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

| **Doc. No.:** T10/99-137r1 |
| --- |

**Date:** March 23, 1999
**Reply to:** John Lohmeyer

To:          T10 Membership
From:        Ralph Weber / John Lohmeyer
Subject:     T10 Plenary Meeting #30 -- March 11, 1999
             Harrisburg, PA

# Agenda

1.  Opening Remarks
2.  Approval of Agenda
3.  Attendance and Membership
4.  Approval of Minutes - November '98 Meeting Palm Springs, CA (T10/98-234r1)
5.  Document Distribution
6.  Call for Patents
7.  Review of Old Action Items
8.  Project Status Reports
    8.1   Project Status Summary and NCITS/OMC Liaison [Lohmeyer]
    8.2   SPI Amendment (SPIAmnd) {Project 0855-D} [Johansson/Lamers]
    8.3   SCSI Common Access Method - 3 (CAM-3) Status {Project 990-D} [Dallas]
    8.4   SCSI-3 Stream Commands (SSC) Status {Project 997-D} [Peterson]
    8.5   SCSI Parallel Interface - 2 (SPI-2) {Project 1142-D} [Ham/Penokie]
    8.6   SCSI Enhanced Parallel Interface (EPI) Technical Report {Project 1143-D} [Ham]
    8.7   SCSI Fibre Channel Protocol - 2 (FCP-2) {Project 1144-D} [Snively]
    8.8   Serial Bus Protocol - 2 (SBP-2) {Project 1155-D} [Johansson]
    8.9   SCSI Architecture Model - 2 (SAM-2) {Project 1157-D} [Weber]
    8.10  SCSI-3 Enclosure Commands (SES) {Project 1212-D} [Snively]
    8.11  High Availability Profile (HAP) Technical Report {Project 1224-DT} [open]
    8.12  SCSI Controller Commands - 2 (SCC-2) {Project 1225-D} [Penokie]
    8.13  Multimedia Command Set - 2 (MMC-2) Status {Project 1228-D} [Roberts]
    8.14  SCSI Primary Commands - 2 (SPC-2) Status {Project 1236-D} [Weber]
    8.15  Reduced Block Commands (RBC) {Project 1240-D} [McLean]
    8.16  SCSI Socket/SSL Services Command Set (SSS)  {Project 1246-D} [Parker]
    8.17  SCSI Parallel Interface - 3 (SPI-3) {Project 1302-D} [Penokie]
    8.18  SCSI Enclosure Profile (SEP) Technical Report {Project 1303-DT} [Weber]
9.  Old Business
    9.1   Resolution of RBC Letter Ballot comments
    9.2   Make Flag bit in CDB Control byte obsolete (98-241r1) [Snively]
    9.3   Making the Communications command set obsolete [Oetting]
10. New Business
    10.1  Actions on Working Group Recommendations
          10.1.1 Echo Mode for READ and WRITE BUFFER (98-184r6) [Lamers]
          10.1.2 Removing SCAM from SPI-3 (98-244r0) [Elliott]
          10.1.3 Clarification of MODIFY DATA POINTER message (99-109r0) [Lohmeyer]
          10.1.4 "May Not" Clarifications in SPI-3 (98-246r1) [Elliott]

# Results of Meeting

## 1.  Opening Remarks

John Lohmeyer, the T10 Chair, called the meeting to order at 9:00 a.m., Thursday March 11, 1999.  He thanked John Hill and Beth Shutt of AMP for hosting the meeting.

John said that NCITS Subgroup Membership forms and the T10 Mailing Subscription form were available on the document table.  He said that people should use the NCITS forms to insure the NCITS Secretariat has the latest membership information.  These forms should be mailed directly to the NCITS Secretariat.

As is customary, the people attending introduced themselves and a copy of the attendance list was circulated. Copies of the draft agenda and general information on T10 were made available to those attending.

## 2.  Approval of Agenda

The draft agenda was approved with the following additions/changes:

    9.2      Make Flag bit in CDB Control byte obsolete (98-241r1) [Snively]
    10.1.1   Echo Mode for READ and WRITE BUFFER (98-184r6) [Lamers]
    10.1.4   "May Not" Clarifications in SPI-3 (98-246r1) [Elliott]
    10.1.5   Synchronous Transfer Timeout Function in SPC-2 (99-102r5) [Lamers]
    10.1.6   Message Information Unit Definition in SPI-3 (99-104r1) [Penokie]
    10.1.7   Clarification of SDTR/WDTR and PPR interaction in SPI-3 (99-108r3) [Lohmeyer]
    10.1.8   Synchronous ATN Timing in SPI-3 (99-112r2) [Galloway]
    10.1.9   DIFFSENS Timing in SPI-3 (99-113r2) [Galloway]
    10.1.10  30 mV vs. 60 mV in figures 44 and 45 in SPI-3 (99-127r4) [Aloisi]
    10.1.11  No zero length datain SPI-3 (99-132r0) [Galloway]
    10.1.12  Timing for SCSI RST line in SPI-3 (99-133r0) [Galloway]
    10.1.13  PPR negotiation changes in SPI-3 (99-134r1) [Galloway]
    10.1.14  DT CRC Description in SPI-3 (99-157r1) [Leshay]
    10.1.15  Very Long CDBs in SPI-3 and FCP-2 (99-158r0) [Snively]
    10.1.16  Very Long CDBs in SAM-2 and SPC-2 (98-188r2) [Houlder]
    10.1.17  Version numbers in SPC-2 (99-110r1) [Milligan]
    10.1.18  SPI-3 Inquiry data in SPC-2  (99-130r1) [Penokie]
    10.1.19  Extended Copy command in SPC-2 (99-143r0) [Snively]
    10.1.20  Legacy & Persistent Reservations Interactions in SPC-2 (99-146r1) [Snively]
    10.3     Recommendation that NCITS withdraw ANSI/ISO 9315:1989 [1994] Interfaces between flexible disk
             cartridges and their host controllers
    14.2     Down Under [Allan]
    14.3     November 1999 and November 2000 Meeting Dates [Lamers]

The following agenda items were added/revised during the course of the meeting:

    10.5     Making TTD and CIOP Obsolete (99-147r0) [Snively]
    10.6     Add 4 reserved bytes to the L_Q Information Unit [Lamers]

## 3.  Attendance and Membership

The membership requirements were reviewed.  NCITS rules permit one vote per organization.  An individual from a new organization must attend two out of three consecutive plenary meetings.  He/she may apply for voting membership the second meeting via a letter to the Chair of T10.  The individual may vote at the second plenary meeting. Working group meetings do not count toward attendance requirements.  For the purposes of letter ballot votes, a person attending their first meeting may become a voting member immediately following that meeting, provided their NCITS fees have been paid.

To maintain membership, organizations must pay the NCITS Service Fee ($300).  The ANSI International Program Fee (also $300) is billed at the same time.  The following organizations were terminated (deleted from the T10 membership list) for failure to pay the 1999 fees:

Dallas Semiconductor
Data General / Clariion

SyQuest Technology, Inc.

John briefly discussed the mailing fees.  Complete pricing information is contained in the 1999 membership form (available at ftp://ftp.symbios.com/t10/pub/standards/io/t10/mem_form.txt).

The Chair said he had sent letters to 13 people from 6 organizations informing them that their membership was in jeopardy due to non-attendance (see 98-026r0) and that their membership would be terminated if they did not attend this meeting. The following organizations were in attendance jeopardy:

Circuit Assembly Corp.
Data General / Clarion
Hewlett Packard Co.
Honda Connectors
Philips Electronics
SyQuest Technology, Inc.

All of the organizations were present except:

Data General / Clarion
SyQuest Technology, Inc.

These organizations were already terminated for failure to pay the 1999 fees.

The following organization requested new (or reinstated) membership at this meeting:

BREA Technologies, Inc.
Panasonic Technologies, Inc

The T10 membership during the meeting was 47 organizations down from 48 organizations following the last meeting.  Enclosure (1) is the list of the people present at the meeting and enclosure (2) is the current T10 membership list.


## 4.   Approval of Minutes - November '98 Meeting Palm Springs, CA (T10/98-234r1)

The minutes were approved as written.


## 5.   Document Distribution

Members who have any problems with their mailing subscription should deal directly with Judy Gales (jgales@itic.org) (202) 626-5741.

John Lohmeyer requested that all documents for the next mailing be in his hands in electronic format by 10:30 a.m. on Thursday March 18, 1999.  Documents received after this time will go into a subsequent mailing.

John reminded the committee of the requirements for document submission.  Since T10 meets its document retention requirements by preparing mailings, documents included in the mailing must be suitable for archiving. This means that native-format and/or Portable Document Format (PDF) electronic originals with proper identification must be submitted.

The electronic copies can be sent directly to John by e-mail (at lohmeyer@ix.netcom.com), or they can be transferred by ftp protocol to ftp.symbios.com and placed in the /pub/standards/io/incoming directory. In the latter case, please also send e-mail to John informing him of the file name and location of the file.

As usual, minutes are also available on the SCSI BBS (719-533-7950), the T10 World Wide Web page (see below), and will be distributed to the T10 Reflector.

To be added to the T10 Reflector, send an e-mail to majordomo@symbios.com with the line 'subscribe t10' in the message body.  The NCITS Secretariat maintains a World Wide Web page at http://www.ncits.org/.  LSI Logic maintains a World Wide Web page on behalf of T10 at http://www.symbios.com/t10/.

The current document register is enclosure (3).  The T10 document register is also available on the SCSI BBS in file DR.TXT and at ftp://ftp.symbios.com/pub/standards/io/t10/dr.txt.

## 6.   Call for Patents

This is a regular agenda item to identify any potential patent issues with developing standards.  A call was made and no one identified any patents issues.

A document is available from ANSI, "Procedures for the Development and Coordination of American National Standards", at no charge.  This document is also on the WWW at http://www.ncits.org/help/ansi_sdo.html.  Section 1.2.11 contains the ANSI patent policy.  Amy Marasco manages patent issues for ANSI and can be contacted at amarasco@ansi.org or 212-642-4954.

John Lohmeyer noted the receipt of a patent statement letter from Adaptec (99-138).

## 7.   Review of Old Action Items

266)    All project editors will return the project abstract forms regarding their project(s) to the Chair. *(Carry over)*
290)    Bob Snively will notify the T10 reflector of his proposal to make the Flag bit obsolete.  *(Complete)*
291)    John Lohmeyer will notify NCITS that T10 has recommended that project 1224-DT (HAP) be terminated. *(Complete)*
292)    John Lohmeyer will check the ANSI publication status of SES and SCC-2.  *(Complete)*
293)    Erich Oetting will notify the T10 reflector of the SSC working group proposal to make the Communications command set obsolete.  *(Complete)*

John Lohmeyer noted that NCITS has stated a requirement that the project abstract information described in action item 266 be delivered prior to or with delivery of the project document for public review.

## 8.   Project Status Reports

### 8.1  Project Status Summary and NCITS/OMC Liaison [Lohmeyer]

John Lohmeyer said that the current T10 project status summary was included in the T10 Information Packages and will be included in the mailing as usual.

