To: T10 Technical Committee
From: Bob Sheffield (robert.l.sheffield@intel.com)
Date: 30 May 2006
Subject: 06-262r0: SAT - Example Configurations

**Revision history**
Revision 0 (30 May 2006) First revision

**Related documents**
SAT-r08 - SCSI / ATA Translation revision 08
06-121r1 SAT-r08_LB_Comment_Resolution.pdf

**Overview**

Discussion of letter ballot comments in subclause 5.1, the Architecture Overview, led to direction to copy and modify figures from the VPD pages showing basic usage models for SAT into the Architecture Overview showing the three examples listed. This proposal shows the suggested changes, and is intended to resolve letter ballot comments in subclause 5.1 related to the example implementations.

**Suggested changes**

***Modify subclause 5.1 as follows:***

# 5 SCSI Architectural Elements

## 5.1 Overview

Clause 5 defines SCSI/ATA translation elements that impact the representation of the storage domain in terms of elements defined in SAM-3.

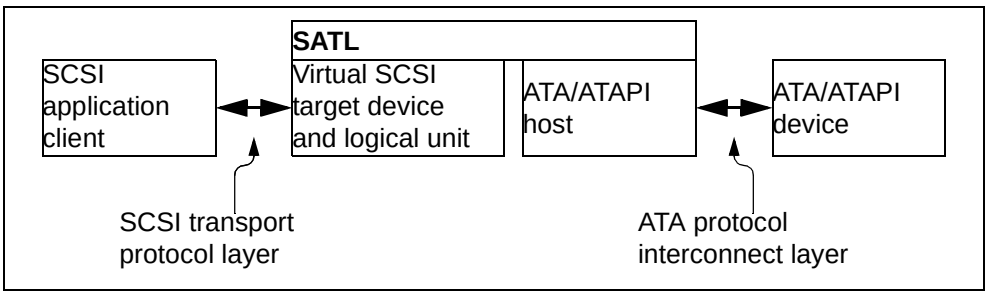


**Figure 4 — SAT functional protocol reference model**

Figure 4 shows a SATL connecting a SCSI application client to an ATA/ATAPI device. The SATL accomplishes this by:

a) emulating a SCSI logical unit;
b) integrating an ATA/ATAPI host; and
c) providing the translation elements to link them together.
d) This standard defines SCSI/ATA Translation using SCSI and ATA command sets. This standard does not define the mapping of transport capabilities as defined at the SCSI Transport Protocol Layer and the ATA Protocol Interconnect Layer.

An implementation utilizing a SATL may or may not include a SCSI transport. ~~Examples of a SATL implemented in accordance to this standard include:~~ A SATL may appear in different configurations.

***The following examples are revised from the unordered list of examples, with figures added.***

EXAMPLE 1 - Figure 5 shows a SATL contained within a SCSI target comprised of ATA device(s) using a defined SCSI transport (e.g., Fibre Channel, SCSI parallel interface, or SBP-3).

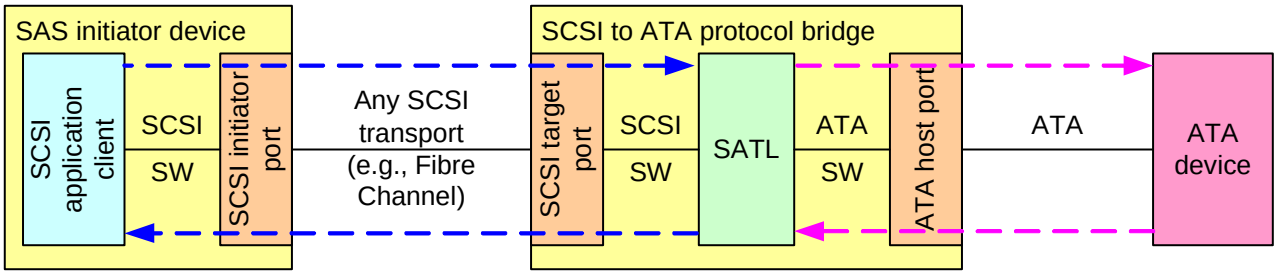


**Figure 5 — SATL contained withing a SCSI target device**

EXAMPLE 2 - Figure 6 shows an ATA/ATAPI Host Bus Adapter (HBA) directly connected to ATA device(s) and providing SCSI transport protocol layer services to a SCSI application client in accordance with SAM-3.

