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INCITS 471-2010

# American National Standard

*for Information Technology –  
USB Attached SCSI (UAS)*

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**INCITS 471-2010**

American National Standard  
for Information Technology –  
**USB Attached SCSI (UAS)**

Secretariat

**Information Technology Industry Council**

Approved December 7, 2010

**American National Standards Institute, Inc.**

**Abstract**

This standard specifies the requirements for the USB Attached SCSI (UAS) transport protocol. The UAS transport protocol defines a mechanism to transport SCSI commands using USB hardware. The UAS transport protocol coordinates with other members of the SCSI family of standards via the SAM-4 architecture model. This standard is intended to be used in conjunction with SCSI command set standards and USB specifications.

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**Foreword** (This foreword is not part of American National Standard INCITS 471-2010.)

The purpose of this standard is to define requirements for the transmission of SCSI commands, in a manner compliant with SAM-4, across a USB physical interface.

Requests for interpretation, suggestions for improvement and addenda, or defect reports are welcome. They should be sent to the INCITS Secretariat, National Committee for Information Technology Standards, Information Technology Institute, 1101 K Street, NW, Suite 610, Washington, DC 20005.

This standard was processed and approved for submittal to ANSI by the InterNational Committee for Information Technology Standards (INCITS). Committee approval of the standard does not necessarily imply that all committee members voted for approval. At the time of it approved this standard, INCITS had the following members:

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## **Introduction**

The USB Attached SCSI standard (UAS) is divided into the following clauses:

Clause 1 describes the scope.

Clause 2 provides normative references for the entire standard.

Clause 3 provides definitions, abbreviations, and conventions used within the entire standard.

Clause 4 describes the model.

Clause 5 describes USB requirements.

Clause 6 describes transport requirements (e.g., IU's).

Clause 7 describes the SCSI Application Layer Transport Protocol Services.

Clause 8 describes device server error handling.



American National Standard  
for Information Technology –

# USB Attached SCSI (UAS)

## 1 Scope

The SCSI family of standards provides for different transport protocols that define the methods for exchanging information between SCSI devices. This standard defines the methods for exchanging information between SCSI devices using a USB interconnect. Other SCSI transport protocol standards define the methods for exchanging information between SCSI devices using other interconnects.

Figure 1 shows the relationship of this standard to the other standards and related projects in the SCSI family of standards.

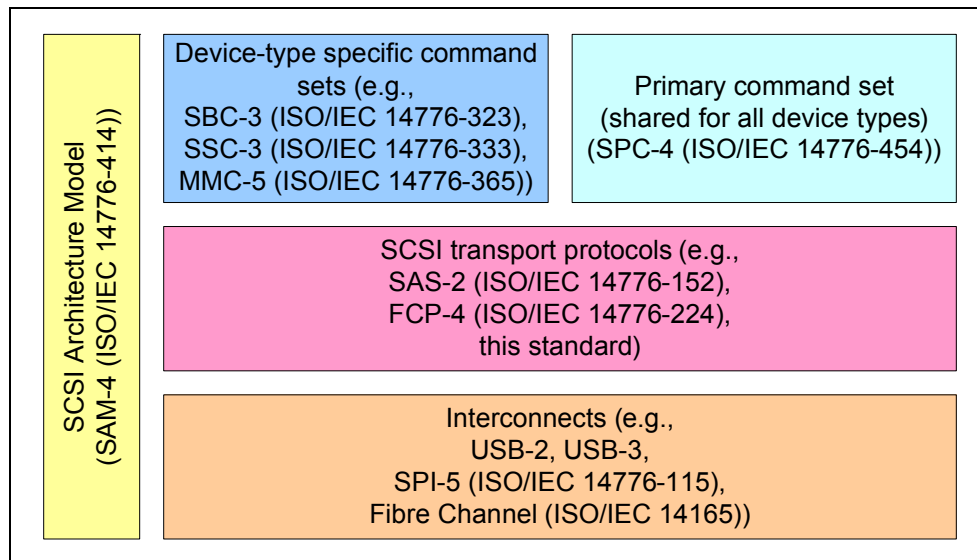


Figure 1 — SCSI document relationships

This standard describes a SCSI transport protocol (see SAM-4) for USB-2 and USB-3 with the following properties:

- a) mechanism to send commands associated with any T10 command standard to a USB device;
- b) complies with SCSI Architecture Model - 4 (e.g., autosense and command queuing); and
- c) other capabilities.