### 8.2  SPI Amendment (SPIAmnd) {Project 0855-D} [Johansson/Lamers]

Larry Lamers reported that the amendment has been published.  This item will be removed from future agendas.

**8.3  SCSI Common Access Method - 3 (CAM-3) Status {Project 990-D} [Dallas]**

John Lohmeyer took an action item to add an item to the May Plenary agenda to withdraw the CAM-3 project and to notify the project editor of this pending action.

**8.4  SCSI-3 Stream Commands (SSC) Status {Project 997-D} [Peterson]**

Erich Oetting reported on the activities of the SSC working group and the FC-Tape working group meetings.  John Lohmeyer noted that equivalent information can be found in the liaison report from Dale LaFollette (99-159).

**8.5  SCSI Parallel Interface - 2 (SPI-2) {Project 1142-D} [Ham/Penokie]**

George Penokie reported that SPI-2 has been published.  This item will be removed from future agendas.

**8.6  SCSI Enhanced Parallel Interface (EPI) Technical Report {Project 1143-D} [Ham]**

John Lohmeyer reported that EPI is at ANSI for publication.

**8.7  SCSI Fibre Channel Protocol - 2 (FCP-2) {Project 1144-D} [Snively]**

Bob Snively reported that FCP-2 revision 1 will be available for the committee mailing and will reflect the FC Tape updates.  Bob discussed the listing of changes in FCP-2 that he is maintaining in a separate committee document. Concerns were raised regarding incorporation of changes in FCP-2 without T10 votes.  Bob stated that FCP-2 is not stabilized (still in working draft form) and that T10 votes should not be necessary.

**8.8  Serial Bus Protocol - 2 (SBP-2) {Project 1155-D} [Johansson]**

John Lohmeyer reported that SBP-2 is at ANSI for publication (and may in fact be published, but he cannot confirm it).

**8.9  SCSI Architecture Model - 2 (SAM-2) {Project 1157-D} [Weber]**

Ralph Weber reported that, due to work overload, he has been unable to turn a SAM-2 revision since November. He noted that an additional person is being hired and that should allow more time to work on SAM-2 revisions.  He described plans to make a SAM-2 revision after this meeting, to include the following:  changes noted during the September meetings not related to multi-port issues, replacing most uses of 'SCSI-3' with 'SCSI', changing HiSupport to HiSup (standard Inquiry data bit name), and removing references to Search Data commands (which are obsolete in SBC).  If approved at this meeting, the following documents will be incorporated in the next SAM-2 revision: 98-188r2 (Very Long CDBs) and 98-241r1 (Flag bit obsolete).

Ralph explained that a revision of SAM-2 containing the agreed multi-port changes would not be available until after the mailing cutoff date.  He stated an intention to prepare a SAM-2 draft containing the agreed multi-port changes.

**8.10 SCSI-3 Enclosure Commands (SES) {Project 1212-D} [Snively]**

Bob Snively reported that SES is published.  This item will be removed from future agendas.

**8.11 High Availability Profile (HAP) Technical Report {Project 1224-DT} [open]**

John Lohmeyer reported that NCITS voted to withdraw the project, per the T10 recommendation.  This item will be removed from future agendas.

**8.12 SCSI Controller Commands - 2 (SCC-2) {Project 1225-D} [Penokie]**

George Penokie reported that SCC-2 has been published.  This item will be dropped from future agendas.

**8.13 Multimedia Command Set - 2 (MMC-2) Status {Project 1228-D} [Roberts]**

Ron Roberts reported that 218 new comments were received on MMC-2 during the working group meeting.  He noted that the MMC-2 working group meeting minutes can be found in 99-152.  Ron described his future meeting plans and the information he reported was added to the T10 meeting schedule, as appropriate.

**8.14 SCSI Primary Commands - 2 (SPC-2) Status {Project 1236-D} [Weber]**

Ralph Weber reported that SPC-2 drafts are keeping up with T10 approved changes and stated an intention to produce a revision following this meeting to contain approved changes and the following: change the definition of 'reserved' to use the phrase "... are not required to check ...", incorporate SPI-3 definitions of "may" and "may not", add a protocol identifier field to 18h/19h mode pages with 0=FC, 1=Parallel, etc., and change communications device document references from SSC to SCSI-2 (if the proposal to make communications commands obsolete in SSC is approved).

**8.15 Reduced Block Commands (RBC) {Project 1240-D} [McLean]**

Pete McLean reported that the RBC working group met earlier in the week and developed letter ballot resolutions that satisfied all the people who submitted comments.  The comments resolution document and an RBC draft incorporating the letter ballot comments resolution will be available for the next committee mailing.  Pete reported that Ron Roberts will be taking over as project editor for RBC following the next committee mailing.

**8.16 SCSI Socket/SSL Services Command Set (SSS)  {Project 1246-D} [Parker]**

John Lohmeyer took and action item to add an item to the May Plenary agenda to withdraw the SSS project and to notify the project editor of this pending action.

**8.17 SCSI Parallel Interface - 3 (SPI-3) {Project 1302-D} [Penokie]**

George Penokie reported SPI-3 revision 3 was prepared last week, including about 40 editor's notes that need resolution.  He reported on the activities SPI-3 working group (minutes in 99-135).  In response to a question from the committee, George announced that he will be seeking a stabilization vote for SPI-3 at the May meeting, and a letter ballot following the July meeting, with completion of the project work by the end of the year.

**8.18 SCSI Enclosure Profile (SEP) Technical Report {Project 1303-DT} [Weber]**

Ralph Weber moved that T10 recommend to NCITS that the SEP project (1303-DT) be withdrawn.  Larry Lamers seconded the motion.  Ralph stated that his motion was based on the lack of interest from any company in working on the project.  The motion was approved 31:1:0:15=47.  George Penokie stated that his negative vote was based on the belief that the technical report is needed.  John Lohmeyer took an action item to notify NCITS of the T10 recommendation to withdraw project 1303-DT (SEP).

# 9.   Old Business

## 9.1   Resolution of RBC Letter Ballot comments

Pete McLean moved that 98-222r1 be accepted as resolving the RBC letter ballot comments and that RBC revision 8 be forwarded to NCITS for further processing towards first public review.  Bob Snively seconded the motion.

George Penokie requested that the IBM negative vote on the RBC letter ballot be changed to Yes based on the satisfactory resolution of the letter ballot comments. Bob Snively requested that the Sun Microsystems negative vote on the RBC letter ballot be changed to Yes based on the satisfactory resolution of the letter ballot comments. Ed Gardner requested that the Ophidian Designs negative vote on the RBC letter ballot be changed to Yes based on the satisfactory resolution of the letter ballot comments. Ralph Weber requested that the LSI Logic negative vote on the RBC letter ballot be changed to Yes based on the satisfactory resolution of the letter ballot comments. Skip Jones requested that the Qlogic negative vote on the RBC letter ballot be changed to Yes based on the satisfactory resolution of the letter ballot comments.

Gene Milligan raised a point of order regarding the need for a roll-call vote for substantive changes to a dpANS. John Lohmeyer ruled a roll-call vote is not needed because RBC is not a dpANS until it is forwarded to NCITS.

The motion was approved 30:1:0:16=47. Mark Evans stated that his negative vote was based on the lack of time to review the final document, however he declined to invoke the two-week rule.

Mike Bryan took an action item to prepare RBC revision 8 for forwarding to NCITS. John Lohmeyer took an action item to forward RBC revision 8 to NCITS for further processing towards first public review.

### 9.2   Make Flag bit in CDB Control byte obsolete (98-241r1) [Snively]

Bob Snively moved that 98-241r1 be approved for inclusion in all documents described therein. Bill Galloway seconded the motion. The motion passed 27:0:1:19=47.

### 9.3   Making the Communications command set obsolete [Oetting]

Based on the recommendation of the SSC working group, Erich Oetting moved that the communications command set be made obsolete in SSC. Ken Hallam seconded the motion. Ralph Weber noted that SSC references in SPC-2 would be changed to SCSI-2. The motion passed 30:0:0:17=47.

## 10.  New Business

### 10.1 Actions on Working Group Recommendations

### 10.1.1   Echo Mode for READ and WRITE BUFFER (98-184r6) [Lamers]

Based on the recommendation of the working group, Larry Lamers moved that 98-184r6 be approved for inclusion in SPC-2. Paul Aloisi seconded the motion. The motion passed 30:0:1:16=47.

### 10.1.2   Removing SCAM from SPI-3 (98-244r0) [Elliott]

Based on the recommendation of the January SPI-3 working group, Rob Elliott moved that SCAM be removed from SPI-3. Bill Galloway seconded the motion. Ed Gardner requested that SCAM be made obsolete and not just removed. Rob and Bill accepted this as a friendly amendment to the motion. The motion was amended to read, "that SCAM be made obsolete in SPI-3." The motion passed 29:0:0:18=47.

### 10.1.3   Clarification of MODIFY DATA POINTER message (99-109r0) [Lohmeyer]

Larry Lamers moved that 99-109r0 be approved for incorporation in SPI-3. John Lohmeyer seconded the motion. The motion passed 28:0:0:19=47.

### 10.1.4 "May Not" Clarifications in SPI-3 (98-246r1) [Elliott]

Rob Elliott moved that 98-246r1 be approved for inclusion in SPI-3. Bill Galloway seconded the motion. The motion passed 28:0:0:19=47.

### 10.1.5 Synchronous Transfer Timeout Function in SPI-3 (99-102r5) [Lamers]

Larry Lamers moved that 99-102r5 be approved for inclusion in SPI-3. Rob Elliott seconded the motion. The motion passed 28:0:0:19=47.

### 10.1.6 Message Information Unit Definition in SPI-3 (99-104r1) [Penokie]

George Penokie moved that 99-104r1 be approved for inclusion in SPI-3. John Lohmeyer seconded the motion. The motion passed 28:0:0:19=47.

### 10.1.7 Clarification of SDTR/WDTR and PPR interaction in SPI-3 (99-108r3) [Lohmeyer]

John Lohmeyer moved that 99-108r3 be approved for inclusion in SPI-3. Bill Galloway seconded the motion. The motion passed 28:0:0:19=47.

### 10.1.8 Synchronous ATN Timing in SPI-3 (99-112r2) [Galloway]

Bill Galloway moved that 99-112r1 be approved for inclusion in SPI-3. Larry Lamers seconded the motion. The motion passed 28:0:0:19=47.

### 10.1.9 DIFFSENS Timing in SPI-3 (99-113r2) [Galloway]

Bill Galloway moved that 99-113r2, 99-132r0, 99-133r0, and 99-134r1 be approved for inclusion in SPI-3. John Lohmeyer seconded the motion. It was noted that all the documents were unanimously recommended by the SPI-3 working group. The motion passed 24:0:2:21=47.

### 10.1.10 30 mV vs. 60 mV in figures 44 and 45 in SPI-3 (99-127r4) [Aloisi]

After reviewing the changes in revision 4, Paul Aloisi moved that 99-127r4 be approved for inclusion in SPI-3. Larry Lamers seconded the motion. The motion passed 24:1:0:22=47. Rob Elliott stated that his negative vote was based on the concerns raised in the working group.

### 10.1.11 No zero length data in SPI-3 (99-132r0) [Galloway]

See 10.1.9.

