SIM/HBA drives the bus to command phase. The command is received but SIM/HBA is not allowed to disconnect. The SIM/HBA calls back the Host Target Mode peripheral driver. The Host Target Mode peripheral driver responds with a CONTINUE TARGET I/O CCB that causes a transition to data phase. ACCEPT TARGET I/O timeout period ends and a new period begins as specified by the CONTINUE TARGET I/O CCB.

End Note:

{Comments}

There are several poorly formed and incorrectly punctuated sentences in this note. Also, the second sentence in each paragraph should begin with the word "When," to give some sense of time relationships. The note should be rewritten to read:

Note:

For this example Disconnects are mandatory. When the SIM/HBA is selected by an initiator, the timeout period starts. The IDENTIFY message is received and the SIM/HBA drives the bus to command phase. The command is received and the SIM/HBA disconnects. When the SIM/HBA disconnects from the bus (bus free), the timeout period ends. No action taken. If the timer expired before the disconnect, then this ACCEPT TARGET I/O CCB shall represent a timeout condition.

For this example Disconnects are not allowed. When the SIM/HBA is selected by an initiator, the timeout period starts. The IDENTIFY message is received and the SIM/HBA drives the bus to command phase. The command is received but the SIM/HBA is not allowed to disconnect. The SIM/HBA calls back the Host Target Mode peripheral driver. The Host Target Mode peripheral driver responds with a CONTINUE TARGET I/O CCB that

causes a transition to data phase. The ACCEPT TARGET I/O timeout period ends and a new period begins as specified by the CONTINUE TARGET I/O CCB.

End Note:

(Gary Porter)

{078} Maybe it’s just me, but I would find these notes less confusing if they were a bulleted list, rather than prose.

Also, the part about “no action taken” would read better as follows:

“... the timeout period ends but no action is taken.”

\*\*\*\*\*

Response: Accepted both.

(Ralph Weber)

{079}{T}{11.3.8.6 P2 BulletA2}-----

{Original text}

2) If the timeout period expires for the ACCEPT TARGET I/O CCB, the SIM/HBA shall set the CAM status to Command Timeout.

{Comments}

There is a problem with this statement when disconnects are not allowed. To understand the problem you must review the second paragraph of the note that describes these timeouts. (Fortunately, this paragraph is contained in my comment number 78. So you can read it here.)

If the ACCEPT TARGET I/O CCB timeout expires after the SIM/HBA has made the callback to the peripheral driver (but before the CONTINUE TARGET I/O CCB is passed from the peripheral driver to the SIM/HBA), then the SIM/HBA does not own the ACCEPT TARGET I/O CCB. So, the SIM/HBA cannot alter the CAM status field of the ACCEPT TARGET I/O CCB. In fact, I do not see any simple way for the SIM/HBA to report a timeout that occurs after the call back is made to the peripheral driver.

(Gary Porter)

{079} This may not be the right answer either, but the simple way out of this dilemma is to suspend timeout counting until the CONTINUE TARGET I/O CCB is received. Obviously, this raises the question of what to do if the driver loses it. I would like to hear some other people’s thoughts on this issue.

\*\*\*\*\*

Response: This is a problem and will be resolved in rev 7 of the document.

(Ralph Weber)

{080}{E}{11.3.8.6 P2 BulletA3}-----

{Original text}

3) The proper Connect ID shall be set in the ACCEPT TARGET I/O CCB. The Target ID of the initiator that selected this SIM/HBA shall be set in the Initiator ID field.

{Comments}

The “target ID of the initiator” is a twisted concept. How about changing the bullet so that the second sentence reads:

3) The proper Connect ID shall be set in the ACCEPT TARGET I/O CCB. The SCSI Bus ID of the initiator that selected this SIM/HBA shall be set in the Initiator ID field.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{081}{E}{11.3.8.6 P2 BulletA4}-----

{Original text}

4) The SIM/HBA shall cause an unexpected bus free. Section 5.1.1 SCSI 2 specification.

{Comments}

The second sentence in the bullet has no verb. Also, it's "SCSI-2" not "SCSI 2". Also change the word "Section" to "Clause", because this is an ISO document. Change the bullet to read:

4) The SIM/HBA shall cause an unexpected bus free. See Clause 5.1.1 in the SCSI-2 specification.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{082}{E}{11.3.8.6 P2 BulletB3}-----

{Original text}

3) The proper Connect ID shall be set in the ACCEPT TARGET I/O CCB. The Target ID of the initiator that selected this SIM/HBA shall be set in the Initiator ID field.