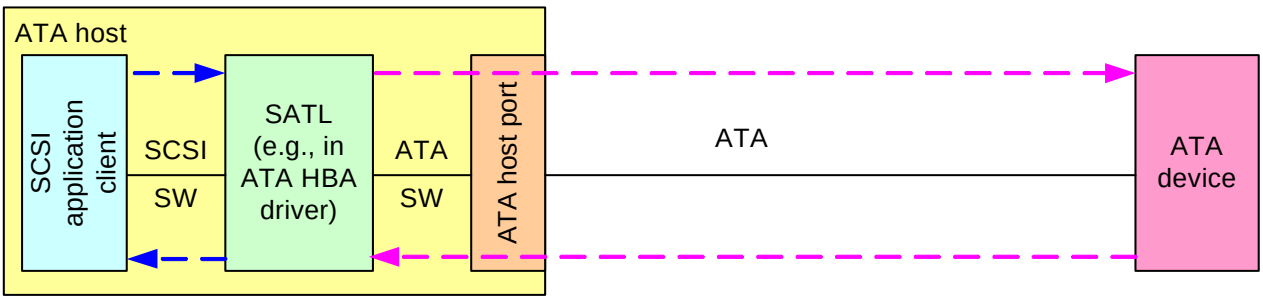


**Figure 6 — ATA HBA directly connected to ATA devices and/or ATAPI devices**

EXAMPLE 3 - Figure 7 shows a SAS STP initiator port (see SAS-1.1) connecting to ATA device(s). The STP initiator port includes a SATL to provide the SCSI transport protocol layer services to the application client.

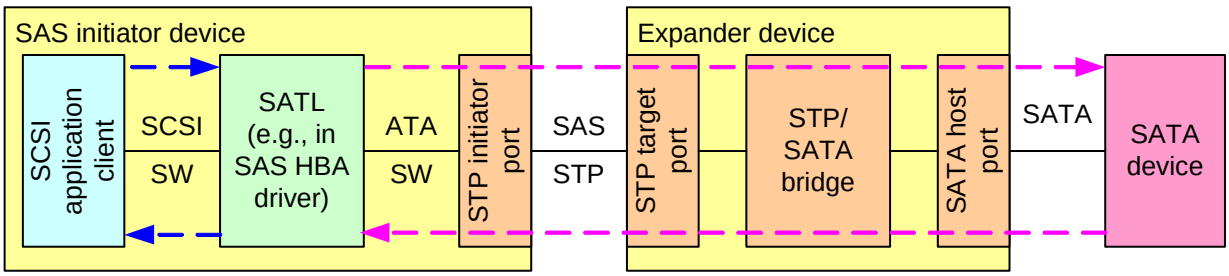


**Figure 7 — SAS STP initiator port connected to ATA devices and/or ATAPI devices**

Editor's Note 1: The following unordered list is being merged with a similar list in clause 4 and moved to Scope clause, per other LB comments.

This standard defines SCSI/ATA Translation rules for:

a) generating responses to SCSI task management requests;
b) returning standard INQUIRY data and VPD pages;
c) mapping of ATA IDENTIFY DEVICE data to common and protocol-specific VPD pages;
d) mapping SCSI tasks to ATA commands (e.g., SATA NCQ);
e) mapping SCSI mode page fields to the capabilities provided by underlying ATA devices;
f) implementing mode pages, and the effects of mode page settings on ATA-domain operations;
g) returning log pages;
h) implementing read and write commands;
i) implementing the ATA PASS-THROUGH command;
j) returning SCSI sense data with respect to conditions that may occur in the ATA domain; and
k) mapping ATA responses to SCSI responses.