### 10.1.12 Timing for SCSI RST line in SPI-3 (99-133r0) [Galloway]

See 10.1.9.

### 10.1.13 PPR negotiation changes in SPI-3 (99-134r1) [Galloway]

See 10.1.9.

### 10.1.14 DT CRC Description in SPI-3 (99-157r1) [Leshay]

Based on the unanimous recommendation of the working group, Larry Lamers moved that 99-157r1 be approved for inclusion in SPI-3. Bill Galloway seconded the motion. The motion passed 25:0:1:21=47.

### 10.1.15 Very Long CDBs in SPI-3 and FCP-2 (99-158r0) [Snively]

Based on the recommendation of the working group, Bob Snively moved that 99-158r0 be approved for inclusion in SPI-3 and FCP-2.  Paul Aloisi seconded the motion.  The group reviewed details of the formats described in the proposal.  It was noted that computed size values in the proposal were incorrect and correction of the problem was assigned to the affected document editors.  The motion passed 25:1:2:19=47.

### 10.1.16 Very Long CDBs in SAM-2 and SPC-2 (98-188r2) [Houlder]

Bob Snively moved that 98-188r2 be approved for inclusion in SAM-2 and SPC-2.  Gene Milligan seconded the motion.  The motion passed 28:0:1:18=47.

### 10.1.17 Version numbers in SPC-2 (99-110r1) [Milligan]

Based on the unanimous recommendation of the working group, Gene Milligan moved that 99-110r1 be approved for inclusion in SPC-2.  Larry Lamers seconded the motion.  It was noted that the proposal uses byte 56 and that the project editor was instructed to move the version information to begin in byte 58.  Gene agreed to revise the proposal for the web site.  The motion passed 31:0:0:16=47.

### 10.1.18 SPI-3 Inquiry data in SPC-2  (99-130r1) [Penokie]

Larry Lamers moved that 99-130r1 be approved for inclusion in SPC-2.  Bill Galloway seconded the motion.  The motion passed 31:0:0:16=47.

### 10.1.19 Extended Copy command in SPC-2 (99-143r0) [Snively]

As the discussion on 99-143r0 extended to several minutes, Ralph Weber requested sufficient time to review the proposal (i.e., he invoked the two-week rule).

### 10.1.20 Legacy & Persistent Reservations Interactions in SPC-2 (99-146r1) [Snively]

Based on the unanimous recommendation of the working group, Bob Snively moved that 99-146r1 be approved for inclusion in SPC-2.  Erich Oetting seconded the motion.  The motion passed 30:0:0:17=47.

### 10.2 Recommendation that NCITS withdraw X3.276:1997 (SCC) [Penokie]

John Lohmeyer took an action item to notify the T10 Reflector that the committee intends to recommend the withdrawal the following standards at its May meeting:

- X3.276:1997 SCSI-3 Controller Commands
- X3.253:1995 SCSI-3 Parallel Interface
- X3.292:1997 SCSI-3 Interlocked Protocol
- X3.253/AM1:1998 SPI Amendment
- X3.277:1996 Fast-20

### 10.3 Recommendation that NCITS withdraw ANSI/ISO 9315:1989 [1994] Interfaces between flexible disk cartridges and their host controllers

John Lohmeyer moved that T10 request NCITS to reaffirm X3.131:1994, Small Computer System Interface - 2 (SCSI-2) and that NCITS withdraw ANSI/ISO 9315:1989 [1994] Interfaces between flexible disk cartridges and their host controllers and endorse the SC25 resolution to withdraw ISO/IEC 9315:1989.  Bill Galloway seconded the motion.

On a roll-call vote the motion passed 35:0:0:12=47.  The details of the roll-call vote are as follows:

```
Organization              S  Person                 Yes  No  Abs NP

Adaptec, Inc.             P  Mr. Lawrence J. Lamers   1
AMP, Inc.                 A  Mr. Charles Brill        1
Amphenol Interconnect     P  Mr. Bill Mable           1
Ancot Corp.                                                          1
Apple Computer            A  Mr. Ron Roberts          1
Berg Electronics          P  Mr. Douglas Wagner       1
BREA Technologies, Inc.   P  Mr. Bill Galloway        1
Circuit Assembly Corp.    A  Mr. Francesco Liburdi    1
CMD Technology            P  Mr. Edward Haske         1
Compaq Computer Corp.     P  Mr. Robert C. Elliott    1
Distributed Processing Tech.                                         1
ENDL                      P  Mr. I. Dal Allan         1
Exabyte Corp.                                                        1
Fujitsu (FCPA)            P  Mr. Ben-Koon Lin         1
Harting, Inc. of N. America  P  Mr. Marcos Barrionuevo  1
Hewlett Packard Co.       P  Mr. J. R. Sims           1
Hitachi Cable Manchester  A  Ms. Jacqueline Sylvia    1
Hitachi Storage Products  P  Mr. Anthony Yang         1
Honda Connectors          P  Mr. Thomas J. Kulesza    1
IBM Corp.                 P  Mr. George Penokie       1
Iomega Corp.              P  Mr. Tim Bradshaw         1
KnowledgeTek, Inc.                                                  1
Lasercard Systems Corp.   P  Mr. Hayden Smith         1
Linfinity Micro                                                     1
LSI Logic Corp.           P  Mr. John Lohmeyer        1
Madison Cable Corp.       P  Ms. Jie Fan              1
Maxtor Corp.              P  Mr. Pete McLean          1
Methode Electronics, Inc.                                          1
Molex Inc.                A  Mr. Jay Neer             1
Montrose/CDT                                                        1
Mylex Corp.               P  Mr. Brian McKean         1
Ophidian Designs          P  Mr. Edward A. Gardner    1
Panasonic Technologies, Inc  P  Mr. Han Zou           1
Philips Electronics       P  Mr. William P. McFerrin  1
QLogic Corp.                                                        1
Quantum Corp.             P  Mr. Mark Evans           1
Seagate Technology        P  Mr. Gene Milligan        1
Silicon Systems, Inc.     P  Mr. Robert Morris        1
Sony Electronics, Inc.                                             1
Storage Technology Corp.  P  Mr. Erich Oetting        1
Sun Microsystems Computer Co P  Mr. Robert N. Snively  1
The JPM Company                                                    1
Toshiba America Elec. Comp.  P  Mr. Tasuka Kasebayahi  1
UNISYS Corporation                                                 1
Unitrode Corporation      P  Mr. Paul D. Aloisi       1
Western Digital Corporation  P  Mr. Jeffrey L. Williams  1
Woven Electronics                                                  1

                                                    35   0   0  12 = 47
```

John Lohmeyer took an action item to notify NCITS that T10 recommends the reaffirmation of X3.131:1994, Small Computer System Interface - 2 (SCSI-2).  John Lohmeyer took an action item to notify NCITS that T10 recommends the withdrawal of ANSI/ISO 9315:1989 [1994] Interfaces between flexible disk cartridges and their host controllers.

**10.4 Recommendation that NCITS reaffirm X3.131:1994, Small Computer System Interface - 2 (SCSI-2)**

See 10.3.

**10.5 Making TTD and CIOP Obsolete (99-147r0) [Snively]**

Bob Snively reminded the committee that an action to make obsolete Target Transfer Disable and Continue I/O Process will be on the May agenda.

**10.6 Add 4 reserved bytes to the L_Q Information Unit [Lamers]**

Larry Lamers moved that the SPI-3 project editor be instructed to add 4 reserved bytes to the L_Q Information Unit. George Penokie seconded the motion.  The motion passed 28:1:2:16=47.  Ed Gardner stated that his negative vote was based on the belief that the issue should have had a working group recommendation.

# 11.  ISO

**11.1 ISO Report [Milligan]**

Gene Milligan presented an oral report to the committee and provided an electronic report contained in 99-164r0.

**11.2 ISO Business [Milligan]**

Ed Gardner moved that the IR be instructed to take the necessary steps to withdraw SPI and Fast-20 as international projects.  Larry Lamers seconded the motion.  The motion passed 33:0:0:14=47 by a roll call vote as follows:

```
Organization               S Person                 Yes No Abs NP

Adaptec, Inc.              P Mr. Lawrence J. Lamers   1
AMP, Inc.                  A Mr. Charles Brill        1
Amphenol Interconnect      P Mr. Bill Mable           1
Ancot Corp.                                                      1
Apple Computer             A Mr. Ron Roberts          1
Berg Electronics           P Mr. Douglas Wagner       1
BREA Technologies, Inc.    P Mr. Bill Galloway        1
Circuit Assembly Corp.     A Mr. Francesco Liburdi    1
CMD Technology             P Mr. Edward Haske         1
Compaq Computer Corp.      P Mr. Robert C. Elliott    1
Distributed Processing Tech.                                     1
ENDL                       P Mr. I. Dal Allan         1
Exabyte Corp.                                                    1
Fujitsu (FCPA)             P Mr. Ben-Koon Lin         1
Harting, Inc. of N. America P Mr. Marcos Barrionuevo  1
Hewlett Packard Co.        P Mr. J. R. Sims           1
Hitachi Cable Manchester   A Ms. Jacqueline Sylvia    1
Hitachi Storage Products   P Mr. Anthony Yang         1
Honda Connectors                                                 1
IBM Corp.                  P Mr. George Penokie       1
Iomega Corp.               P Mr. Tim Bradshaw         1
KnowledgeTek, Inc.                                               1
Lasercard Systems Corp.    P Mr. Hayden Smith         1
Linfinity Micro                                                  1
LSI Logic Corp.            P Mr. John Lohmeyer        1
Madison Cable Corp.        P Ms. Jie Fan              1
Maxtor Corp.               P Mr. Pete McLean          1
```

```
Methode Electronics, Inc.                                      1
Molex Inc.                                                     1
Montrose/CDT                                                   1
Mylex Corp.                  P Mr. Brian McKean        1
Ophidian Designs             P Mr. Edward A. Gardner   1
Panasonic Technologies, Inc  P Mr. Han Zou             1
Philips Electronics          P Mr. William P. McFerrin 1
QLogic Corp.                                                   1
Quantum Corp.                P Mr. Mark Evans          1
Seagate Technology           P Mr. Gene Milligan       1
Silicon Systems, Inc.        P Mr. Robert Morris       1
Sony Electronics, Inc.                                        1
Storage Technology Corp.     P Mr. Erich Oetting       1
Sun Microsystems Computer Co P Mr. Robert N. Snively   1
The JPM Company                                              1
Toshiba America Elec. Comp.  P Mr. Tasuka Kasebayahi   1
UNISYS Corporation                                           1
Unitrode Corporation         P Mr. Paul D. Aloisi      1
Western Digital Corporation  P Mr. Jeffrey L. Williams 1
Woven Electronics                                            1

                                         33  0  0 14 = 47
```

Ron Roberts moved that the IR be instructed to take the necessary steps process MMC using the international fast track process. Rob Sims seconded the motion. The motion passed 31:2:0:14=47 by a roll call vote exactly the same as the above roll call vote except that Dal Allan (ENDL) and Ed Gardner (Ophidian Designs) changed their votes to No.

