To: T10 Technical Committee
From: Mark Overby, NVIDIA Corporation (moverby@nvidia.com)
Date: 11 January 2007
Subject: T10/07-325r0 SAT-2: Translation of zero-length security commands

<u>Revision History</u>
Revision 0 - Initial draft of document
Revision 1 - Updated to refelect addition of new non-data command in T13.

<u>Related Documents</u>
SAT-2 (T10/1826-D rev 01)

1 Overview

T10, at the March plenary, voted to approve the translation of the SECURITY PROTOCOL commands into ATA commands. Subsequent to this, it has been identified that the SECURITY PROTOCOL commands permit an allocation length of zero. The corresponding ATA commands (defined in ATA8-ACS) use the DMA, PIO data-in, and PIO data-out protocols. None of these ATA protocols permit a host to transmit no data, or a device to transmit no data. Therefore, in the current translation, undefined behavior will exist on the ATA device and host when this occurs.

This proposal would cause the SATL to return a CHECK CONDITION when this situation is encountered to present well-known behavior. If, in the future, T13 chooses to allow zero-length transfers using the SECURITY PROTOCOL commands, this restriction could be modified.

Since that time, T13 has approved a new trusted command which uses the ATA non-data protocol. Therefore, this proposal creates a translation for the zero-length to use the non-data protocol trusted command.

2 Document Changes

2.1 Changes to SAT-2 (T10/1826-D rev 1a)

8.9.3 ALLOCATION LENGTH field translation overview

The translation of ALLOCATION LENGTH varies based on the value of SECURITY PROTOCOL. **<u>If allocation length is zero, the SATL shall use the ATA TRUSTED NON-DATA command instead of TRUSTED RECEIVE or TRUSTED RECEIVE DMA.</u>**

8.10.3 ALLOCATION LENGTH field translation overview

The translation of ALLOCATION LENGTH varies based on the value of SECURITY PROTOCOL. **<u>If allocation length is zero, the SATL shall use the ATA TRUSTED NON-DATA command instead of TRUSTED SEND or TRUSTED SEND DMA.</u>**