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To: Members of X3T10

Subj.: X3T10/96-169R0 -- Proposed Changes for SAM-2 (X3T10/1157D)

Ref.: (a) SCSI-3 Architecture Model (ANSI X3.270 - 1996)
(b) "Data Communications, Computer Networks and
Open Systems" by Fred Halsall, 1992, third edition (Addison-Wesley)

Introduction

This document describes the proposed changes to be included in the next version of SAM.

Proposed Technical Changes:

Incorporate applicable parts of X3T10/95-229R2, Persistent Reserve.
Incorporate X3T10/94-236r1, Addressable Reset

Clarify the description of events and state changes

When specifying events and state changes defined by the transmission of information via the protocol layer, the standard needs to state clearly whether the event or state change is coincident with the sending or receiving of the event information. The following is an example from reference (a), page 64, subclause 7.2, which discusses the effect of task management events on task state:

"task completion: The device server has returned a service response of `task complete ...`"

In the above example, It is not clear if the task completion event takes place when the service response is sent or when it is received.

In this case, the standard should clarify that the state change associated with task completion takes place as soon as the notification is sent and, possibly, before the initiator becomes aware of it. To clarify the distinction, the wording should be changed to the following:

"task completion: The device server has sent a service response of `task complete ...`"

In addition to the above, the following are other instances requiring such clarification:

Page 53, subclause 5.6.1.2 (Clearing an Auto Contingent Allegiance Condition), third paragraph, Second sentence:

Current wording:

"In this case, the logical unit shall also clear the associated auto contingent allegiance condition upon the return of sense data by means of the autosense mechanism described in 5.6.4.2"

Proposed wording:

"In this case, the logical unit shall also clear the associated auto contingent allegiance condition upon sending sense data by means of the autosense mechanism described in 5.6.4.2"

Clause 6, page 58, paragraph 5, second sentence:

Current wording:

"Function Complete: A logical unit response indicating that the requested function is complete. The task manager shall unconditionally return this response upon completion of a task management request supported by the logical unit or target device to which the request was directed."

Proposed wording:

"Function Complete: .A task manager response indicating that the requested function is complete. The task manager shall unconditionally send this response upon completion of a task management request supported by the logical unit or target device to which the request was directed."

(Note correction to first sentence of this paragraph.)

Other Technical Changes

Subclause 3.9 State Diagrams, pp 23

The specification for the behavior associated with state changes should specify that the actions to be performed on entry into a state are fully completed before the state is exited. Add the following text as item d)

"d) Before exiting a state, all the actions of that state are completed."

Subclause 4.7.3, page 34, paragraph 2, sentence 2.

The sentence incorrectly states that task management requests are directed to a logical unit instead of the task manager. Reword the sentence as follows:

Current wording:

"To guarantee the execution order of task management requests directed to a specific logical unit, an initiator should therefore not have more than one such request pending to that logical unit."

Proposed wording:

"To guarantee the execution order of task management requests referencing a specific logical unit, an initiator should therefore not have more than one such request pending which reference that logical unit."

Subclause 5.6.1.1,

Clarify the conditions under which a task is accepted into the task set while an ACA condition is in effect. The current wording must explicitly state that all of the listed conditions must be true. The specific changes are as follows:

page 52, paragraph 5:

Current wording:

"If the NACA bit was set to one in the CDB control byte of the faulting command, then a new task created while the ACA condition is in effect shall be entered into the faulted task set provided:

Proposed Wording:

"If the NACA bit was set to one in the CDB control byte of the faulting command, then a new task created while the ACA condition is in effect shall be entered into the faulted task set if all of the following are true:"

Page 53, paragraph 2:

Current wording:

"If the conditions listed above are not met, the newly created task shall not be entered into the task set and shall be completed with a status of ACA ACTIVE."

Proposed wording:

"If any one of the conditions listed above are not met, the newly created task shall not be entered into the task set and shall be completed with a status of ACA ACTIVE."

Editorial Changes:

Patent Statement:, first sentence:

Fix mistaken use of the possessive as indicated in the revised wording below.

Current wording:

"The developers of this standard have requested that the holder's of patents..."

Proposed revision:

"The developers of this standard have requested that the holders of patents..."

Subclause 3.1.2, correct the definition of ACA Command

"ACA Command: A command performed by a task with the ACA attribute (see subclause 3.3 and object definition 6)."

Proposed wording:

"ACA Command: A command whose associated task has the ACA attribute (see object definition 7)."

Subclause 4.1, page 24, alphabetized list:

The alphabetized list should start with the letter "a".

Object definition 7, page 36:

The definitions for the Task Identifier and Task Address objects should be included in separately numbered object definitions.

Subclause 5.1.2, page 44, alphabetized list before subclause 5.2

Correct the alphabetized list to start with the letter a).

Subclause 5.3.1, page 47, paragraph 3, first sentence:

Reword to specify that the application client buffer should appear to the logical unit as a logically contiguous block of memory, regardless of whether or not it is physically contiguous.

Current wording:

"As shown in figure 19, the application client's buffer is a single, logically contiguous block of memory large enough to hold all the data required by the command"

Proposed wording:

"As shown in figure 19, the application client's buffer appears to the device server as a single, logically contiguous block of memory large enough to hold all the data required by the command"

Subclause 5.6.1.1, page 52, Note 1:

Change "extended auto contingent allegiance" to "extended contingent allegiance".

Subclause 5.6.3, page 54, item a), second paragraph, second sentence:

Correct the following error in the reference to the contents of REQUEST SENSE data:

Current wording:

"Sense data shall be set to the values specified for the REQUEST SENSE command above."

Proposed change:

"Sense data shall be set to the values specified for the REQUEST SENSE command in item b) below."

Subclause 7.7.1, page 68, first paragraph, last sentence:

Change "...barrier if is between..." to "...barrier if it is between....".

Protocol Service Interface Notation

Adopt the OSI notation and conventions for specifying the protocol service interfaces. For a description, see reference (b), sections 10.5 and 10.6.

Add a "keyword" clause (see SBC) defining the following terms:

"shall", "may", "should", "mandatory", "optional", "reserved".