**Project Proposal
For a New
NCITS Technical Report**

SCSI Passive Interconnect Performance

(PIP)

Physical Layer

May 16, 2000

1.   Source of the Proposed Project

1.1.   Title: SCSI Passive Interconnect Performance (PIP)

1.2.   Date Submitted: May 16, 2000

1.3.   Proposer: T10, 8 members of T10 are also members of NCITS.

2. Process Description for the Proposed Project

2.1.   Project Type:

D - Development

2.2.   Type of Document:

NCITS Technical Report

2.3.   Definitions of Concepts and Special Terms:

None

2.4.   Expected Relationship with Approved Reference Models, Frameworks, Architectures, etc.

This Technical Report is expected to be used in closed systems.

2.5.   Recommended NCITS Development Technical Committee:

T10

2.6.   Anticipated Frequency and Duration of Meetings

Technical Committee T10 meets on a regularly scheduled basis (see www.t10.org for the current meeting schedule). Specific task ad hoc groups are called as required between the regular meetings but their results are not binding.

2.7.   Target Date for Initial Public Review (Milestone 4):

January 2002

2.8.   Estimated Useful Life of Standard or Technical Report:

5 Years

3. Business Case for Developing the Proposed Standard or Technical Report

3.1.   Description:

The SCSI Passive Interconnect Performance Technical Report (PIP) is a collection of requirements on methodologies to be used to measure the performance of passive SCSI interconnect components such as cable assemblies and backplanes. This work extends previous work for uniform transmission media to the completed interconnect parts that have connectors and other assembly features. These methodologies support the current family of SCSI standards and are designed to work at the data rates expected to be specified through 2007.

The following items may be considered for inclusion in PIP:

• Define how to specify the output signal from a cable assembly in light of the possible use of adjustable active filtering (called equalization by some) in receivers.

• Allow for the following schemes that are presently being considered for SPI-4: transmitter compensation, adaptive adjustable filtering, compensation of skew

- Define how to specify cable assembly construction in terms of performance rather than only in mechanical terms. For example, connector to connector spacing in terms of propagation time rather than length, transition regions in terms of cross talk contribution rather than physical extent, discontinuities in impedance due to connectors rather than nothing, etc.

- Preserve the present testing methodologies for media if possible.

- Specify output types and formats

- Specify output evaluation schemes

- Define worst case configurations: loading, spacing (regular or not, values)

- Define interoperability points that involve passive interconnect

- Rules for concatenation of passive interconnect components

- Extend currently specified tests for media to completedFor example, the attenuation test can be generalized to two port amplitude transfer function (which will include resonance caused by connectors etc). The cross talk test can be generalized by using repeated pulses and varying the rep rate while observing the response of on the victim line.

- Include the effects of data pattern and placement of cable assembly features that may produce complex interference patterns and recommend how to minimize the impact of these features on the delivered signal.

- Use the same test specification documentation methodology as used for SPI-3 cable media.

- Measurement of common mode performance requirements on shielded and unshielded cable assemblies and backplanes

- Other capabilities that may fit within the general application scope of the this project

3.2. Existing Practice and the Need for a Technical Report:

The proposed project involves a compatible evolution of the present SCSI physical layer.

3.3. Implementation Impacts of the Proposed Technical Report:

3.3.1.   Development Costs

Resources are provided by the members of T10. The members host the required meetings for development, provide for the necessary lab experiments and silicon technology development, and provide the Technical Editor for the project.

3.3.2.   Impact on Existing or Potential Markets

The nature of the proposed project is to ensure that SCSI has an upward, highly compatible growth path. This ensures that current investments in parallel SCSI are provided with a stable managed migration path in the face of technological developments.

3.3.3.   Costs and Methods for Conformity Assessment

The committee will consider the results of testing as may be available to the committee through the voluntary efforts of the various participants in T10. With this method all costs are borne by the organizations of the various participants and have for the most part been mainly an adjunct of their normal development costs.

3.3.4.   Return on Investment

ROI information is considered proprietary data by the member organizations but is judged to be large.

3.4. Legal Considerations

3.4.1.   Patent Assertions

Calls will be made to identify assertions of patent rights in accordance with the relevant NCITS, ANSI, and ISO/IEC policies and procedures.

3.4.2.   Dissemination of the Standard or Technical Report

Drafts of this document will be disseminated electronically. Dissemination of the final Technical Report will be restricted as the document becomes property of NCITS, ANSI, or ISO/IEC.

4. Related Standards Activities:

4.1. Existing Standards:

BSR Number	Title	Project
X3.301-1998	SCSI Parallel Interface - 2 (SPI-2)	1142-D

4.2. Related Standards Activity:

BSR Number	Title	Project
	SCSI Parallel Interface - 3 (SPI-3)	1302-D
	SCSI Parallel Interface - 4 (SPI-4)	1365-D

Corresponding ISO projects:

ISO/IEC Number	Title	Project
CD 14776-112	SCSI Parallel Interface - 2 (SPI-2)	1.25.13.11.21

4.3. Recommendations for Coordinating Liaison:

None.

4.4. Recommendations for Close Liaison:

None.