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INFORMATION TECHNOLOGY – SMALL COMPUTER SYSTEM INTERFACE (SCSI) –

Part 263: SAS Protocol Layer - 3 (SPL-3)

FOREWORD

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International Standard ISO/IEC 14776-263 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 except as described in 3.4 and 3.5.

A bilingual version of this publication may be issued at a later date.

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 contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The SCSI family of standards provides for many different transport protocols that define the rules for exchanging information between different SCSI devices. This document defines the rules for exchanging information between SCSI devices using a serial interconnect. Other SCSI transport protocol standards define the rules for exchanging information between SCSI devices using other interconnects.

Figure 1 shows the organization of the layers of this document.

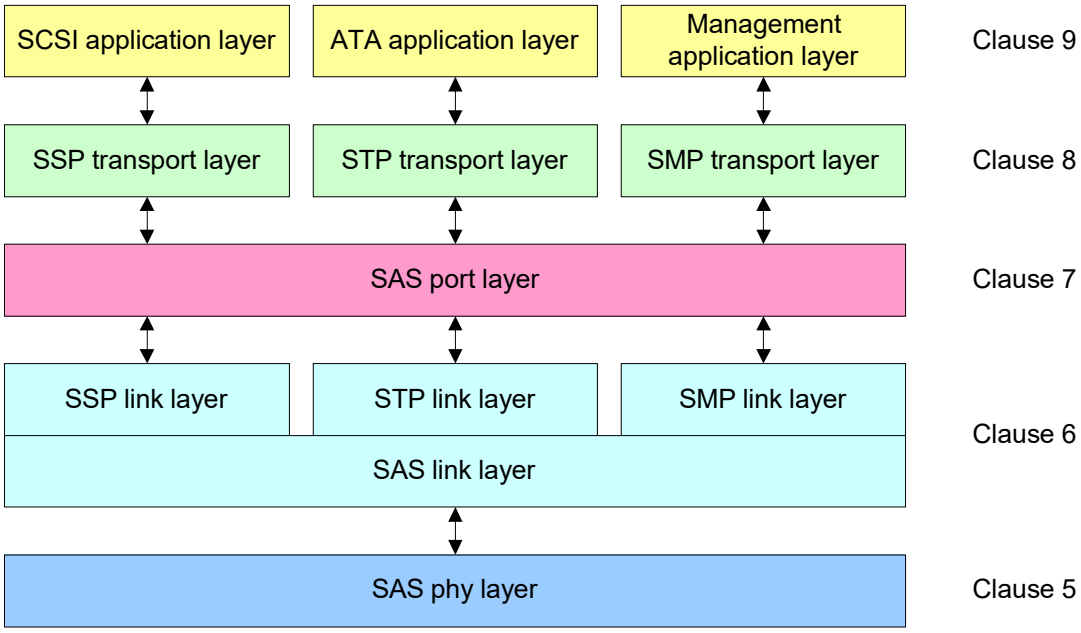

Figure 1 — Organization of this document

SCSI standards family

Figure 2 shows the relationship of this document to the other standards and related projects in the SCSI family of standards.

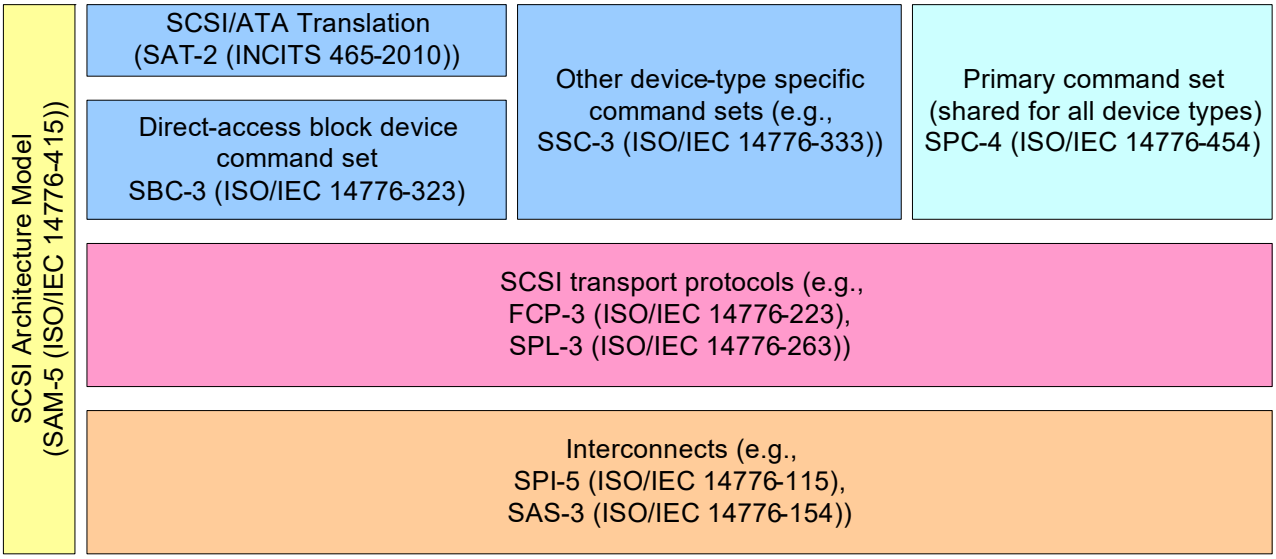

Figure 2 — SCSI document relationships

This document also defines the rules for exchanging information between ATA hosts and ATA devices using the same serial interconnect. Other ATA transport protocol standards define the rules for exchanging information between ATA hosts and ATA devices using other interconnects.