Larry Lamers moved that T10 not fast track SPC for international consideration. Ed Gardner seconded the motion. In the absence of any objections, the motion passed unanimously.

George Penokie moved that T10 not fast track SIP for international consideration. Larry Lamers seconded the motion. In the absence of any objections, the motion passed unanimously.

George Penokie moved that the IR be instructed to take the necessary steps process SBC using the international fast track process. Larry Lamers seconded the motion. The motion passed 31:2:0:14=47 by a roll call vote exactly the same as the above roll call vote except that Dal Allan (ENDL) and Ed Gardner (Ophidian Designs) changed their votes to No.

Hayden Smith moved that the IR be instructed to use 99-128r1 as the basis for an affirmative response to the ballot on CD 14776-381. Larry Lamers seconded the motion. The motion passed 32:1:0:14=47 by a roll call vote exactly the same as the above roll call vote except that Dal Allan (ENDL) changed his vote to No.

Gene Milligan took an action item to take the necessary steps to withdraw SPI and Fast-20 as international projects. Gene Milligan took an action item to take the necessary steps to process MMC using the international fast track process. Gene Milligan took an action item to take the necessary steps to process SBC using the international fast track process. Gene Milligan took an action item to use 99-128r1 as the basis for an affirmative response to the ballot on CD 14776-381.

## 12. Liaison Reports

### 12.1 T11 Liaison Report [Cummings]

No report.

**12.2 T13 Liaison Report [Milligan]**

In the interest of time, the committee asked Gene Milligan skip the oral report.  Gene provided the following electronic report for the minutes:

<center>T13 Liaison Report 3/11/99</center>

The T13 Plenary Meeting #15 hosted by Ron Roberts of Sierra Pac on behalf of Apple in Placerville California February 23-26, 1999. NCITS 317-1998 ATA/ATAPI-4 and NCITS 316-1998-1394 to AT Attachment ñ Tailgate have been published.

The Ultra DMA 66 proposal for ATA/ATAPI-5 was reviewed with a few detailed changes agreed to.

Detailed proposals for Modification to the SMART Self-test Log Structure (D99105r0)(D99108R0) were reviewed and approved for inclusion in ATA/ATAPI-5.

Flush Cache was made mandatory in ATA/ATAPI-5.

The ATA/ATAPI-5 Draft was reviewed through the packet device state diagrams. An action item was assigned for all participants to determine if their products use the same checksum algorithm for Identify and SMART.

Tom Hanan, of Western Digital has converted the T13 web site to http://www.T13.org. The FTP site is still on fission.com. T13@T13.org is now the reflector address. For subscribing or unsubscribing address majordomo@T13.org.

The EDD v3.0 BIOS Technical project proposal was revised and the draft reviewed.

T13 decided to change the Method for Booting Reserved Area Boot Code (D98131r0) from a technical report to a standard.

A project proposal for Address Offset Feature (D98142R0) Technical Report was voted for forwarding.

A proposal for a Really Big LBA (D98142R0)  for ATA/ATAPI-6 was reviewed. A straw poll favored 48 bits over 64 bits.

Hale Landis is developing a proposal for the additional host design data that is needed for a full host controller definition of Multiword DMA and make a proposal.

Pete McLean reported that the EPA has changed 8 seconds from standby to active to be a recommendation rather than required.

Quantum is working on a response to the call for patents concerning ATA/ATAPI-5. The contact person is Steve Wilkins 408-894-5235 or steve.wilkins@quantum.com for information regarding licensing.

Circuit Assembly sent a letter (to be assigned a number) offering to license their patents concerning the 80 line cable. At the moment the license is only available to SFF and T13 member companies.

The next meeting of T13 is April 27-30, 1999 hosted by Seagate in the Raintree Hotel, Longmont, Colorado.

**12.3 SFF Industry Group [Allan]**

In the interest of time, the committee asked Dal Allan skip delivering an oral report.  Dal provided the following electronic report for the minutes.

SFF Committee Report

The HSS (High Speed Serial) Testing SSWG (Specific Subject Working Group) met in Cupertino and Little Rock and continued making good progress. The next HSS SSWG is scheduled for St. Augustine March 30-31. The current project is based on duplex copper connector cables, and two new projects will begin, one on backplanes and the other for duplex optical cables.

SFF-8441 for VHDCI (Very High Density Cable Interconnects) and SFF-8451 for SCA-2 (Single Connector Attach) have been approved for publication.

The issues on SFF-8420 for HSSDC (High Speed Serial Data Connector) have been addressed but are not resolved. Carl Fiske set a deadline for input to the IEC draft on HSSDC because he is in jeopardy of losing his role as editor for failing to provide input to the IEC.

During implementation of the extensions to SFF-8067 some changes were identified, and will be included in the next revision.

INF-8090i has been submitted for balloting to be re-issued. The members voted to Expire 8090i on the premise that it was the same as MMC-2 but there is a 200-page difference in size. Pioneer explained that 8090i has many of the features of both a profile and an implementation guide in order to ensure plug-compatibility between vendors. 8090i represents a specification of what industry will be shipping to the 80x86 marketplace. Mt Fuji meetings (8090) will be held during T10 week and in Japan on even months.

As requested by the members, a new draft of INF-8070i has been provided.

SFF-8012 for 4-pin power has been approved for publication and the changes incorporated will be forwarded for the next revision of the EIA standard and submittal to IEC.

The GBIC has moved from an 'i' specification to project status and the first SSWG will be held in April during T11 week.

A request has been made for a 68-pin version of SCA-2 for Fibre Channel tape drives. There is not enough 5V power in 8045 and about 10 pins are needed to provide for a library connection. The new project will be SFF-8072, and a companion specification to define a common location for the connector will be SFF-8572.

## 12.4 IEEE 1394 [Johansson]

No report.

## 12.5 IEEE P1285 Status

No report.

## 12.6 IEEE P1596.8 Status

No report.

## 12.7 T11 FC Tape [Peterson/LaFollette/Oetting]

Please see 99-159.  This topic will be covered under the SSC report for future meetings.

## 12.8 SCSI Trade Association (STA) [Jones/Aloisi]

Paul Aloisi made an oral report to the committee.  The following information was excerpted from Paul's slides.

November STA Meetings

Technical: 16 people attended in Palm Springs, CA. Mark Delsman presented the SCSI roadmap and took comments from the T10 members. Benjie Sun reviewed Version 4 of the SCSI Harbor document. Human Factors issues were noted and discussed.

Committee: New members; Andataco, EuroLogic, and IMP. Departing members; Ancot, Xyratex, and Templex. Still 23 members. Jay Neer was appointed to the board of the directors to fill a vacancy. Three domain validation levels were defined. Reviewed SCSI Roadmap and SCSI Terms, with both documents being edited for a January vote.

January STA Meetings

Technical: 21 people attended, in Seaside, CA, representing a good mix of server and disk companies. Revision 5 of the SCSI Harbor document was reviewed. A new wrapper and dock were shown. The dock is now set up for 1- or 1.6-inch drives. The Intel human factors group and design groups are working with us. The meeting noted a need to start system testing.

Annual Meeting: The STA Roadmap was approved now is available on the web site. The STA - SCSI Terms were approved and now are available on the web site. It was reported that the web site hits are on the rise 100/day last April, now 200+/day in January. Ask the SCSI expert is receiving about 8 questions per day. The STA budget was approved. STA is writing CTR articles, and supporting the "Ask SCSI Expert" column.

A new Board of Directors was elected as follows:
- Harry Mason Chairman LSI Logic
- Skip Jones Vice Chairman Qlogic
- Jon Baker Treasurer Seagate
- Mark Delsman Secretary Adaptec
- directors Jay Neer Molex, Pat McGarrah Quantum, Paul Aloisi Unitrode, Kon Leong GigaLabs, Charles Tashbook Dallas Semi, and Ariadne Horstman IBM.

## 13. Review of Action Items

266)    All project editors will return the project abstract forms regarding their project(s) to the Chair.
294)    John Lohmeyer will add an item to the May Plenary agenda to withdraw the CAM-3 project and to notify the project editor of this pending action.
295)    John Lohmeyer will add an item to the May Plenary agenda to withdraw the SSS project and to notify the project editor of this pending action.
296)    John Lohmeyer will notify NCITS of the T10 recommendation to withdraw project 1303-DT (SEP).
297)    Mike Bryan will prepare RBC revision 8 for forwarding to NCITS.
298)    John Lohmeyer will forward RBC revision 8 to NCITS for further processing towards first public review.
299)    John Lohmeyer will notify NCITS that T10 recommends the reaffirmation of X3.131:1994, Small Computer System Interface - 2 (SCSI-2).
300)    John Lohmeyer will notify NCITS that T10 recommends the withdrawal of ANSI/ISO 9315:1989 [1994] Interfaces between flexible disk cartridges and their host controllers.
301)    John Lohmeyer will notify the T10 Reflector that the committee intends to recommend the withdrawal the following standards at its May meeting: X3.276:1997 SCSI-3 Controller Commands, X3.253:1995 SCSI-3 Parallel Interface, X3.292:1997 SCSI-3 Interlocked Protocol, X3.253/AM1:1998 SPI Amendment, and X3.277:1996 Fast-20.
302)    Gene Milligan will take the necessary steps to withdraw SPI and Fast-20 as international projects.
303)    Gene Milligan will take the necessary steps to process MMC using the international fast track process.
304)    Gene Milligan will take the necessary steps to process SBC using the international fast track process.

305)     Gene Milligan will use 99-128r1 as the basis for an affirmative response to the ballot on CD 14776-381.


## 14. Meeting Schedule

The next plenary meeting of T10 will be May 6, 1999 in Manchester, NH at the Holiday Inn "The Center of NH" (603-625-1000), hosted by Hitachi Cable Manchester.  The meeting will begin at 9:00 a.m. on Thursday.

