Accredited Standards Committee*
NCITS, Information Technology

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Reply to: Larry Lamers

To: Membership of T10

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

Subject: Minutes of SCSI Protocol Study Group
            September 9, 1997 --- Nashua, NH

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. Old Business
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    7.2 SCSI LFP – Broadcast Command Packet Proposal (97-200) [Kosco]
    7.3 CRC Attach Proposal for LFP SCSI protocol (97-197) [Asami]
    7.4 Performance Estimates for Low Fat Protocol (97-206) [Wilson]

8. Call for Patents

9. New Business
    9.1 Proposal for Contingent Allegiance / ACA (97-225) [Milligan]
    9.2 Packetizing SPI (97-230) [Penokie]
    9.3 LFP INQUIRY and MODE SENSE data format (97-241) [Lamers]
    9.4 () []

10. Action Items

11. Meeting Schedule

12. Adjournment

1. Opening Remarks

Larry Lamers convened the meeting at 1:30 p.m. He thanked Paul Aloisi of Unitrode 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
Ed Haske	CMP
Bill Galloway	Compaq
Peter Johansson	Congruent Software, Inc.
Charles Monia	Digital Equipment
Tom Coughlan	Digital Equipment
Dan Voher	FCPA Fujitsu
Mark Hammang	FCPA Intellistor
George Penokie	IBM
Edward Gardner	Ophidian Designs
Skip Jones	Qlogic
Bruce Leshay	Quantum
Pat Mcarrch	Quantum
Daniel Smith	Seagate Technology
Gene Milligan	Seagate Technology
Gerry Houlder	Seagate Technology
Dave Guss	Silicon Systems
Jan Rebalski	Sony Electronics, Inc
David Peterson	Storage Tek
Erich Oetting	Storage Tek
Bob Snively	Sun Microsystems
Graeme Weston Lewis	Symbios Logic
John Lohmeyer	Symbios Logic
Ralph Weber	Symbios Logic
Arlan Stone	Unisys
Ken Hallam	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

Minutes of the previous meeting were approved unanimously.

5. Document Distribution

T10/97-197r1 CRC Attach Proposal for LFP SCSI protocol
T10/97-199r1 SCSI LFP – Quick Arbitrate & Select Proposal
T10/97-200r1 SCSI LFP – Broadcast Command Packet Proposal
T10/97-241r0 LFP INQUIRY and MODE SENSE data format
T10/97-225r0 Proposal for Contingent Allegiance / ACA
T10/97-230r0 Packetizing SPI

6. Review of Old Action Items

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

7. Old Business

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

Tak Asami reviewed the changes based on input from the last study group.

Bruce Leshy of Quantum noted that a problem occurs with two close devices and one far away seeing different values on the bus during asynch handshakes. The 0x55 may be missed by some devices in such a scenario. One suggestion was to specify a minimum REQ width.

The retention of winner's ID needs to be corrected in the proposal.

The point release (not deassertion) of BSY needs to be defined.

There is still a desire to see host management annex.

The QAS protocol needs to be validated for use with expanders (turn-around issue in expander).

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

Tak Asami reviewed the queue full handling.

How to handle REQ pulse with expanders? Does it propagate or remain within the bus segment?

Need to add specification for REQ width and use lowest common denominator of negotiated speeds for ACK width. There was concern expressed for the effect the different offsets would have.

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

Tak Asami reviewed the CRC attach changes. The change to make CRC at end of every command instead of at end of every disconnect means that the device has to save context for each disconnect for each I/O process.

The was a strong desire to have end to end CRC. It needs an option to either store it on the media as is or regenerate. This almost mandates going back to a CRC per block for user data and CRC at end of parameter data transfers. This still leaves some tape devices in need of a solution.

George reported that IBM has an end to end CRC for tape devices. He will request that the Tuscon folks submit a proposal.

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

Larry Lamers reported that a revised performance analyses is expected at the next study group.

Bill Galloway reported that he had done some performance analysis. This indicated that a significant amount of the overhead is associated with host software.

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. New Business

9.1 Proposal for Contingent Allegiance / ACA (97-225) [Milligan]

NOTE: This topic was covered during the study group as a courtesy to Gene Milligan. Future discussions will be held in the general working group meeting.

Gene Milligan reported that the proposal purports to document the agreements from a previous meeting in a format that reflects standards language.

The group recommend changes to SPC-2 for glossary be accepted.

The proposal was to add a SEXE bit or QERR field of 10b so that tasks for other initiators not be blocked by a CHECK CONDITION returned to one initiator.

Ralph Weber offered an alternate proposal that would define a task set per initiator. This has the beauty of maintaining the task set rules. The group seemed to favor this direction so Gene agreed to modify his proposal in this manner for the next meeting. He will add a 3-bit field to the Control Mode page and define a value for task set per logical unit and a task set per initiator.

See document 92-141r8 for historical reference on task set definition.

Questions:
  Task set per initiator - do they run independently? Yes.
  How to clear all task sets in a target?
  If initiators attempt to set conflicting values in mode pages is the requested change is rejected?
  Is delivery on a different port a different initiator? Per SAM yes.
  When does an CA/ACA condition get setup in target with deferred error?.

Item b) needs some additional work to get recast into task set definitions to improve consistency within the draft.

9.2 Packetizing SPI (97-230) [Penokie]

George Penokie presented a proposal for a packet protocol on parallel SCSI. This packet protocol is based on Fibre Channel Protocol (FCP). The proposal was well received. Several suggestions were made including one to make it more closely emulate FCP. The proposal was constructed with a view that fibre channel host were connecting to parallel peripherals.

A revised proposal will be presented at the next study group.

9.3 LFP INQUIRY and MODE SENSE data format (97-241) [Lamers]

Larry Lamers presented the proposal that defines the bits to report and control the LFP features.

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10. Action Items

3) Proposer's to revise proposals.

11. Meeting Schedule

The next study group is scheduled for November 4, 1997 starting at 1:30pm.

12. Adjournment

The meeting adjourned at 6:00 p.m.