Accredited Standards Committee*
NCITS, Information Technology

To: Membership of T10

From: Lawrence J. Lamers (ljlamers@ix.netcom.com)

Subject: Minutes of SCSI Protocol Study Group
            July 15, 1997 --- Colorado Springs, CA

Agenda

1. Opening Remarks

2. Attendance and Membership, Introductions

3. Approval of Agenda

4. Approval of Minutes

5. Document Distribution

6. Review of Old Action Items

7. Proposals
    7.1 SCSI LFP – Quick Arbitrate & Select Proposal (97-199) [Kosco]
    7.2 SCSI LFP – Broadcast Command Packet Proposal (97-200) [Kosco]
    7.3 Status Message Simplification for SCSI LFP (97-198) [Asami]
    7.4 Comments on SMS (97-205) [Lohmeyer]
    7.5 CRC Attach Proposal for LFP SCSI protocol (97-197) [Asami]
    7.6 Performance Estimates for Low Fat Protocol (97-206) [Wilson]

8. Call for Patents

9. Action Items

10. Meeting Schedule

11. Adjournment

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1. Opening Remarks

Larry Lamers convened the meeting at 1:30 p.m. He thanked John Lohmeyer of Symbios Logic, Inc. for hosting the meeting.

As is customary, the people attending introduced themselves. A copy of the attendance list was circulated for attendance and corrections.

It was stated that the meeting had been authorized by T10 and would be conducted under the NCITS and T10 rules and procedures. Ad-hoc meetings take no final actions, but prepare recommendations for approval by the T10 technical committee. The voting rules for the meeting are those of the parent committee, T10. For the ad hoc, other than straw votes, the voting rules are: one vote per participating company.

The minutes of this meeting will be posted to the T10 BBS and the T10 Reflector and will be included in the next T10 committee mailing.

2. Attendance and Membership, Introductions

Attendance at working group meetings does not count toward minimum attendance requirements for T10 membership. Working group meetings are open to any person or company to attend and to express their opinion on the subjects being discussed.

The following people attended the meeting.

Name	Company
Larry Lamers	Adaptec
Tak Asami	Adaptec
Vince Bastiani	Adaptec
Bart Raudebaugh	Ancot
Doug Hagerman	DEC
Keith W. Parker	Diogenes SCSI
Roger Cummings	DPT
Dan Vohar	Fujitsu
Mark Mammang	Fujitsu
Anthony Yang	Hitachi
George Penokie	IBM
Edward Gardner	Ophidian Designs
Skip Jones	Qlogic
Jim McGrath	Quantum
Richard Uber	Quantum
Gene Milligan	Seagate Technology
Gerry Houlder	Seagate Technology
Dave Guss	Silicon Systems
Jan Rebalski	Sony Electronics, Inc
Dale Lafollette	Storage Tek
Erich Oetting	Storage Tek
Andy Brown	Symbios Logic
Brian Day	Symbios Logic
Graeme Weston Lewis	Symbios Logic
John Lohmeyer	Symbios Logic
Ralph Weber	Symbios Logic
Rod DeKonig	Symbios Logic
Arlan Stone	Unisys
Paul Aloisi	Unitrode
Greg Kapraun	Western Digital
Jeff Williams	Western Digital

3. Approval of Agenda

The agenda was approved as modified.

4. Approval of Minutes

Not applicable to this meeting..

5. Document Distribution

T10/97-197r0 CRC Attach Proposal for LFP SCSI protocol
T10/97-198r0 Status Message Simplification for SCSI LFP
T10/97-199r0 SCSI LFP – Quick Arbitrate & Select Proposal
T10/97-200r0 SCSI LFP – Broadcast Command Packet Proposal
T10/97-205r0 Comments on Status/Message Simplification
T10/97-206r0 Performance Estimates for Low Fat Protocol

6. Review of Old Action Items

None.

7. Proposals

Tak Asami made a presentation on the four proposals comprising the low-fat protocol. There was a philosophical discussion on approach – why not go with the unused phases and packetize the protocol ala GPP? The reasons given were that this approach is more compatible with today's protocol and packetized protocol would require frame buffers.

7.1 SCSI LFP – Quick Arbitrate & Select Proposal (97-199) [Kosco]

Comments:
1) add note to not do QAS with legacy initiators
2) the 0x55 code to define start of QAS is not needed (this needs further investigation; it may be possible for a legacy device to go bus free in a fashion that looks like QAS)
3) the target does not need to drive the ID – this saves 400 ns
4) change the fairness algorithm to that specified in SPI-2
5) change the start of QAS to release of ACK – some initiators hold ACK for extended period
6) may need mechanism to throttle QAS to allow non-QAS targets access to bus
7) need to describe the method an initiator could use to manage a mixed bus

7.2 SCSI LFP – Broadcast Command Packet Proposal (97-200) [Kosco]

Comments:
1) need a response mechanism for queue full
2) need to investigate possible patent issue with two-byte wide transfers

7.3 Status Message Simplification for SCSI LFP (97-198) [Asami]

The consensus was that this proposal did not represent enough return on investment and should be shelved for the time being.

7.4 Comments on SMS (97-205) [Lohmeyer]

See item 7.3.

7.5 CRC Attach Proposal for LFP SCSI protocol (97-197) [Asami]

Comments:
1) change the error recovery process to be like parity errors
2) need to deal with parameter and sense data
3) need to look at some method to support tapes
4) the CRC algorithm needs further review – it was pointed out that there may be more appropriate algorithms.

There was question raised on why are not all phases covered? This ties in with the idea of using a GPP like protocol utilizing the two unused phases.

7.6 Performance Estimates for Low Fat Protocol (97-206) [Wilson]

The performance analysis needs a review to included units of measure and a better explanation of data presented to remove ambiguities. Also, the IOs per second should be analyzed.

8. Call for Patents

The chair requested that anyone aware of any patents required for the proposals be disclosed in accordance with the ANSI patent policy. See 7.2.

9. Action Items

1) Tak Asami and Larry Lamers to revise the proposals addressing the comments.
2) Larry Lamers to inquire regarding the patent on two byte wide transfers.

10. Meeting Schedule

The next study group is scheduled for September 9, 1997 starting at 1:30pm.

11. Adjournment

The meeting adjourned at 4:30 p.m.