T10 & T11 Committee Modeling Update

LSI LOGIC

LSI LOGIC

SCSI and Fibre Channel Specifications

- SCSI is developed by T10, and Fibre Channel is developed by T11.
- T10 & T11 are Technical Committees of the National Committee for Information Technology Standards (NCITS)
- NCITS is accredited by and operates under rules approved by the American National Standards Institute (ANSI)

LSI LOGIC

SCSI and Fibre Channel Signal Modeling

- Modeling of devices, cables, connectors, terminators
- Signal performance information exchange standards
- Methods for extracting electrical and signal attributes
- Acceptable modeling methods
- Acceptable simulation methods
- Physical environment common simulation methodology

LSI LOGIC

SCSI Signal Modeling

- Ad hoc group of T10
- Tasked to write an ANSI/ NCITS Technical Report.
  - Technical report is in final review
  - Will be forwarded to T10 for letter ballot in July 2001
  - Expect acceptance after public review and comment
- Tasked to write an American National Standard
  - Scheduled to begin development August 2001
  - Scheduled completion for September 2003
  - Extension and amplification of the Technical Report

LSI LOGIC

Fibre Channel Signal Modeling

- Ad hoc group of T11.2
- Tasked to write a modeling document similar to the SCSI Signal Modeling Technical Report.
  - Document is based heavily upon the SCSI modeling document.
  - Expect completion by September 2001
  - Will be forwarded to T11 for letter ballot
  - Expect acceptance after public review an comment
  - Expect general release in January 2002

LSI LOGIC

SCSI and Fibre Channel Signal Modeling

- Groups have selected IBIS as the data exchange format for:
  - Semiconductor device models -SCSI & Fibre Channel
  - Terminator models - SCSI
  - Connector models (when codified) - SCSI

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IBIS and SCSI

- IBIS 3.2 can be used for present SCSI devices
  - Single-ended models
  - High voltage differential models
  - Low voltage differential models

LSI LOGIC

IBIS and SCSI Fallback

- Fallback can not be completely modeled in IBIS 3.2
  - Uses driver schedule
  - Is limited to absolute time relationships between emphasis and fallback states
  - Needs bit position dependency not time
  - Future may include overdrive past 1st bit

LSI LOGIC

IBIS and Fibre Channel

- Concerns that IBIS is not robust enough to model 1GHz / 750ps rise time signals
- Emphasis cannot be completely modeled in IBIS 3.2
  - Uses driver schedule
  - Is limited to absolute time relationships between emphasis and de-emphasis states
  - Needs bit position dependency not time
  - Requires emphasis past 1st bit

LSI LOGIC

SCSI/Fibre Channel and IBIS Futures

- Next generation of SCSI at 640 Mbyte/s
  - Scheduled release in 2003
  - Will use transmitter fallback compensation
  - Overdrive may extend past 1st bit
- Following generations at 1.2 Gbytes/s
  - In development with release in 2005
  - Currently in development
- Next generation of Fibre Channel
  - 3 GHz / 50ps rise time signals
  - Emphasis may be encoding related