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INFORMATION TECHNOLOGY – SMALL COMPUTER SYSTEM INTERFACE (SCSI) –

Part 372: Enclosure Services - 2 (SES-2)

FOREWORD

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International Standard ISO/IEC 14776-372 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

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

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 second title page.

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its content. Users should therefore print this document using a colour printer.

INTRODUCTION

This International Standard documents the commands and parameters necessary to manage and sense the state of the power supplies, cooling devices, displays, indicators, individual drives, and other non-SCSI elements installed in an enclosure. The command set uses the SCSI SEND DIAGNOSTIC and RECEIVE DIAGNOSTIC RESULTS commands (see SPC-4) to obtain configuration information for the enclosure and to set and sense standard bits for each type of element that may be installed in the enclosure.

The standard is organized as follows:

Clause 1 Scope describes the relationship of this standard to the SCSI family of standards.
Clause 2 Normative references provide references to other standards and documents.
Clause 3 Definitions, symbols, abbreviations, and conventions describe terms and conventions used throughout this standard.
Clause 4 SCSI enclosure services model describes the model for SCSI enclosure services peripheral devices, both standalone and attached.
Clause 5 Commands for enclosure services peripheral devices define the command set for a SCSI enclosure services peripheral device.
Clause 6 Parameters for enclosure services devices define diagnostic pages, log pages, and mode parameters and pages specific to SCSI enclosure services peripheral devices.
Clause 7 Element definitions define elements used by several of the diagnostic pages.

SCSI standards family

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.

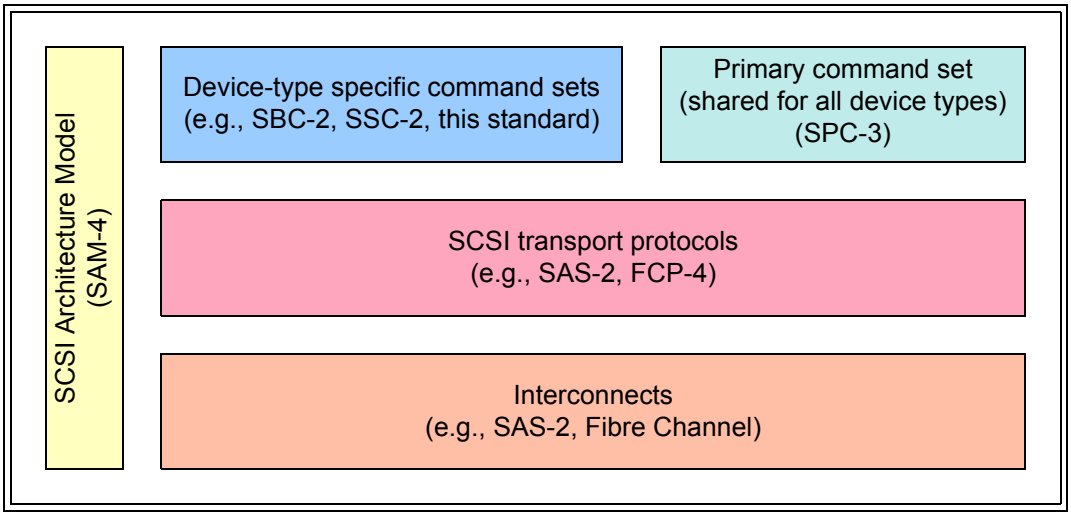

Figure 0 — SCSI document structure

The SCSI document structure 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.

SCSI 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 behaviors that are 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 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 signalling 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.

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

INFORMATION TECHNOLOGY – SMALL COMPUTER SYSTEM INTERFACE (SCSI) –

Part 372: Enclosure Services - 2 (SES-2)

1 Scope

This part of ISO/IEC 14776 documents the commands and parameters necessary to manage and sense the state of the power supplies, cooling devices, displays, indicators, individual drives, and other non-SCSI elements installed in an enclosure. The command set uses the SCSI SEND DIAGNOSTIC and RECEIVE DIAGNOSTIC RESULTS commands (see SPC-4) to obtain configuration information for the enclosure and to set and sense standard bits for each type of element that may be installed in the enclosure.

The following concepts from SES are made obsolete by this standard:

a) Array Control and Array Status diagnostic pages (page code 06h); and
b) secondary subenclosure support in the Help Text, String Out, and String In diagnostic pages.

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

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.

The provisions of the referenced specifications other than ISO/IEC, IEC, ISO and ITU documents, as identified in this clause, are valid within the context of this International Standard. The reference to such a specification within this International Standard does not give it any further status within ISO/IEC. In particular it does not give the referenced specifications the status of an International Standard.

ISO 639-1:2002, *Codes for the representation of names of languages – Part 1: Alpha-2 code*

ISO/IEC 8859-1:1998, *Information technology - 8-bit single-byte coded graphic character sets – Part 1: Latin alphabet No. 1*

ISO/IEC 10646:2003, *Information technology – Universal Multiple-Octet Coded Character Set (UCS)*

ISO/IEC 14165-122:2005, *Information technology – Fibre channel – Part 122: Arbitrated loop - 2 (FC-AL-2)* [1]

ISO/IEC 14776-342:2000, *Information technology – Small computer system interface (SCSI) – Part 342: Controller Commands - 2 (SCC-2)* [2]

ISO/IEC 14776-414, *Information technology – Small computer system interface (SCSI) – Part 414: Architecture Model - 4 (SAM-4)* [3]

T10/1760-D, *Information technology – Serial Attached SCSI - 2 (SAS-2)*

T10/1828-D, *Information technology – Fibre Channel Protocol - 4 (FCP-4)*

T10/1731-D, *Information technology – SCSI Primary Commands - 4 (SPC-4)*

NOTE 1 For more information on the current status of T10 documents, contact the INCITS Secretariat at 202-737-8888 (phone), 202-638-4922 (fax) or via Email at incits@itic.org. To obtain copies of this document, contact Global Engineering at 15 Inverness Way, East Englewood, CO 80112-5704 at 303-792-2181 (phone), 800-854-7179 (phone), or 303-792-2192 (fax), or see http://www.incits.org.

Serial ATA 2.6 (SATA-2) specification. 15 February 2007

NOTE 2 For information on the current status of Serial ATA documents, see the Serial ATA International Organization at http://www.sata-io.org.

1. ANSI INCITS 332-1999
2. ANSI INCITS 318-1998
3. T10/1683_D