Accredited Standards Committee*
National Committee for Information Technology Standards (NCITS)

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Date:	June 19, 1998
Reply to:	John Lohmeyer

To: T10 Membership
From: John Lohmeyer and George Penokie
Subject: SPI-3 Working Group Meeting -- June 19, 1998
Huntington Beach, CA

Agenda

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Results of Meeting

1. Opening Remarks

John Lohmeyer, the T10 Chair, called the meeting to order at 9:05 a.m., Friday June 19, 1998. He thanked Skip Jones of QLogic for hosting the meeting and providing lunch.

As is customary, the people attending introduced themselves and a copy of the attendance list was circulated. John noted that standards are not permitted to contain known patented material unless the patent holder agrees to comply with the ANSI patent policy.

2. Approval of Agenda

The draft agenda was approved.

3. Attendance and Membership

Attendance at working group meetings does not count toward minimum attendance requirements for T10 membership. Working group meetings are open to any person or organization directly and materially affected by T10's scope of work. The following people attended the meeting:

Name	S	Organization	Electronic Mail Address
Mr. Lawrence J. Lamers	P	Adaptec, Inc.	ljlamers@ieee.org
Mr. Vincent Bastiani	A#	Adaptec, Inc.	bastiani@corp.adaptec.com
Mr. Richard Moore	A#	Adaptec, Inc.	richard_moore@corp.adaptec.com
Mr. Edward Haske	O	CMD Technology	haske@cmd.com
Mr. Robert C. Elliott	P	Compaq Computer Corp.	Robert.Elliott@compaq.com
Mr. George Penokie	P	IBM Corp.	gop@us.ibm.com
Mr. Allen Dela Cruz	A	LSI Logic Corp.	allend@lsil.com
Mr. Skip Jones	P	QLogic Corp.	sk_jones@qlc.com
Mr. Ting Li Chan	A	QLogic Corp.	t_chan@qlc.com
Mr. William Dennin	V	QLogic Corp.	w_dennin@qlc.com
Mr. Greg Goodemote	V	QLogic Corp.	g_goodemote@qlc.com
Mr. Chuck Micalizzi	V	QLogic Corp.	c_micalizzi@qlc.com
Mr. Fardad Siavoshi	V	QLogic Corp.	f_siavoshi@qlc.com
Mr. Thinh Tran	V	QLogic Corp.	th_tran@qlc.com
Mr. Mark Evans	A	Quantum Corp.	mark.evans@quantum.com
Mr. James McGrath	A#	Quantum Corp.	JMCGRATH@QNTM.COM
Mr. Duncan Penman	V	Quantum Corp.	duncan.penman@qntm.com
Mr. Bruce Leshay	V	Quantum Corp.	bleshay@tdh.qntm.com
Mr. Richard Uber	V	Quantum Corp.	duber@tdh.qntm.com
Mr. Thom Steury	V	Rancho Technology	tsteury@rancho.com
Mr. Gene Milligan	P	Seagate Technology	Gene_Milligan@notes.seagate.com
Mr. Daniel (Dan) F. Smith	O	Seagate Technology	daniel_f_smith@notes.seagate.com
Mr. Mayank R. Patel	V	Seagate Technology	patel@cdg.stsv.seagate.com
Mr. Bill Gintz	V	Seus, Inc.	wcgintz@ix.netcom.com
Mr. John Lohmeyer	P	Symbios, Inc.	lohmeyer@ix.netcom.com
Mr. Frank Gasparik	V	Symbios, Inc.	frank.gasparik@symbios.com
Mr. Tracy Spitler	V	Symbios, Inc.	tracy.spitler@symbios.com
Mr. Brett Philip	O	Temp Flex Cable Inc.	bphilip@templex.com
Mr. Paul D. Aloisi	P	Unitrode Corporation	aloisi@unitrode.com
Mr. Jeffrey L. Williams	P	Western Digital Corporation	Jeffrey.L.Williams@wdc.com
Mr. Gregory Kapraun	A	Western Digital Corporation	Gregory.D.Kapraun@wdc.com

31 People Present

Status Key: P - Principal
A,A# - Alternate
O - Observer
L - Liaison
V - Visitor

4. SPI-3 Topics

4.1 CRC Proposals

Jim McGrath presented the portions of 98-177r2 related to CRC. There was a discussion about whether the pad bytes before the CRC should be reserved (i.e. zero) or ignored (i.e. vendor specific). No consensus was reached and a straw poll indicated 6 favored ignored and 4 favored reserved. This issue needs to be resolved at the next working group meeting.

The group agreed that the ACK has to be deasserted before any phase change can occur.

4.2 Domain Validation

Jim McGrath spoke about the changes made in 98-176r3 as a result of a conference call on June 8th.

There was also some discussion about skew compensation. We will eventually need to agree on whether transmitters, receivers, or initiators perform the skew compensation function. Also, simple expanders complicate the picture; do they get involved with skew compensation?

4.3 QAS

George Penokie presented foils on a QAS timing example (98-159r1). It was noticed that there was an apparent problem with when the BSY signal is released. Initially, it appeared that existing devices might respond to selection during the QAS protocol, however no existing device will participate in QAS so its ID will not be present during the QAS protocol. Therefore existing devices will not see a false selection during QAS. New devices will need to be designed so that they do not respond to selection during QAS if they have arbitrated and lost. That is, they need to qualify selection with all the old selection criteria plus the state information of the QAS protocol.

Several minor changes were made to 98-159r1 and George agreed to prepare rev 2 for the next mailing.

4.4 Parallel Protocol Request Negotiation

This item was deferred until the July meeting.

4.5 Fast-80

Richard Uber presented 98-192r0, Experimental Results on Fast-80 SCSI Signals. Duncan Penman presented 98-193r0, Fast-80 Simulated Host Waveforms and 98-194r0, Fast-80 Target Source Waveforms. Duncan noted that so far ISI has not been a problem with the cables that he is using.

Richard Uber presented 98-195, ISI Testing at 25 Meters.

It was noted that the recommendation to use glitch filters in SPI-2 only appears in the section on single-ended drivers and receivers. This probably was an error as most people remembered that the glitch filter recommendation was intended to apply to all driver/receiver types. The working group unanimously recommended that the wording recommending usage of glitch filters be added into the LDV section of SPI-3.

Richard recommended that the stub length be reduced from 10 cm to 5 or 6 cm. Devices that include a non-disabled terminator could continue to use a 10 cm stub length.

Richard noted that current technology multimode terminators use multiple packages (usually 9 lines terminated per chip). Process variations from chip to chip can affect signal margins. He recommended that LVD (not multimode) terminators be used in configurations where maximum signal margins are needed.

Optimal point-to-point performance can be achieved using round cables with characteristic impedance that matches the terminator impedance.

Gene Milligan presented 98-153r2. He plans to change the system deskew delay on Fast-10, Fast-20, Fast-40, and Fast-80 to 45nsec. Anyone who has a problem with the change should being it up at the next SPI-3 working group meeting.

5. Meeting Schedule

The next meeting of SPI-3 Working Group will be **Tuesday**, July 14, 1998 from 9 am to 6 pm in Portland, ME at the Holiday Inn By the Bay (207-775-2311), hosted by Digital Equipment Corp.

6. Adjournment

The meeting was adjourned at 4:30 p.m. on Friday June 19, 1998.