# INTERNATIONAL STANDARD

# ISO/IEC 14776-413

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## Information technology –
## Small computer system interface (SCSI) –

## Part 413:
## Architecture model-3 (SAM-3)



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International Standard 14776-413 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

This International Standard has been approved by vote of the member bodies, and the voting results may be obtained from the address given on the title page.

A list of all parts of the ISO/IEC 14776 series, under the general title *Information technology – Small computer system interface (SCSI)*, can be found on the IEC website.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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# INTRODUCTION

## SCSI standards family

The term SCSI is used to refer to the family of standards described in this subclause.

Figure 0 shows the relationship of this standard to the other standards and related projects in the SCSI family of standards as of the publication of this standard.

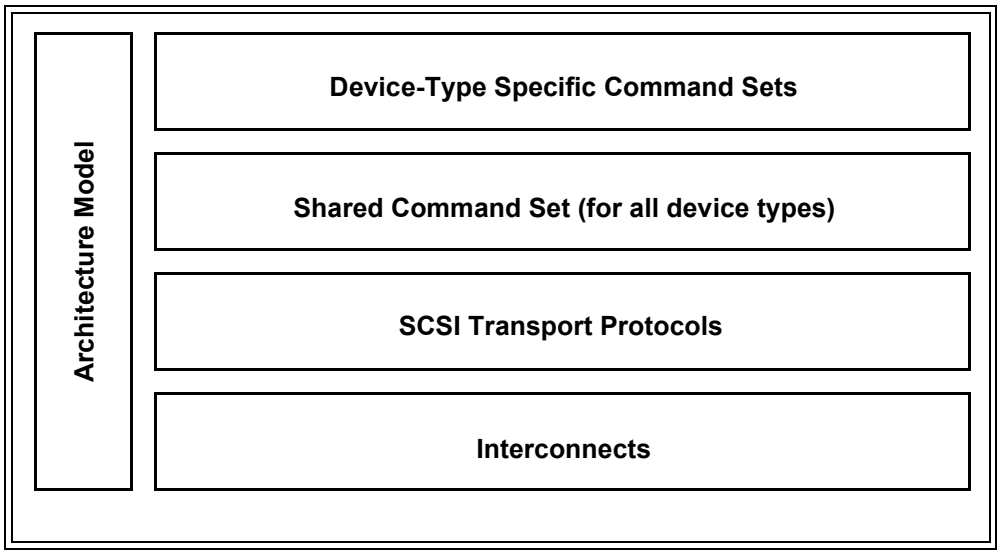


**Figure 0 — SCSI document structure**

The roadmap in figure 0 is intended to show the general applicability of the documents to one another. Figure 0 is not intended to imply a relationship such as a hierarchy, protocol stack or system architecture.

The functional areas identified in figure 0 characterize the scope of standards within a group as follows:

**Architecture Model:** Defines the SCSI systems model, the functional partitioning of the SCSI standard set and requirements applicable to all SCSI implementations and implementation standards.

**Device-Type Specific Command Sets:** Implementation standards that define specific device types including a device model for each device type. These standards specify the required commands and behavior that is specific to a given device type and prescribe the requirements to be followed by a SCSI initiator device when sending commands to a SCSI target device having the specific device type. The commands and behaviors for a specific device type may include by reference commands and behaviors that are shared by all SCSI devices.

**Shared Command Set:** An implementation standard that defines a model for all SCSI device types. This standard specifies the required commands and behavior that is common to all SCSI devices, regardless of device type, and prescribes the requirements to be followed by a SCSI initiator device when sending commands to any SCSI target device.

**SCSI Transport Protocols:** Implementation standards that define the requirements for exchanging information so that different SCSI devices are capable of communicating.

**Interconnects:** Implementation standards that define the communications mechanism employed by the SCSI transport protocols. These standards may describe the electrical and signaling requirements essential for SCSI devices to interoperate over a given interconnect. Interconnect standards may allow the interconnection of devices other than SCSI devices in ways that are outside the scope of this standard.

At the time this standard was generated, examples of the SCSI general structure included a number of Interconnects, SCSI Transport Protocols, Shared Command Sets, Device-Type Specific Command Sets and Architecture Models listed in the bibliograpy.

The purpose of this standard is to provide a basis for the coordination of SCSI standards development and to define requirements, common to all SCSI technologies and implementations, that are essential for compatibility with host SCSI application software and device-resident firmware across all SCSI transport protocols. These requirements are defined through a reference model that specifies the behavior and abstract structure that is generic to all SCSI I/O system implementations.

