

Date: May 17, 2002

To: T10 Committee (SCSI)

From: George Penokie (IBM/Tivoli)

Subject: AEN on SAS

## 1 Asynchronous event reporting (for SAS)

SAS target ports shall send an AEN (asynchronous event notification) primitive when an asynchronous event has occurred in one of their logical units. Asynchronous events are defined in SAM-2 and the control mode page of SPC-3 and include initialization complete, other unit attention conditions, and deferred errors. The AEN primitive shall be sent by the expander device to all initiator ports at the next opportunity by replacing an idle dword.

SAS target ports shall only send AEN on a link that does not have an open connection.

SAS target devices shall generate an AEN for each SAS initiator port whenever any of the conditions described in the control mode page (see SPC-3) occurs in logical unit associated with that SSP target port.

AENs may be queued. After the first AEN is reported, another AEN may exist.

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[Editors Note 1 - xxx: Should there be a list of ASCQs that are reported or a list of events that would cause an AEN to occur?](#)

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AENs shall persist on the REPORT AENs well known logical unit for each SAS initiator port until:

- a) that SAS initiator port clears the AEN by issuing a REQUEST SENSE command to the REPORT AENs well known logical unit; or
- b) the SAS target port returns information on the AEN in sense data for a pending command from that SAS initiator port.

Upon receipt of an AEN, an initiator port should then send a TEST UNIT READY or REQUEST SENSE command to the REPORT AENs well known logical unit (see xxxx) on each target device to retrieve the sense data associated with the events.

If the initiator already has commands pending for a logical unit within the target device that sent the AEN the sense data for that AEN shall be reported on the next command with GOOD status.

## 2 New W-LUN table entry for SAM-3

The w-LUN field identifies well known logical unit to be addressed. See table 1 for a list of well know addresses.

Table 1 — w-LUN field values

W-LUN	Name	Subclause
00h	Reserved	
01h	REPORT LUNs	SPC-3
02h	REPORT AEN	SAS
02h-FFh	Reserved	

## 2.1 REPORT AENs for SAS

The REPORT AENs W-LUN shall only process the commands listed in table 2. If a command is received by the REPORT AENs well know logical unit that is not listed in table 2 the device server shall return CHECK CONDITION status with the sense key set to ILLEGAL REQUEST and an additional sense code of INVALID COMMAND OPERATION CODE.

After a REQUEST SENSE command is successfully completed the highest priority AEN for the SAS initiator port that sent the REQUEST SENSE command shall be cleared for that SAS initiator port.

Table 2 — REPORT AENs W-LUN commands

Command Name	Operation code	Type	Subclause
INQUIRY	12h	M	SPC-3
REQUEST SENSE	03h	M	SPC-2
TEST UNIT READY	00h	M	SPC-2

Key: M = Command implementation is mandatory.