Figure 3 shows the relationship of this document to other standards and related projects in the ATA family of standards.

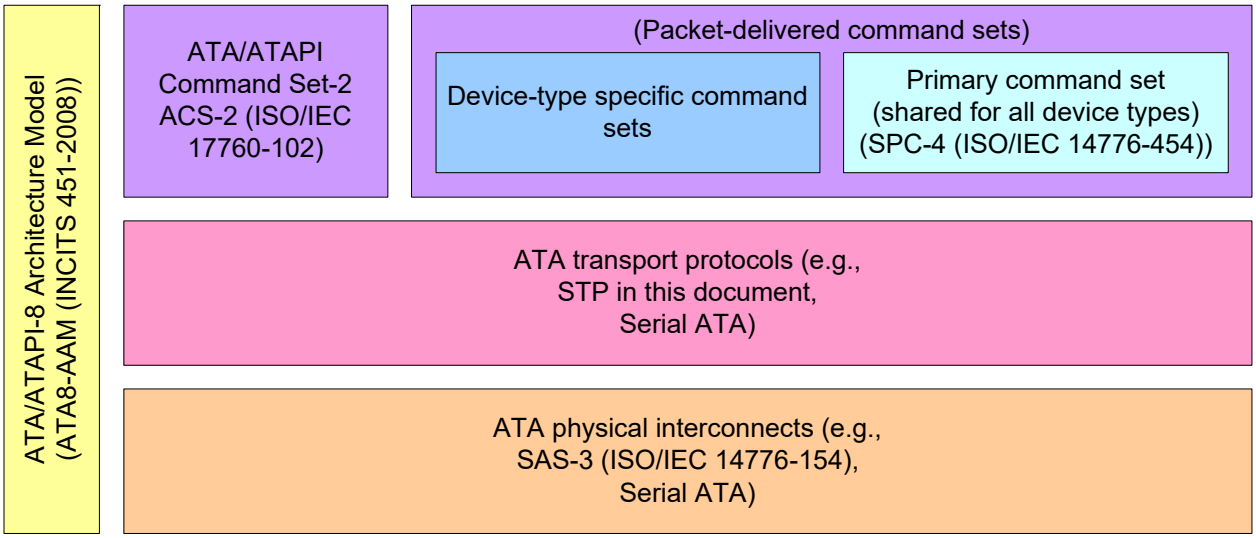

Figure 3 — ATA document relationships

Figure 2 and figure 3 show the general relationship of the documents to one another, and do not imply any hierarchy, protocol stack, or system architecture relationship.

These standards specify the interfaces, functions and operations necessary to ensure interoperability between conforming implementations. This document is a functional description. Conforming implementations may employ any design technique that does not violate interoperability.

INFORMATION TECHNOLOGY – SMALL COMPUTER SYSTEM INTERFACE (SCSI) –

Part 263: SAS Protocol Layer - 3 (SPL-3)

1 Scope

This document defines the protocol layer of the Serial Attached SCSI (SAS) interconnect and three transport protocols that use the SAS interconnect:

a) Serial SCSI Protocol (SSP): a mapping of SCSI supporting multiple initiators and targets;
b) Serial ATA Tunneled Protocol (STP): a mapping of Serial ATA expanded to support multiple initiators and targets; and
c) Serial Management Protocol (SMP): a management protocol.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

Additional availability contact information is provided in Annex L.

ISO/IEC 17760-102, *Information technology - AT Attachment - Part 102: ATA/ATAPI Command Set - 2 (ACS-2)*

ISO/IEC 14776-151, *Information technology - Small Computer System Interface (SCSI) - Part 151: Serial Attached SCSI - 1.1 (SAS-1.1)*

ISO/IEC 14776-323, *Information technology - Small Computer System Interface (SCSI) - Part 323: SCSI Block Commands - 3 (SBC-3)*

ISO/IEC 14776-154, *Information technology - Small Computer System Interface (SCSI) - Part 154: Serial Attached SCSI - 3 (SAS-3)*

ISO/IEC 14776-454, *Information technology - Small Computer System Interface (SCSI) - Part 454: SCSI Primary Commands - 4 (SPC-4)*

INCITS 451-2008, *AT Attachment - 8 ATA/ATAPI Architecture Model (ATA8-AAM)*

INCITS 515, *Information technology - SCSI Architecture Model - 5 (SAM-5)* (planned as ISO/IEC 14776-415)

INCITS 518, *Information technology - SCSI Enclosure Services - 3 (SES-3)* (planned as ISO/IEC 14776-373)

For information on the current status of the listed documents, or regarding availability, contact the indicated organization.

Serial ATA Revision 3.1 (SATA). 18-July-2011 [1]

SFF-8485, *Serial GPIO (SGPIO) Bus* [2]

1. Serial ATA specifications are available from the Serial ATA International Organization (see http://www.sata-io.org)
2. SFF specifications are available from the SNIA SFF Technology Affiliate (see http://www.snia.org/sff).

Bibliography

ISO/IEC 14776-150, *Information technology - Small Computer System Interface (SCSI) - Part 150: Serial Attached SCSI (SAS)*

ISO/IEC 9899:1999, *Information technology - Programming languages - C*

ISO 80000-2, *Quantities and units - Part 2: Mathematical signs and symbols to be used in the natural sciences and technology*

INCITS 457-2010, *Information technology - Serial Attached SCSI - 2 (SAS-2)*

INCITS 465-2010, *Information technology - SCSI/ATA Translation - 2 (SAT-2)*

OMG Unified Modeling Language (UML) Specification. Version 1.5, March 2003 [1]

1.For more information on the UML specification, contact the Object Modeling Group (see http://www.omg.org)

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