The SCSI Architecture Model - 3 (SAM-3) standard is divided into the following clauses and annexes:

Clause 1 is the scope.
Clause 2 enumerates the normative references that apply to this standard.
Clause 3 describes the definitions, symbols, and abbreviations used in this standard.
Clause 4 describes the overall SCSI architectural model.
Clause 5 describes the SCSI command model element of the SCSI architecture.
Clause 6 describes the events that may be detected by a SCSI device.
Clause 7 describes the task management functions common to SCSI devices.
Clause 8 describes the task set management capabilities common to SCSI devices.
Annex A summarizes the identifier and name definitions of the SCSI transport protocols.
Annex B identifies differences between the terminology used in this standard and previous versions of this standard.

# INFORMATION TECHNOLOGY – SMALL COMPUTER SYSTEM INTERFACE (SCSI) –

## Part 413: Architecture model-3 (SAM-3)

## 1 General

### 1.1 Scope

The set of SCSI (Small Computer System Interface) standards consists of this standard and the SCSI implementation standards described in the precedence requirements (see 1.2). This standard defines a reference model that specifies common behaviors for SCSI devices and an abstract structure that is generic to all SCSI I/O system implementations.

The set of SCSI standards specifies the interfaces, functions and operations necessary to ensure interoperability between conforming SCSI implementations. This part of ISO/IEC 14776 is a functional description. Conforming implementations may employ any design technique that does not violate interoperability.

The following architecture model concepts from previous versions of this standard are made obsolete by this edition:

a) support for the SPI-5 SCSI transport protocol (except for informational listings in Annex A);
b) contingent allegiance;
c) the TARGET RESET task management function and
d) untagged tasks.

### 1.2 Precedence requirements

This standard defines generic requirements that pertain to SCSI implementation standards and implementation requirements. An implementation requirement specifies behavior in terms of measurable or observable parameters that apply to an implementation. Examples of implementation requirements defined in this document are the status values to be returned upon command completion and the service responses to be returned upon task management function completion.

Generic requirements are transformed to implementation requirements by an implementation standard. An example of a generic requirement is the hard reset behavior specified in 6.3.2.

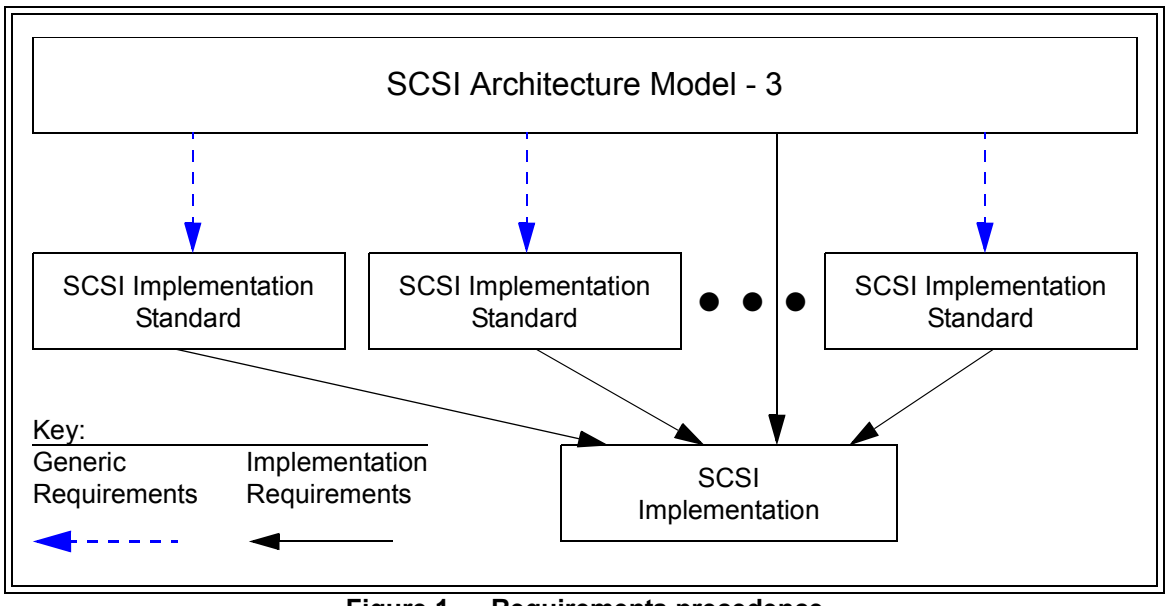


**Figure 1 — Requirements precedence**

As shown in figure 1, all SCSI implementation standards shall reflect the generic requirements defined herein. In addition, an implementation claiming SCSI compliance shall conform to the applicable implementation requirements defined in this standard and the appropriate SCSI implementation standards. In the event of a conflict between this document and other SCSI standards, the requirements of this standard shall apply.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 14776-322, *Information technology – Small computer system interface (SCSI) – Part 322: Block commands-2 (SBC-2)* [T10/1417-D]

ISO/IEC 14776-453, *Information technology – Small computer system interface (SCSI) – Part 453: Primary commands-3 (SPC-3) (under consideration)* [T10/1416-D]

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