The meeting list for the next plenary week is:

```
                          May '99 Meeting Map
                          (3/11/99 Version)

Monday 5/3        9   10  11  12  1   2   3   4   5   6   7   8   9
                              +==================+
                              |SPI-3 WG          |                (50)
                  +--------------+==================+----------+
                  | T11.3 FC-AL-3 / FC-AL-2                    |   (40)
                  +----------------------------------+----------+
                  | Mt. Fuji - 4 WG                  |             (15)
                  +----------------------------------+

Tuesday 5/4       9   10  11  12  1   2   3   4   5   6   7   8   9
                  +==================================+
                  | SPI-3 WG                         |             (50)
                  +==================================+
                  | MMC-2 WG                         |             (15)
                  +==============+==================+===========+
                  | FC-AL-2      | SSC/FCP-2/FC-Tape joint WG  |   (40)
                  +--------------+==============================+

Wednesday 5/5     9   10  11  12  1   2   3   4   5   6   7   8   9
                  +=====================================+
                  | SCSI WG                             |           (50)
                  +=====================================+===+
                  | MMC-2 WG                            |           (15)
                  +==============+==============+===+===+
                                | SFF SSWGs    | SFF |             (40)
                                +--------------+------+

Thursday 5/6      9   10  11  12  1   2   3   4   5   6   7   8
                  +====================+-----------------+
                  | T10 Plenary        / SCSI Harbor (*) |         (60/40)
                  +==========+=======+------+-----------+
                             | STA Marcom   |                      (15)
                             +--------------+
 (*) - SCSI Harbor meeting begins 30 minutes after T10 plenary
       but not before 2:30 pm

Friday 5/7     8   9   10  11  12  1   2   3   4   5
                   +---------------------------+
                   | SCSI Trade Association (STA)|                 (30)
                   +---------------------------+


   Meetings marked with == are T10-authorized meetings.
   Meetings marked with -- are authorized by other groups and may change
   without notice.
```

```
Other T10-authorized meetings:
Meeting        Date               Location / Contact
-------------  -----------------  ------------------------------------
T10/T11.3      4/13/99    Tue     Palm Springs, CA / T11
Joint Tape WG
Cable Perf.    4/6/99     Tue     Manchester, NH / Zane Daggett
SPI-3 WG       4/7-8/99 Wed-Thu   Monterey, CA / Larry Lamers


 Meeting Map Abbreviation Key:
Amnd:          Amendment
CAM:           Common Access Method
CAM-3:         Next generation CAM for SCSI-3
EPI:           SCSI Enhanced Parallel Interface (Technical Report)
Encl Profile Enclosure Profile Study Group
Fast-20:       Data Transfer at 20 Mega-transfers/second (a.k.a., Ultra)
Fast-40:       Data Transfer at 40 Mega-transfers/second (a.k.a., Ultra2)
Fast-80:       Data Transfer at 80 Mega-transfers/second (a.k.a., Ultra3)
FC:            Fibre Channel
FC-AL:         Fibre Channel - Arbitrated Loop (a T11 project)
FCLC:          Fibre Channel Loop Community (not an NCITS activity)
I/F:           Interface
HAP:           High Availability Profile (Technical Report)
LB:            Letter Ballot
MMC-2:         Multimedia Commands - 2 (CD-ROM, DVD, etc.)
PH:            Physical (Connectors, Cables, Transceivers, etc.)
Plenary:       Full Committee Meeting
RAID:          Redundant Array of Independent Devices
RBC:           Reduced Block Commands
SBC:           SCSI-3 Block Commands
SBP-2:         Serial Bus Protocol for IEEE 1394 (2nd generation protocol)
SCC-2:         SCSI Controller Commands - 2 (2nd generation RAID command set)
SCSI:          Small Computer System Interface
SES:           SCSI Enclosure Services
SCSI Harbor: A STA project on defining a wrapper for SCSI devices
SFF:           SFF Industry Group (not an NCITS activity)
SG:            Study Group
SMC:           SCSI-3 Medium Changer Commands
SPC-2:         SCSI Primary Commands - 2 (2nd generation)
SPI-2:         Second Generation SCSI Parallel Interface
SPI-3:         Third Generation SCSI Parallel Interface
SSA:           Serial Storage Interface
SSC:           SCSI-3 Stream Commands (includes Tape)
SSWGs:         Specific-Subject Working Groups
STA:           SCSI Trade Association (not an NCITS activity)
STA Tech:      STA Technical Meeting (T10 members invited)
T10:           Lower Level Interfaces Technical Committee
WG:            Working Group (same as Ad Hoc Group)
```

For more information about T10 activities, please contact the following
people:

```
Activity                      Contact         Telephone/Email
----------------------------  --------------  ------------------------------
CAM-3                         Bill Dallas     (603) 881-2508
                                              dallas@zk3.dec.com
```

```
EPI                       Bill Ham         (508) 841-2629
                                           bill.ham@digital.com
FCP, FCP-2, SES           Robert Snively   (415) 336-5332
                                           Bob.Snively@eng.sun.com
GPP                       Gary Stephens    (602) 321-1725
                                           grsfsi@aol.com
SBC                       Gene Milligan    (405) 324-3070
                                           gene_milligan@notes.seagate.com
MMC, MMC-2                Ron Roberts      (916) 677-5714
                                           rkroberts@aol.com
SBP-2 or RBC              Pete McLean      (303) 678-2149
                                           pete_mclean@maxtor.com
SBP-2                     Peter Johansson  (510) 527-3926
                                           pjohansson@aol.com
SCC-2, SPI-2, SPI-3       George Penokie   (507) 253-5208
                                           gop@us.ibm.com
SMC                       Erich Oetting    (303) 673-2178
                                           Erich_Oetting@Stortek.com
SPC, SPC-2, SAM-2, SEP    Ralph Weber      (972) 503-3205 x228
                                           roweber@acm.org
SSA-PH1,-PH2,-TL1,-TL2    Larry Lamers     (408) 957-7817
                                           ljlamers@ix.netcom.com
SSA-S2P & -S3P            John Scheible    (512) 823-8208
                                           Scheible@vnet.ibm.com
SSC                       Dave Peterson    (612) 391-1008
                                           dap@network.com
SSS                       Keith Parker     (503) 255-1035
                                           diogenes@europa.com
Other Activities          John Lohmeyer    (719) 533-7560
                                           lohmeyer@ix.netcom.com
```

The long-term T10 meeting week schedule is:

```
Date                    Location                  Host/Comments
------------------      ------------------------  -------------------
May  3-7, 1999          Manchester, NH            Hitachi Cable
Jul 12-16, 1999         Colorado Springs, CO      LSI Logic
Sep 13-17, 1999         Huntington Beach, CA      QLogic
Nov  1-5,  1999         Monterey, CA              Adaptec / dates changed
Jan 10-14, 2000         Brisbane, Australia       ENDL Pacific Technologies
Mar  6-10, 2000         Dallas, TX                Unitrode
May  8-12, 2000         Manchester, NH            Hitachi Cable
Jul 10-14, 2000         Colorado Springs, CO      LSI Logic
Sep 11-15, 2000         Huntington Beach, CA      QLogic
Oct 30-Nov 3, 2000      Monterey, CA              Adaptec / dates changed
```

John Lohmeyer presented the revised meeting date and location schedule shown above.  Erich Oetting moved that T10 approve the revisions in the meeting schedule.  Paul Aloisi seconded the motion.  The motion passed 21:1:0:25=47.

## 14.1 Authorization of Working Group Meetings

John noted that the working group meetings are required to operate under the same voting procedures as does T10 (that is, one vote per organization) and the results of a working group are not binding on the parent committee. Ad hoc groups should strive to achieve consensus prior to bringing issues to T10.

Mark Evans moved that T10 authorize the T10-related meetings and events in the list above.  Jay Neer seconded the motion.  The motion passed unanimously.

**14.2 Down Under [Allan]**

Dal reported on the status of a tour he described in a message to the T10 Reflector.

**14.3 November 1999 and November 2000 Meeting Dates [Lamers]**

See 14.0.

## 15.  Adjournment

The meeting was adjourned at 12:50 p.m. on Thursday March 11, 1999.

Meeting Attendees -- Enclosure (1)

```
        Name            S      Organization       Electronic Mail Address
---------------------- -- ----------------------- ------------------------
Mr. Lawrence J. Lamers P  Adaptec, Inc.           ljlamers@ieee.org
Mr. Mark Delsman       A  Adaptec, Inc.           mdelsman@corp.adaptec.com
Mr. Charles Brill      A  AMP, Inc.               cebrill@amp.com
Mr. Elwood Parsons     V  AMP, Inc.               etparson@amp.com
Mr. Bill Mable         P  Amphenol Interconnect   bmable@spectra.net
Mr. Ron Roberts        A  Apple Computer          rkroberts@aol.com
Mr. Douglas Wagner     P  Berg Electronics        wagnerdl@bergelect.com
Mr. Bill Galloway      P  BREA Technologies, Inc. billg@breatech.com
Mr. Francesco Liburdi  V  Circuit Assembly Corp.  fliburdi@circuitassembly.
                                                  com
Mr. Edward Haske       P  CMD Technology          haske@cmd.com
Mr. Robert C. Elliott  P  Compaq Computer Corp.   Robert.Elliott@compaq.com
Mr. Neil Wanamaker     O  Crossroads Systems, Inc. ntw@crossroads.com
Mr. I. Dal Allan       P  ENDL                    endlcom@ibm.net
Mr. Ben-Koon Lin       P  Fujitsu (FCPA)          blin@fcpa.fujitsu.com
Mr. Nathan Hastad      O  General Dynamics        nathan.j.hastad@gd-is.com
Mr. Marcos Barrionuevo P  Harting, Inc. of N.     Marcos.Barrionuevo@
                          America                 harting.com
Mr. J. R. Sims         P  Hewlett Packard Co.     robsims@hootie.lvld.hp.
                                                  com
Ms. Jacqueline Sylvia  A  Hitachi Cable Manchester jsylvia@hcm.hitachi.com
Mr. Anthony Yang       P  Hitachi Storage Products anthony.yang@hal.hitachi.
                                                  com
Mr. Thomas J. Kulesza  P  Honda Connectors        tkulesza@hondaconnectors.
                                                  com
Mr. George Penokie     P  IBM Corp.               gop@us.ibm.com
Mr. Tim Bradshaw       P  Iomega Corp.            bradshat@iomega.com
Mr. Hayden Smith       P  Lasercard Systems Corp. hsmith@lasercard.com
Mr. John Lohmeyer      P  LSI Logic Corp.         lohmeyer@ix.netcom.com
Mr. Ralph O. Weber     A  LSI Logic Corp.         roweber@acm.org
Ms. Jie Fan            P  Madison Cable Corp.     jfan@madisoncable.com
Mr. Pete McLean        P  Maxtor Corp.            pete_mclean@maxtor.com
Mr. Charley Riegger    A  Maxtor Corp.            charles_riegger@maxtor.
                                                  com
Mr. Jay Neer           A  Molex Inc.              jneer@molex.com
Mr. Brian McKean       P  Mylex Corp.             brianm@mylexboulder.com
Mr. Edward A. Gardner  P  Ophidian Designs        eag@ophidian.com
Mr. Han Zou            P  Panasonic Technologies, hanzou@research.
                          Inc                     panasonic.com
Mr. William P.         P  Philips Electronics     BMcFerrin@aol.com
McFerrin
Mr. Skip Jones         P  QLogic Corp.            sk_jones@qlc.com
Mr. Mark Evans         P  Quantum Corp.           mark.evans@quantum.com
Mr. Gene Milligan      P  Seagate Technology      Gene_Milligan@notes.
                                                  seagate.com
Mr. Robert Morris      P  Silicon Systems, Inc.   bob.morris@ti.com
Mr. Erich Oetting      P  Storage Technology Corp. erich_oetting@stortek.com
Mr. Robert N. Snively  P  Sun Microsystems        bob.snively@sun.com
                          Computer Co
Mr. Tasuka Kasebayahi  P  Toshiba America Elec.   task.kasebayashi@taec.
                          Comp.                   toshiba.com
Mr. Kenneth J. Hallam  P  UNISYS Corporation      ken.hallam@unisys.com
Mr. Paul D. Aloisi     P  Unitrode Corporation    aloisi@unitrode.com
Mr. Donald R. Getty    A  Unitrode Corporation    gettd@unitrode.com
```

43 People Present

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

        T10 Attendance Database on 1999/03/17 at 12:52:10 -- Enclosure (2)