{Comments}

This looks like a cut&paste bug. I think ACCEPT TARGET I/O CCB should be CONTINUE TARGET I/O CCB. Also, the "target ID of the initiator" is a twisted concept. With these corrections, the bullet should read:

3) The proper Connect ID shall be set in the CONTINUE TARGET I/O CCB. The SCSI Bus ID of the initiator that selected this SIM/HBA shall be set in the Initiator ID field.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{083}{E}{11.3.8.6 P2 BulletB5}-----

{Original text}

5) The SIM/HBA shall cause an unexpected bus free. Section 5.1.1 SCSI 2 specification.

{Comments}

The second sentence in the bullet has no verb. Also, it's "SCSI-2" not "SCSI 2". Also change the word "Section" to "Clause", because this is an ISO document. Change the bullet to read:

5) The SIM/HBA shall cause an unexpected bus free. See Clause 5.1.1 in the SCSI-2 specification.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{084}{T}{11.3.9 Table 26}-----

{Original text}

| 4 | | Next CCB Pointer |

{Comments}

The Next CCB Pointer is used when multiple ACCEPT TARGET I/O CCBs are passed to the SIM/HBA as part of the input with an ENABLE LUN CCB. I think that the Dir field should not be empty on this table entry.

\*\*\*\*\*

Response: Rejected - Those fields are used for linked commands.

(Ralph Weber)

{085}{T}{11.3.9 Table 26}-----

{Original text}

| 1 | | SCSI Status |

{Comments}

The SCSI Status field is set to CHECK CONDITION by the SIM/HBA in several error cases. I think that the Dir field should not be empty on this table entry.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{086}{T}{11.3.10 Table 27}-----

{Original text}

| I | O | SCSI Status (SCSI status to be sent |  
| | | to initiator) |

{Comments}

The SCSI Status field is set to CHECK CONDITION by the SIM/HBA in several error cases. I think that the Dir field should be I/O on this table entry.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{087}{E}{11.3.10 P2}----- {Original text} The following bits are valid for the CAM flags field of the CONTINUE TARGET I/O CCB:

- Direction Out - Sending data from the target peripheral device to the initiator.
- SG List/Data Buffer Pointer and Data Transfer Length fields shall be filled in.
- Direction In - Receiving data from the initiator to the target peripheral device.
- SG List/Data Buffer Pointer and Data Transfer Length fields shall be filled in.

{Comments}

I find the use of dashes for both levels of this bulleted list confusing. At first glance, I find myself asking, "Are the margins out of whack, or does this mean something?" How about changing the second level of bullets to plus signs? Then, these section of the bulleted list would read:

The following bits are valid for the CAM flags field of the CONTINUE TARGET I/O CCB:

- Direction Out - Sending data from the target peripheral device to the initiator.
- SG List/Data Buffer Pointer and Data Transfer Length fields shall be filled in.
- Direction In - Receiving data from the initiator to the target peripheral device.
- SG List/Data Buffer Pointer and Data Transfer Length fields shall be filled in.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{088}{E}{11.3.11 P4 BulletD}----- {Original text} D) All subsequent ACCEPT TARGET I/O and CONTINUE TARGET I/O CCBS received by the SIM prior to the receipt of another ENABLE LUN CCB to enable a LUN shall be returned with a CAM status of Invalid Request.

{Comments}

Throughout the document, the notation for multiple CCBs is "CCBs", not "CCBS." Correct the letter case usage here. Also, the phrase "ENABLE LUN CCB to enable a LUN" seems redundant. Since ENABLE LUN CCBs can both enable and disable a LUN for Host Target Mode operation, some extra words are required to show the purpose of the ENABLE LUN CCB. I propose the following:

D) All subsequent ACCEPT TARGET I/O and CONTINUE TARGET I/O CCBs received by the SIM prior to the receipt of another ENABLE LUN CCB that enables the LUN shall be returned with a CAM status of Invalid Request.

\*\*\*\*\*



### Response: Accepted

(Ralph Weber)

{089}{E}{11.3.12.1 P2 BulletA4}-----

{Original text}

4) Any CONTINUE TARGET I/O or ACCEPT TARGET I/O CCBs that are received by the SIM while the reset recovery is in progress shall be returned with a CAM status of Bus Reset. Reset recovery is complete when the peripheral driver issues a NOTIFY ACKNOWLEDGE CCB with the Reset Cleared field set, and the Sequence Identifier equal to zero.

