



Date: 16 May, 1998

To: T10 Membership

From: Ralph Weber, T10 Alternate member from Symbios, Inc.

Subject: SAM-2 Revision 6 Notes

During the May SCSI Working Group meeting, I was asked to make several editorial decisions regarding text in SAM-2. This report documents those decisions. It is intended to give the reader a review of those changes where editorial judgment was exercised at the request of the working group, while avoiding a full-fledged slog through the entire SAM-6 draft.

1) Add definition for code value: The working group requested addition of a definition for code value and left the text of the definition open. The definitions added read as follows:

code value: A one or a series of defined numeric values each representing an identified and described instance or condition. Code values usually are defined to be used in a specific field (see 3.1.35).

field: A group of one or more contiguous bits, usually part of a larger structure such as a CDB (see 3.1.13) or sense data (see 3.1.79).

2) Hierarchical addressing usage of the TARGET/LUN field in Peripheral Device Addressing: The working group asked for wording that clarifies the requirement that the TARGET/LUN field contains a target ID with a fixed LUN of 0 when the BUS IDENTIFIER fields is non-zero. When the BUS IDENTIFER field is zero, the TARGET/LUN field contains a LUN value for the current level. The group also asked for improved wording for, "A BUS IDENTIFIER field of zero represents a logical interconnection logical units ..."

The previous wording was:

The TARGET/LUN field indicates the address of the peripheral device to which the SCSI device shall relay the received command. If the BUS IDENTIFIER field is not zero the TARGET/LUN field contains the target and LUN addressing information to be used on the bus indicated by the BUS IDENTIFIER field when relaying the received command. The received command to shall be relayed to LUN zero.

A BUS IDENTIFIER field of zero represents a logical interconnection logical units. This representation of the logical units may be used when the SCSI device either does not use hierarchical addressing for assigning LUNs to entities or the SCSI device has entities that need LUNs and are not attached to buses (e.g, fans, cache, controllers, etc.).

A BUS IDENTIFIER field greater than zero represents physical interconnects that connect a group of SCSI devices. Each of the buses shall be assigned a number from 1 to 63 by the SCSI device. The bus identifiers shall be used in the BUS IDENTIFIER field by the SCSI device when assigning addresses to peripheral devices attached to those buses.

The new wording is:

The TARGET/LUN field indicates the address of the peripheral device to which the SCSI device shall relay the received command. The meaning and usage of the TARGET/LUN field depends on whether the BUS IDENTIFIER field contains zero.

A BUS IDENTIFIER field of zero indicates a logical unit at the current level. This representation of a logical unit may be used either when the SCSI device at the current level does not use hierarchical addressing for assigning LUNs to entities or when the SCSI device at the current level includes entities that need LUNs but are not attached to SCSI buses (e.g., fans, cache, controllers, etc.). When the BUS IDENTIFIER field contains zero, the command shall be relayed to the current level logical unit (TARGET/LUN field value) within or joined to the current level SCSI device.

A BUS IDENTIFIER field greater than zero represents physical SCSI interconnect that connects a group of SCSI devices to the current level SCSI device. Each physical interconnect shall be assigned a unique number from 1 to 63. These bus identifiers shall be used in the BUS IDENTIFIER field when assigning addresses to peripheral devices attached to the physical interconnects. When the BUS IDENTIFIER field is greater than zero, the command shall be relayed to the logical unit zero within target (TARGET/LUN field value) located physical interconnect (BUS IDENTIFIER field value). The target information in the TARGET/LUN field may be a target identifier (see object definition 5) or it may be a mapped representation of a target identifier, when the range of possible target identifiers is too large to fit in the TARGET/LUN field.

3) I have taken perhaps more liberty than the working group intended in rewording the description of how ACA and CA conditions for other initiators do (or more particularly do not) affect "this" initiator.

The previous wording was:

If TST=001b, tasks from other initiators shall be enabled and completed in accordance with the requirements of Clause 7. Tasks created by other initiators while the ACA or CA condition is in effect shall be entered into that initiator's task set provided that the task set is not full and the command is a supported command without an illegal parameter.

The new wording is:

If TST=001b, tasks created by one initiator shall not be rejected based on an ACA or CA condition in effect for another initiator. Only ACA or CA condition for the sending initiator (as well as other task set management considerations described in clause 7) shall affect acceptance into the task set or rejection for a task from that initiator.

4) Concerns were expressed about the following sentence describing asynchronous event reporting:

Notification of command-related error conditions shall be sent only to the initiator that initiated the affected task.

The problem was that "command-related error conditions" could be interpreted broadly enough to include asynchronous event reports for changes in mode pages and clearing a task set. While reading the clause, I discovered the following list of uses for Asynchronous Event Reporting:

- a) an error condition was encountered after command completion;
- b) a newly initialized device is available;
- c) some other type of unit attention condition has occurred; or
- d) an asynchronous event has occurred.

Examination of the list indicated that only the first entry should be covered by the sentence in question. With this in mind (plus a few editorial changes), the replacement sentence reads:

Notification of an error condition encountered after command completion shall be returned only to the initiator that sent the affected task.