Mr. Lawrence J. Lamers  (P)        Phone: (408) 957-7817
Adaptec, Inc.                        Fax: (408) 957-7193
691 S. Milpitas Blvd.              Email: ljlamers@ieee.org
Milpitas, CA 95035


Mr. Vincent Bastiani  (A#)         Phone: (408) 957-7153
Adaptec, Inc.                        Fax:
691 S. Milpitas Blvd.              Email: bastiani@corp.adaptec.com
Milpitas, CA 95035


Mr. Wally Bridgewater  (A#)        Phone: (408) 945-8600
Adaptec, Inc.                        Fax:
691 S. Milpitas Blvd.              Email: wally@eng.adaptec.com
Milpitas, CA 95035


Mr. Mark Delsman  (A)              Phone: (408) 957-5661
Adaptec, Inc.                        Fax:
691 S. Milpitas Blvd.              Email: mdelsman@corp.adaptec.com
Milpitas, CA 95035


Mr. Martin L. Sodos  (O)           Phone: (408) 383-5734
Advansys                             Fax: (408) 383-9612
1150 Ringwood Ct.                  Email: msodos@advansys.com
San Jose, CA 95131


Mr. Steven P. Ego  (O)             Phone: (512) 258-2303
Aeronics Inc.                        Fax: (512) 258-4392
12741 Research Blvd #500           Email:
Austin, TX 78759


Mr. Kent Manabe  (O)               Phone: (408) 441-9232
America Kotobuki Electronics         Fax: (408) 441-9246
100 Century Center Ct. #310        Email: manabe@ix.netcom.com
San Jose, CA 95112


Mr. Scott Lindstrom  (P)           Phone: (704) 824-6352
AMP, Inc.                            Fax: (704) 824-6268
603 Groves Street                  Email: slindstr@amp.com
Lowell, NC 28098


Mr. Charles Brill  (A)             Phone: (717) 810-4642
AMP, Inc.                            Fax: (717) 533-1279
112 Harvey Rd.                     Email: cebrill@amp.com
Hershey, PA 17033


Ms. Bonnie Rose  (O)               Phone: (416) 291-4401 x2239
Amphenol Canada Corp.                Fax: (416) 292-0647
20 Melford Dr.                     Email: brose@cosmosgroup.com

Scarboraugh, Ontario
Canada M1B 2X6


Mr. Bill Mable  (P)                Phone: (607) 786-4236
Amphenol Interconnect                Fax: (607) 786-4311
20 Valley St.                      Email: bmable@spectra.net
Endicott, NY 13760


Mr. Michael Wingard  (A)           Phone: (607) 786-4241
Amphenol Interconnect                Fax: (607) 786-4311
20 Valley St.                      Email: mikwingard@aol.com
Endicott, NY 13760


Mr. Bart Raudebaugh  (P)           Phone: (415) 322-5322
Ancot Corp.                          Fax: (415) 322-0455
115 Constitution Dr.               Email: bart@ancot.com
Menlo Park, CA 94025


Mr. Jozef Tupy  (A)                Phone: (415) 322-5322
Ancot Corp.                          Fax: (415) 322-0455
115 Constitution Dr.               Email: jozef@ancot.com
Menlo Park, CA 94025


Mr. Gregg Neely  (O)               Phone: (619) 453-9191
Andataco                             Fax: (619) 453-9294
10140 Mesa Rim Rd.                 Email: greggn@andataco.com
San Diego, CA 92121


Mr. Harlan Andrews  (P)            Phone: (408) 974-6430
Apple Computer                       Fax: (408) 862-7577
6 Infinite Loop  MS 306-2MS        Email: hea@apple.com
Cupertino, CA. 95014


Mr. Ron Roberts  (A)               Phone: (530) 677-5714
Apple Computer                       Fax: (530) 677-1218
3535 Monroe St. MS:69-G            Email: rkroberts@aol.com
Santa Clara, CA 95051


Mr. James R. Bergsten  (O)         Phone: (408) 260-5900
Ark Research Corp.                   Fax: (408) 260-5908
1190 Saratoga Ave.  #110           Email: bergsten@arkres.com
San Jose, CA 95129-3433


Mr. Douglas Wagner  (P)            Phone: (805) 498-0325
Berg Electronics                     Fax: (805) 498-0325
472 Delwood Ct.                    Email: wagnerdl@bergelect.com
Newbury Park, CA 91320-4819


Mr. Jim Koser  (A)                 Phone: (717) 938-7679
Berg Electronics                     Fax: (717) 938-7991

```
825 Old Trail Road              Email:
Etters, PA 17319


Mr. Bill Galloway  (P)          Phone: (281) 530-3063
BREA Technologies, Inc.           Fax: (281) 988-0358
14902 Mesita Dr.                Email: billg@breatech.com
Houston, TX 77083


Mr. Bob Gannon  (O)             Phone: (860) 774-4812
C&M Corp.                         Fax: (860) 774-7330
PO Box 348                      Email: rgannon@cm-corp.com
51 South Walnut St.
Wauregan, CT 06387


Mr. Gerry Johnsen  (O)          Phone: (612) 551-4000
Ciprico Inc.                      Fax: (612) 551-4002
2800 Campus Dr. Suite 60        Email: gerry@ciprico.com
Plymouth, MN 55441


Mr. Ian Morrell  (P)            Phone: (949) 598-1780
Circuit Assembly Corp.            Fax: (949) 855-4298
18 Thomas St.                   Email: ianm@circuitassembly.com
Irvine, CA 92718-2703


Mr. Dennis Lang  (A)            Phone: (949) 855-7887
Circuit Assembly Corp.            Fax: (949) 855-4298
18 Thomas St.                   Email: dennisl@circuitassembly.com
Irvine, CA 92718-2703


Mr. Ben Chang  (O)              Phone: (510) 226-2394
Cirrus Logic Inc.                 Fax:
3100 W. Warren Ave.             Email: ben@corp.cirrus.com
Fremont, Ca 94538


Mr. Edward Haske  (P)           Phone: (714) 454-0800
CMD Technology                    Fax: (714) 455-1656
1 Vanderbilt                    Email: haske@cmd.com
Irvine, CA 92718


Mr. Robert C. Elliott  (P)      Phone: (281) 518-5037
Compaq Computer Corp.             Fax: (281) 518-7135
MS 120810                       Email: Robert.Elliott@compaq.com
PO Box 692000
Houston, TX 77269-2000

Mr. William Dallas  (A#)        Phone: (603) 884-2508
Compaq Computer Corp.             Fax: (603) 884-2257
ZK03-3/T79                      Email: dallas@zk3.dec.com
110 Spit Brook Road
Nashua, NH 03062-2698


Mr. Douglas Hagerman  (A#)      Phone: (508) 841-2145
```

```
Compaq Computer Corp.              Fax: (508) 841-6100
SHR3-2/W3                        Email: douglas.hagerman@digital.com
334 South Street
Shrewsbury, MA 01545


Dr. William Ham  (A)             Phone: (508) 841-2629
Compaq Computer Corp.              Fax: (508) 841-5266
SHR3-2/W04                       Email: bill.ham@digital.com
334 South Street
Shrewsbury, MA 01545


Mr. Mike Zandy  (A#)             Phone: (281) 518-7930
Compaq Computer Corp.              Fax:
MS 640222                        Email: Mike.Zandy@compaq.com
PO Box 692000
Houston, TX 77269-2000


Mr. Peter Johansson  (O)         Phone: (510) 527-3926
Congruent Software, Inc.           Fax: (510) 531-2942
3998 Whittle Ave.                Email: pjohansson@aol.com
Oakland, CA 94602



Mr. Neil Wanamaker  (O)          Phone: (512) 794-2727
Crossroads Systems, Inc.           Fax: (512) 349-0304
9390 Research Blvd.              Email: ntw@crossroads.com
Suite II-300
Austin, TX 78759


Mr. Stephen K. Wilson  (O)       Phone: (512) 794-2716
Crossroads Systems, Inc.           Fax:
9390 Research Blvd.              Email: steve@crossroads.com
Suite II-300
Austin, TX 78759


Mr. Bill Anderson  (O)           Phone: (408) 980-8344
DDK Electronics                    Fax: (408) 980-9750
3001 Oakmead Village Dr.         Email: bill_anderson@ddkconnectors.com
Santa Clara, CA 95051



Mr. James Benfer  (O)            Phone: (301) 498-0200
Digi-Data Corp.                    Fax:
8580 Dorsey Run Road             Email:
Jessup, MD 20794


Mr. Roger Cummings  (P)          Phone: (407) 830-5522 x348
Distributed Processing Tech.       Fax: (407) 260-5366
140 Candace Dr.                  Email: cummings_roger@dpt.com
Maitland, FL 32751


Mr. Mike Gerwig  (A)             Phone: (407) 830-5522 x380
Distributed Processing Tech.       Fax: (407) 260-5366
140 Candace Dr.                  Email: gerwig@dpt.com
Maitland, FL 32751
```

```
Mr. Ed Kavetsky  (A#)           Phone: (407) 830-5522 x344
Distributed Processing Tech.      Fax: (407) 260-5366
140 Candace Dr.                 Email: kavetsky@dpt.com
Maitland, FL 32751


Mr. Robert Reisch  (O)          Phone: (716) 588-0573
Eastman Kodak Co.                 Fax: (716) 588-2624
460 Buffalo Road                Email: reisch@kodak.com
Rochester, NY 14652-3816


Mr. Terry Maezawa  (O)          Phone: (404) 487-5815
Electronic&Ind. Enterprises       Fax:
Suite 216                       Email:
21 Eastbrook Bend
Peachtree City, GA 30269


Mr. I. Dal Allan  (P)           Phone: (408) 867-6630
ENDL                              Fax: (408) 867-2115
14426 Black Walnut Ct.          Email: endlcom@ibm.net
Saratoga, CA 95070


Mr. Tom Jackson  (P)            Phone: (303) 417-7201
Exabyte Corp.                     Fax: (303) 417-7829
1685 38th Street                Email: thomasj@exabyte.com
Boulder, CO 80301


Mr. Frank Wang  (A)             Phone: (303) 417-7672
Exabyte Corp.                     Fax: (303) 417-7829
1685 38th Street                Email: frankw@exabyte.com
Boulder, CO 80301


Mr. Gary R. Stephens  (A)       Phone: (520) 321-1725
FSI Consulting Services           Fax: (520) 321-1725
1825 N. Norton                  Email: grsfsi@aol.com
Tucson, AZ 85719


Mr. Ben-Koon Lin  (P)           Phone: (408) 894-3979
Fujitsu (FCPA)                    Fax: (408) 894-3908
2904 Orchard Pkwy.              Email: blin@fcpa.fujitsu.com
San Jose, CA 95134


Mr. Don Vohar  (A)              Phone: (408) 894-3840
Fujitsu (FCPA)                    Fax: (408) 894-3748
2904 Orchard Pkwy.              Email: dvohar@fcpa.fujitsu.com
San Jose, CA 95134


Mr. Kazuo Nakashima  (O)        Phone: (408) 894-3849
Fujitsu Computer Products,Am      Fax: (408) 894-3907
2904 Orchard Parkway            Email: knakashima@fcpa.fujitsu.com
San Jose, CA 95134
```