{Comments}

The second sentence in the bullet is a completely separate thought. To identify its importance to readers, it should be a separate bullet. Also, the second sentence contains a requirement that is not identified with the magic word, "shall." Change the bullet to read:

4) Any CONTINUE TARGET I/O or ACCEPT TARGET I/O CCBs that are received by the SIM while the reset recovery is in progress shall be returned with a CAM status of Bus Reset.

5) Reset recovery shall be complete when the peripheral driver issues a NOTIFY ACKNOWLEDGE CCB with the Reset Cleared field set, and the Sequence Identifier equal to zero.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{090}{T}{11.3.12.1 P2 BulletA5}-----

{Original text}

5) The SIM/HBA unacknowledged event list is cleared for all registered LUNs on the bus which suffered the bus reset.

{Comments}

This bullet should be performed before the Host Target Mode peripheral driver asynch callback function is called. Otherwise, unacknowledged events generated by the Host Target Mode peripheral driver asynch callback function will be cleared. The SIM/HBA will become confused when the Host Target Mode peripheral driver acknowledges these events. Therefore, I believe that this should be bullet 2. Also, there is a requirement in this bullet that is not identified with the magic word, "shall." Move this bullet and change it to read:

2) The SIM/HBA unacknowledged event list shall be cleared for all registered LUNs on the bus which suffered the bus reset.

(Gary Porter)

### 090} I think the term "suffered" has some connotational baggage.

Perhaps "experienced" would be acceptable?

\*\*\*\*\*

Response: Accepted wording but not ordering. Due to possible race conditions.

(Ralph Weber)

{091}{E}{11.3.12.1 P2 BulletB}----- {Original text} B) The Host Target Mode

peripheral driver asynch callback shall:

{Comments}

I believe that "callback routine" is more correct than just plain "callback." Change this bullet to read:

B) The Host Target Mode peripheral driver asynch callback routine shall:

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{092}{T}{11.3.12.1 P2 BulletB5}----- {Original text} 5) The Host Target Mode peripheral driver shall issue/reissue ACCEPT TARGET I/O CCB(s) so that the SIM/HBA can resume normal processing.

{Comments}

Somewhere during development of this standard, we dropped the requirement that the SIM/HBA clear all ACCEPT TARGET I/O CCBs during reset processing. Therefore, it should not be necessary (in most cases) for the peripheral driver to reissue ACCEPT TARGET I/O CCBs. I recommend softening this bullet to read:

5) If necessary, the Host Target Mode peripheral driver shall issue/reissue ACCEPT TARGET I/O CCB(s) so that the SIM/HBA can resume normal processing.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{093}{E}{11.3.12.2 P2 BulletA1}----- {Comments} Add a blank line between the body of bullet A1 and the beginning of bullet A1a.

\*\*\*\*\*

Response: Accepted but I missed it in rev 6 of the doc.

{094}{E}{11.3.12.2 P2 BulletA4}----- {Original text} 4) Any CONTINUE TARGET I/O or ACCEPT TARGET I/O CCBs that are received by the SIM while the reset recovery is in progress shall be returned with a CAM status of Bus Reset. Reset recovery is complete when the peripheral driver issues a NOTIFY ACKNOWLEDGE CCB with the Reset Cleared field set, and the Sequence Identifier equal to zero.

{Comments}

The second sentence in the bullet is a completely separate thought. To identify its importance to readers, it should be a separate bullet. Also, the second sentence contains a requirement that is not identified with the magic word, "shall." Change the bullet to read:

4) Any CONTINUE TARGET I/O or ACCEPT TARGET I/O CCBs that are received by the SIM while the reset recovery is in progress shall be returned with a CAM status of Bus Reset.

5) Reset recovery shall be complete when the peripheral driver issues a NOTIFY ACKNOWLEDGE CCB with the Reset Cleared field set, and the Sequence Identifier equal to zero.

\*\*\*\*\*

### Response: Accepted

(Ralph Weber)

{095}{T}{11.3.12.2 P2 BulletA5}-----  
{Original text}

5) The SIM/HBA unacknowledged event list is cleared for all registered LUNs on the bus which suffered the bus reset.

{Comments}

This bullet should be performed before the Host Target Mode peripheral driver asynch callback function is called. Otherwise, unacknowledged events generated by the Host Target Mode peripheral driver asynch callback function will be cleared. The SIM/HBA will become confused when the Host Target Mode peripheral driver acknowledges these events. Therefore, I believe that this should be bullet 2. Also, there is a requirement in this bullet that is not identified with the magic word, "shall." Move this bullet and change it to read:

2) The SIM/HBA unacknowledged event list shall be cleared for all registered LUNs on the bus which suffered the bus reset.

