October 18, 2002

To: T10 Technical Committee
From: Timothy Hoglund (LSI Logic)
Subject: SATA_ERROR primitive removal

SAS currently specifies that expanders which are forwarding dwords to a SATA physical link shall replace an invalid dword or an ERROR primitive with a SATA_ERROR primitive. The SATA_ERROR primitive is defined as \[ \text{[K28.3, K28.3, K28.3, K28.3]} \] (reference: \text{sas-r02a Table 37}).

Some SATA devices may be confused when receiving a consecutive series of K characters and may attempt to re-determine dword boundaries indiscriminately (and potentially incorrectly). This proposal seeks to insure full interoperability with SATA devices while allowing for error propagation through the topology.

\textbf{Proposal}

1. Modify the following sentence in sections (6.9.5.2, 6.9.6.3, 6.9.7.3, 6.9.8.3, 6.9.9.3):

   “An expander forwarding the dword to another SAS link shall replace the invalid dword with ERROR, or SATA_ERROR. An expander forwarding the dword to a SATA link shall replace the invalid dword with a dword containing a coding violation (see 7.14.13).”

2. Modify sentence in 7.1.2 as follows: “Except for SATA_ERROR, these values are defined by SATA.”

3. Remove SATA_ERROR primitive from Table 34 and Table 37

4. Remove Editor’s Note 34

5. Remove 7.1.6.1 SATA_ERROR description

6. Modify the following sentence in 7.14.13:

   “Expander devices that are forwarding dwords to a SATA physical link shall replace an invalid dword or an ERROR primitive with a SATA_ERROR primitive containing a coding violation.”