Mr. Bob Thornton  (O)              Phone: (408) 745-4932
Fujitsu Takamisawa America           Fax: (408) 745-4971
250 E. Caribbean Dr.               Email: bthornto@fta.fujitsu.com
Sunnyvale, CA 94089


Mr. Nathan Hastad  (O)             Phone: (612) 921-6635
General Dynamics                     Fax: (612) 921-6345
8800 Queen Ave. S.                 Email: nathan.j.hastad@gd-is.com
Bloomington, MN 55431


Mr. Pak Chan  (O)                  Phone: (408) 481-3030
Gigalabs Inc.                        Fax: (408) 481-3045
290 Santa Ana Court                Email: pchan@giglabs.com
Sunnyvale, CA 94086


Ms. Liza Hunt  (XO)                Phone:
Global Engineering Documents         Fax:
15 Inverness Way East              Email:
Englewood, CO 80112-5704


Mr. Marcos Barrionuevo  (P)        Phone: (847) 741-1500 x280
Harting, Inc. of N. America          Fax: (847) 741-8257
1370 Bowes Road                    Email: Marcos.Barrionuevo@harting.com
Elgin, IL 60123


Mr. Rodger Burke  (A)              Phone: (847) 741-1500 x286
Harting, Inc. of N. America          Fax: (847) 741-8257
1370 Bowes Road                    Email: Rodger.Burke@harting.com
Elgin, IL 60123


Mr. J. R. Sims  (P)                Phone: (970) 635-6774
Hewlett Packard Co.                  Fax: (970) 635-6610
800 S. Taft Ave.                   Email: robsims@hootie.lvld.hp.com
Loveland, CO 80537


Mr. Matt Wakeley  (A)              Phone: (916) 785-4259
Hewlett Packard Co.                  Fax: (916) 785-1997
8000 Foothills Blvd.               Email:
Roseville, CA 95747


Mr. Donald C. Loughry  (XO)        Phone: (408) 447-2454
Hewlett Packard Co.                  Fax: (408) 447-2247
M/S 43UC    NCITS Vice Chair       Email: don_loughry@hp6600.desk.hp.com
19420 Homestead Rd.
Cupertino, CA 95014

Mr. Steve Krupa  (O)               Phone:
Hewlett Packard Co.                  Fax:
Filton Road                        Email:
Stoke Gifford

Bristol BS12 6QZ England

```
Ms. Jacqueline Sylvia  (A)        Phone: (603) 669-4347
Hitachi Cable Manchester            Fax:
900 Holt Ave.                     Email: jsylvia@hcm.hitachi.com
Manchester, NH 03109


Mr. Zane Daggett  (P)             Phone: (603) 669-4347 x236
Hitachi Cable Manchester,Inc        Fax: (603) 669-9621
900 Holt Ave.                     Email: zdaggett@hcm.hitachi.com
Manchester, NH 03109


Mr. Paul Boulay  (O)              Phone: (408) 986-9770 x205
Hitachi Computer Systems Div        Fax: (408) 986-1821
3101 Tasman Drive                 Email: p_boulay@hitachi.com
Santa Clara, CA 95054


Mr. Hitoshi Ogawa  (O)            Phone: 1181-45881-1241
Hitachi Ltd.                        Fax: 1181-45860-1674
Systems Development Lab           Email: hogawa@yokolab.sdl.hitachi.co.jp
292 Yoshida-Cho
Yokohama-Shi 244 Japan

Mr. Anthony Yang  (P)             Phone: (408) 941-7048
Hitachi Storage Products            Fax: (408) 946-1062
1971 Milmont Drive                Email: anthony.yang@hal.hitachi.com
Milpitas, CA 95035


Mr. Quang Vuong  (A)              Phone: (408) 748-2806
Hitachi Storage Products            Fax: (408) 235-8942
3101 Tasman Drive  M/S 75         Email: vuong_q@halsp.hitachi.com
Santa Clara, CA 95054


Mr. Thomas J. Kulesza  (P)        Phone: (847) 913-9566
Honda Connectors                    Fax: (847) 913-9587
960 Corporate Woods Parkway       Email: tkulesza@hondaconnectors.com
Vernon Hill, IL 60061


Mr. Terry Enright  (A)            Phone: (847) 913-9566
Honda Connectors                    Fax: (847) 913-9587
960 Corporate Woods Parkway       Email:
Vernon Hill, IL 60061


Mr. George Penokie  (P)           Phone: (507) 253-5208
IBM Corp.                           Fax: (507) 253-2880
2B7/114-2                         Email: gop@us.ibm.com
37st Highway 52 N.
Rochester, MN 55901-7829


Mr. Dan Colegrove  (A#)           Phone: (408) 256-1978
IBM Corp.                           Fax: (408) 256-1044
LJ4/012                           Email: colegrov@us.ibm.com
```

5600 Cottle Rd.
San Jose, CA 95193

Mr. John P. Scheible  (A)          Phone: (512) 823-8208
IBM Corp.                            Fax: (512) 823-0758
Bldg 815 MS 4051                   Email: Scheible@vnet.ibm.com
11400 Burnett Rd.
Austin, TX 78758

Mr. Robert Basham  (O)             Phone: (520) 799-4923
IBM Corp.                           Fax:
65U/031-Z                          Email: robbyb@us.ibm.com
9000 S. Rita Rd.
Tucson, AZ 85744

Mr. Tim Bradshaw  (P)              Phone: (801) 778-4262
Iomega Corp.                        Fax: (801) 778-4170
1821 Iomega Way                    Email: bradshat@iomega.com
Roy, UT 84067

Mr. Darrell Redford  (A)           Phone: (801) 778-4432
Iomega Corp.                        Fax: (801) 778-4170
1821 West Iomega Way               Email: redfordd@iomega.com
Roy, UT 84067

Mr. David L. Jolley  (A#)          Phone: (801) 778-3641
Iomega Corporation                  Fax: (801) 778-5261
1821 West Iomega Way               Email: jolley@iomega.com
Roy, UT 84067

Mr. Dennis Moore  (P)              Phone: (303) 465-1800
KnowledgeTek, Inc.                  Fax: (303) 426-1350
7230 West 119th Pl, Suite C        Email: dmoore@ix.netcom.com
Broomfield, CO 80020

Mr. Hayden Smith  (P)              Phone: (650) 969-4428
Lasercard Systems Corp.             Fax: (650) 967-6524
2644 Bayshore Parkway              Email: hsmith@lasercard.com
Mountain View, CA 94043

Mr. Louis Grantham  (P)            Phone: (972) 396-7002
Linfinity Micro                     Fax: (972) 396-7533
101 W. McDermott                   Email: lgrantham@linfinity.com
Allen, TX 75013

Mr. John Lohmeyer  (P)             Phone: (719) 533-7560
LSI Logic Corp.                     Fax: (719) 533-7036
4420 ArrowsWest Dr.                Email: lohmeyer@ix.netcom.com
Colorado Springs, CO 80907

Mr. Ralph O. Weber  (A)            Phone: (972) 503-3205 x228
LSI Logic Corp.                     Fax: (972) 503-2258

```
Suite 400                          Email: roweber@acm.org
12377 Merit Drive
Dallas, TX 75251

Ms. Jie Fan  (P)                   Phone: (508) 752-2884 x306
Madison Cable Corp.                  Fax: (508) 752-4230
125 Goddard Memorial Dr.           Email: jfan@madisoncable.com
Worchester, MA 01603


Mr. Chuck Grant  (A)               Phone: (508) 752-2884 x725
Madison Cable Corp.                  Fax: (508) 752-4230
125 Goddard Memorial Drive         Email: cgrant@madisoncable.com
Worcester, MA 01603


Mr. Takaharu Ai  (O)               Phone: +81-6-906-2330
Matsushita Elec. Indust. Co.         Fax: +81-6-906-1549
4-16-12                            Email: aiai@dsd.mei.co.jp
Matsuo-cho
Kadoma, Osaka 571-8504 Japan

Mr. Pete McLean  (P)               Phone: (303) 678-2149
Maxtor Corp.                         Fax: (303) 678-2165
2190 Miller Dr.                    Email: pete_mclean@maxtor.com
Longmont, CO 80501


Mr. Charley Riegger  (A)           Phone: (408) 432-4571
Maxtor Corp.                         Fax: (408) 432-4432
510 Cottonwood Dr.                 Email: charles_riegger@maxtor.com
Milpitas, CA 95035


Mr. LeRoy Leach  (O)               Phone: (303) 678-2828
Maxtor Corp.                         Fax: (303) 678-2308
2190 Miller Dr.                    Email: leroy_leach@maxtor.com
Longmont, CO 80501-6744


Mr. Randy Banton  (O)              Phone: (508) 256-1300 x134
Mercury Computer                     Fax:
199 Riverneck Road                 Email:
Chelmsford, MA 01824


Mr. Bob Masterson  (P)             Phone: (708) 867-9600
Methode Electronics, Inc.            Fax: (708) 867-3149
7444 West Wilson Ave               Email: rwmast@methode.com
Chicago, IL 60656


Mr. Frank Samela  (A)              Phone: (708) 867-9600
Methode Electronics, Inc.            Fax: (708) 867-0346
7444 W. Wilson Ave.                Email: franksam@methode.com
Chicago, IL 60148


Mr. Joe Dambach  (P)               Phone: (708) 527-4546
```

Molex Inc.                          Fax: (708) 969-1352
2222 Wellington Court               Email: jdambach@molex.com
Lisle, IL 60532


Mr. Jay Neer  (A)                   Phone: (561) 447-2907
Molex Inc.                           Fax: (561) 447-2908
399 W. Camino Gardens Blvd.         Email: jneer@molex.com
Suite 103
Boca Raton, FL 33432

Mr. Martin Ogbuokiri  (O)           Phone: (630) 527-4370
Molex Inc.                           Fax: (630) 969-1352
2222 Wellington Court               Email: mogbuokiri@molex.com
Data Comm
Lisle, IL 60532

Mr. Richard Wagner  (P)             Phone: (508) 791-3161
Montrose/CDT                         Fax: (508) 798-8353
28 Sword Street                     Email: rwagner@montrose-cdt.com
Auburn, MA 01501


Mr. Joseph Spagnuolo  (A)           Phone: (508) 791-3161
Montrose/CDT                         Fax: (508) 793-9862
28 Sword Street                     Email:
Auburn, MA 01501-0276


Mr. Brian McKean  (P)               Phone: (303) 381-4246
Mylex Corp.                          Fax: (303) 413-0464
4900 Pearl East Circle #104         Email: brianm@mylexboulder.com
Boulder, CO 80301-6108


Mr. Alex Shih  (A)                  Phone: (510) 608-2536
Mylex Corp.                          Fax: (510) 797-4907
34551 Arderwood Blvd.               Email: alexs@mylex.com
Fremont, CA 94555-3607


Mr. Edward A. Gardner  (P)          Phone: (719) 593-8866
Ophidian Designs                     Fax: (719) 593-8989
1262 Hofstead Terrace               Email: eag@ophidian.com
Colorado Springs, CO 80907