\*\*\*\*\*

Response: Accepted wording but not ordering. Due to possible race conditions.

(Ralph Weber)

{096}{E}{11.3.12.2 P2 BulletB}----- {Original text} B) The Host Target Mode peripheral driver asynch callback shall:

{Comments}

I believe that "callback routine" is more correct than just plain "callback." Change this bullet to read:

B) The Host Target Mode peripheral driver asynch callback routine shall:

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{097}{T}{11.3.12.2 P2 BulletB5}-----

{Original text}

5) The Host Target Mode peripheral driver shall issue/reissue ACCEPT TARGET

I/O CCB(s) so that the SIM/HBA can resume normal processing.

{Comments}

Somewhere during development of this standard, we dropped the requirement that the SIM/HBA clear all ACCEPT TARGET I/O CCBs during reset processing. Therefore, it should not be necessary (in most cases) for the peripheral driver to reissue ACCEPT TARGET I/O CCBs. I recommend softening this bullet to read:

5) If necessary, the Host Target Mode peripheral driver shall issue/reissue ACCEPT TARGET I/O CCB(s) so that the SIM/HBA can resume normal processing.

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{098}{E}{11.3.13 P1 S1}----- {Original text} For a LUN that is not enabled, when a CDB is received by the SIM/HBA from the SCSI bus, one of the following sequences can occur:

{Comments}

Clarify this sentence by rewriting it to read:

When a CDB is received by the SIM/HBA for a LUN that is not enabled, one of the following sequences shall occur depending on the command received:

\*\*\*\*\*

**Response: Accepted**

(Ralph Weber)

{099}{E}{11.3.13 P2 BulletA}-----

{Original text}

A) INQUIRY Command

1) If the SIM receives a CDB for the INQUIRY command for a non-enabled LUN, the SIM shall return only byte 0 of the inquiry data set to 7FH:

2) The peripheral qualifier is set to 011B indicating the target is not capable of supporting a physical device on this logical unit.

3) The peripheral device type set to 1FH indicating no device type.

{Comments}

These are not several separate thoughts. They are further qualifications of a single thought. Rewrite this as a paragraph of sentences (not bullets). Also, the current bullet 1 can be broken in to two sentences.

Rewrite this bullet as follows:

A) INQUIRY Command

If the SIM receives a CDB for the INQUIRY command for a non-enabled LUN, the SIM shall return only byte 0 of the inquiry data. The returned byte shall be set to 7FH. The peripheral qualifier is set to 011B indicating the target is not capable of supporting a physical device on this logical unit. The peripheral device type set to 1FH indicating no device type.

(Gary Porter)

099} In my opinion, the use of code 011B for the Peripheral Qualifier is overly strict for a device capable of supporting all LUNs simply by receiving the appropriate ENABLE LUN CCB. I would suggest we use code 001B (Indicating that the device is not currently attached at that LUN, but could be at some other time. Furthermore, if the LUN can be activated, it must be as some device type, most likely the Processor Device type. So that value goes into the Peripheral device type field. This makes the value of byte 0 returned as 23H. However, if the SIM/HBA is capable of supporting more than the one device type, then a value of 1FH for an unknown device is acceptable. I think the ordering of the values is also important to making this easy to understand. I would propose the following wording:

If the SIM receives a CDB for the INQUIRY command for a non-enabled LUN, the SIM shall return only byte 0 of the inquiry data. The peripheral qualifier field shall be set to 001B indicating that the target is capable of supporting a device on this LUN, but that no device is currently attached at this LUN. The Peripheral device type field shall be set to 1FH indicating an unknown device type, or to the device type that the SIM/HBA is capable of supporting. Thus, if unknown device type is reported, the value of inquiry data byte 0 will be 3FH.

\*\*\*\*\*

Response: Accepted both.

(Ralph Weber)

{100}{E}{11.3.13 P2 BulletC}----- {Original text} If a command other than INQUIRY or REQUEST SENSE are received for a non-enabled LUN, the SCSI status returned shall be CHECK CONDITION. Any subsequent REQUEST SENSE command shall behave as in Section 11.3.13 Item B.

{Comments}

There is no need for the section (clause) reference here. The information being referenced is in the immediately preceding paragraph. Change this bullet to read:

If a command other than INQUIRY or REQUEST SENSE are received for a non-enabled LUN, the SCSI status returned shall be CHECK CONDITION. Any subsequent REQUEST SENSE command shall behave as described Item B immediately above.

\*\*\*\*\*

**Response: Accepted**