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Project Proposal
for a new
INCITS Standard

USB Attached SCSI
(UAS)

8 November 2007

1 Source of Proposed Project

1.1 Title: USB Attached SCSI.

1.2 Date Submitted: 8 November 2007.

1.3 Proposing Group: INCITS TC T10. Seven T10 members are also INCITS members.

2 Process Description for the Proposed Project

2.1 Project Type: D - Development.

2.2 Type of Document: Standard.

2.3 Definitions of Concepts and Special Terms: none.

2.4 Expected Relationship with Approved Reference Models, Frameworks, Architectures, etc.
None, it is expected that this standard will be used in closed systems.

2.5 Recommended INCITS Development Technical Committee: T10.

2.6 Anticipated Frequency and Duration of Meetings
Technical Committee T10 meets on a regularly scheduled basis (see http://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): *July 2009*

2.8 Estimated Useful Life of Standard or Technical Report: 10 Years.

3 Business Case for Developing the Proposed Standard or Technical Report

3.1 Description
USB Attached SCSI is a new generation of USB Transport Standards. This standard should support the following features in support of USB-2 and future USB specifications:

1) does not interfere with the USB Mass Storage Class (MSC) bulk-only transport;
2) mechanism to send commands associated with any T10 standard to a USB device;
3) support for queuing in the protocol;
4) support for autosense;
5) compliance with SCSI Architecture Model - 4 (SAM-4) or later; and
6) other capabilities that may fit within the scope of this project.

3.2 Existing Practice and the Need for a Standard

The existing USB Mass Storage Class specifications are available from the Universal Serial Bus Implementors Forum (USB-IF) web site (www.usb.org).

USB Mass Storage devices communicate using SCSI CDB's. The transport mechanism was defined in 1997 (10 years ago). In 1997, USB was operating at a speed roughly equivalent to a PC Architecture parallel port. Since that time, the USB-2 Specification was released and the clock rate increased from 12MHz to 480MHz. Using USB-2 the data transfer rate (approx 40MB/s) is appropriate for slower hard drives and flash drives. However, the USB transport mechanism for Mass Storage devices has not updated. There is a USB-3 specification under development which plans to increase the clock rate to 5GHz with a targeted data rate (after overhead is removed) of approx 300MB/s.

3.3 Implementation Impacts of the Proposed Standard

3.3.1 Development Costs

Members of T10 will provide the necessary resources. The T10 members will host the required meetings for development, provide for the necessary lab experiments, and provide the Technical Editor for the project.

3.3.2 Impact on Existing or Potential Markets

This proposed project is intended to provide a USB transport protocol more consistent with other SCSI transport protocols. This ensures that investments in such solutions have a stable managed migration path in the face of technological development.

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 members have stated that the ROI is expected 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 INCITS, 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 standard will be restricted, as the document becomes property of INCITS, ANSI, and/or ISO/IEC.

3.5 Resources - Individuals and organizations competent in the subject matter

The USB Implementers Forum (USB-IF) and USB 3.0 Promoter Group own the specifications for the USB Trasport, link and phy.

4 Related Standards Activities

4.1 Existing Standards:

ID Number	Title
ISO/IEC 14776	Multipart SCSI standard
INCITS 402-2005	SCSI Architecture Model - 3 (SAM-3)
INCITS 408-2005	SCSI Primary Commands - 3 (SPC-3)

4.2　　　　　　　　Related Standards Activity

ID Number	Title
T10/1683-D	SCSI Architecture Model - 4 (SAM-4)
T10/1729-D	SCSI Primary Commands - 4 (SPC-4)

4.3 Recommendations for Close Liaison

5 Units of Measurement used in the Standard

The International System of Units (SI) units will be used.