Mr. Han Zou  (P)                    Phone: (609) 734-7326
Panasonic Technologies, Inc          Fax: (609) 987-8827
2 Research Way                      Email: hanzou@research.panasonic.com
Princeton, New Jersey 08540


Dr. Terry Nelson  (A)               Phone: (609) 734-7324
Panasonic Technologies, Inc          Fax: (609) 987-8827
2 Research Way                      Email: tnelson@research.panasonic.com
Princeton, NJ 08540

```
Mr. William P. McFerrin  (P)      Phone: (303) 651-5408
Philips Electronics                 Fax: (303) 682-3029
1860 Lefthand Circle              Email: BMcFerrin@aol.com
Longmont, CO 80501


Mr. Randall C. Hines  (A)         Phone: (303) 651-5406
Philips Electronics                 Fax: (303) 682-3029
1860 Lefthand Circle              Email: hinesr@worldnet.att.net
Longmont, CO 80501


Mr. Skip Jones  (P)               Phone: (714) 668-5058
QLogic Corp.                        Fax: (714) 688-5008
3545 Harbor Blvd.                 Email: sk_jones@qlc.com
Costa Mesa, CA 92626


Mr. Dean Wallace  (A)             Phone: (714) 668-5028
QLogic Corp.                        Fax: (714) 668-5095
3545 Harbor Blvd.                 Email: d_wallace@qlc.com
Costa Mesa, CA 92675


Mr. Mark Evans  (P)               Phone: (408) 894-4019
Quantum Corp.                       Fax: (408) 894-4990
500 McCarthy Blvd.                Email: mark.evans@quantum.com
Milpitas, CA 95035


Mr. Patrick McGarrah  (A)         Phone: (508) 770-6364
Quantum Corp.                       Fax: (508) 770-2299
333 South St.                     Email: pat.mcgarrah@quantum.com
Shrewsbury, MA 01545


Mr. James McGrath  (A#)           Phone: (408) 894-4504
Quantum Corp.                       Fax: (408) 894-6375
500 McCarthy Blvd.                Email: JMCGRATH@QNTM.COM
Milpitas, CA 95035


Mr. John A. Fobel  (O)            Phone: (909) 987-3966
Rancho Technology, Inc.             Fax: (909) 989-2365
10783 Bell Court                  Email: johnf@rancho.com
Rancho Cucamonga, CA 91730


Mr. Ken-Ichi Kojima  (O)          Phone: 584-64-4399
Sanyo Electric Co., Ltd.            Fax: 584-64-5096
180 Ohmori Anpachi-Cho            Email:
Anpachi-Gun
Gifu-Ken 503-01 Japan

Mr. Gene Milligan  (P)            Phone: (405) 324-3070
Seagate Technology                  Fax: (405) 324-3794
MS OKM 251                        Email: Gene_Milligan@notes.seagate.com
P. O. Box 12313
Oklahoma City, OK 73157
```

Mr. Gerald Houlder  (A)          Phone: (612) 806-2869
Seagate Technology                 Fax: (612) 806-2708
MPS043                           Email: Gerry_Houlder@notes.seagate.com
8001 E. Bloomington Freeway
Bloomington, MN 55420-1094

Mr. Daniel (Dan) F. Smith  (O)   Phone: (408) 439-7146
Seagate Technology                 Fax: (408) 438-4846
4585 Scotts Valley Dr.           Email: daniel_f_smith@notes.seagate.com
Scotts Valley, CA 95066-4544


Mr. Yasunori Hiyoshi  (O)        Phone:
Seiko Epson Corp.                  Fax:
Corporate Res & Dev              Email: yasunori.hiyoshi@exc.epson.co.jp
3-3-5 Owa Suma-Shi
Nagano-Ken 392-8502 Japan

Mr. Erhard Weiss  (O)            Phone: 49-821-804-3602
Siemens Nixdorf                    Fax: 49-821-804-2910
Depatment: SNI PC SB ESW         Email: weiss.abg@sni.de
Burgermeister-Ulrich-St
D-86199 Augsburg Germany

Mr. Robert Morris  (P)           Phone: (714) 573-6616
Silicon Systems, Inc.             Fax:
14351 Myford Rd.                 Email: bob.morris@ti.com
Tustin, CA 92780


Mr. Stephen G. Finch  (A)        Phone: (714) 573-6808
Silicon Systems, Inc.             Fax: (714) 573-6916
14351 Myford Road                Email: steve.finch@tus.ssi1.com
Tustin, CA 92780-7022


Mr. James Ryland  (L)            Phone: (410) 965-2166
Social Security Admin             Fax: (410) 966-1893
NCC Room 5110    OMC liaison     Email: JRYLAND@SSA.SSW.DHHS.GOV
6201 Security Blvd.
Baltimore, MD 21234-0001

Mr. Greg Alvey  (O)              Phone: (408) 338-4285
Solution Technology               Fax: (408) 338-4374
P.O. Box 104                     Email: kd6hnm@aol.com
Boulder Creek, CA 95006


Mr. Dennis Pak  (P)              Phone: (408) 955-5247
Sony Electronics, Inc.            Fax: (408) 955-5066
3300 Zanker Rd.  MS# SJ-3B2      Email: dennis_pak@asd.sel.sony.com
San Jose, CA 95134


Mr. Janek Rebalski  (A)          Phone: (415) 955-4535
Sony Electronics, Inc.            Fax: (415) 955-5066
3300 Zanker Rd.                  Email: janek_rebalski@asd.sel.sony.com
San Jose, CA 95134

```
Mr. Rich Wahler  (O)              Phone: (516) 435-6174
Standard Microsystems Corp.         Fax: (516) 724-1505
300 Kennedy Drive                 Email:
Hauppauge, NY 11788


Mr. Erich Oetting  (P)            Phone: (303) 673-2178
Storage Technology Corp.            Fax: (303) 673-8196
2270 South 88th St.               Email: erich_oetting@stortek.com
Louisville, CO 80028-0268


Mr. Doug Charnley  (A)            Phone: (303) 661-7271
Storage Technology Corp.            Fax: (303) 673-8196
2270 South 88th St.  MS 0211      Email: doug_charnley@stortek.com
Louisville, CO 80028-0211


Mr. David Peterson  (O)           Phone: (612) 391-1008
StorageTek Network Sys. Grp         Fax: (612) 391-1095
7600 Brooklyn Blvd.               Email: dap@network.com
Brooklyn Park, MN 55428


Mr. Robert N. Snively  (P)        Phone: (510) 574-9051
Sun Microsystems Computer Co        Fax: (510) 574-9504
Mail Stop NWK04-104               Email: bob.snively@sun.com
901 San Antonio Road
Palo Alto, CA 94303-4900


Mr. Franklin Ng  (A)              Phone: (510) 574-9195
Sun Microsystems Computer Co        Fax: (510) 574-9501
MS NWK02-101                      Email: franklin.ng@ebay.sun.com
901 San Antonio Rd.
Palo Alto, CA 94303


Mr. Vit Novak  (A)                Phone: (650) 688-9033
Sun Microsystems, Inc.              Fax: (650) 688-9265
Mail Stop 15-46                   Email: vit.novak@sun.com
2550 Garcia Ave.
Mountain View, CA 94043-1100


Mr. Pete Tobias  (A#)             Phone: (408) 285-9913
Tandem, a Compaq Company            Fax: (408) 285-9924
Loc 100-03                        Email: tobias_pete@tandem.com
10555 Ridgeview Ct.
Cupertino, CA 95014-0789


Mr. Ken Plourde  (O)              Phone: (508) 839-5987
Temp Flex Cable, Inc.               Fax: (508) 839-4128
11 Depot St.                      Email: kplourde@templex.com
S. Grafton, MA 01560


Mr. Bill Youngman  (P)            Phone: (408) 952-3503
The JPM Company                     Fax: (408) 435-1109
2135 Ringwood Ave.                Email: byoungman@jpmsj.com
```

San Jose, CA 95131


Ms. Dora M. Deivert  (O)          Phone: (408) 952-3510
The JPM Company                     Fax: (408) 435-9775
2135 Ringwood Ave.                Email: dmdeivert@jpmsj.com
San Jose, CA 95131


Mr. Davin Stockwell  (O)          Phone: (714) 951-6621 x3433
Thomas & Betts Corp.                Fax: (714) 951-1016
Electronics Division             Email: dstockwell@thombetts.com
Irvine, CA 92618


Mr. John Hoy  (A)                 Phone: (408) 526-2528
Toshiba America                     Fax: (408) 526-2428
AITC                             Email: john.hoy@aitc.toshiba.com
1060 Rincon Circle
San Jose, CA 95131

Mr. Tasuka Kasebayahi  (P)        Phone: (949) 461-3886
Toshiba America Elec. Comp.         Fax: (949) 458-7815
35 Hammond                       Email: task.kasebayashi@taec.toshiba.com
Irvine, CA 92618-1607


Mr. Kenneth J. Hallam  (P)        Phone: (949) 380-5115
UNISYS Corporation                  Fax: (949) 380-5858
MV201                            Email: ken.hallam@unisys.com
25725 Jeronimo Road
Mission Viejo, CA 92691


Mr. Arlan P. Stone  (A)           Phone: (949) 380-5982
UNISYS Corporation                  Fax: (949) 380-5858
MS 201                           Email: arlan.stone@unisys.com
25725 Jeronemo Rd.
Mission Viejo, CA 92691


Mr. Dave Wehrman  (O)             Phone: (313) 426-8847
UNISYS Corporation                  Fax: (313) 426-8847
11716 Highridge                  Email: dave.wehrman2@unisys.com
Pinckney, MI 48169


Mr. Paul D. Aloisi  (P)           Phone: (603) 429-8687
Unitrode Corporation                Fax: (603) 429-8963
MS: 84                           Email: aloisi@unitrode.com
7 Continental Blvd
Merrimack, NH 03054

Mr. Donald R. Getty  (A)          Phone: (408) 246-3100 x41
Unitrode Corporation                Fax: (408) 246-3101
Suite 220                        Email: gettd@unitrode.com
4010 Moorpark Ave.
San Jose, CA 95117-1843


Mr. Marq Elliott  (O)             Phone: (408) 662-7900
Verisys                             Fax:

```
335-H Spreckels Dr.            Email:
Aptos, CA 95003


Mr. Michael G. Kaminski  (O)   Phone: (408) 945-7766
Volex Inc.                       Fax: (408) 945-4360
835 Sinclair Frontage Road     Email: Mike_Kaminski@volex.com
Milpitas, CA 95035


Mr. Jeffrey L. Williams  (P)   Phone: (507) 286-7589
Western Digital Corporation      Fax: (507) 286-7528
1599 N. Broadway Ave.          Email: Jeffrey.L.Williams@wdc.com
Rochester, MN 55906


Mr. Gregory Kapraun  (A)       Phone: (507) 286-7763
Western Digital Corporation      Fax: (507) 286-7528
1599 N. Broadway               Email: Gregory.D.Kapraun@wdc.com
Rochester, MN 55906


Mr. Doug Piper  (P)            Phone: (803) 967-1751
Woven Electronics                Fax: (803) 963-1761
PO Box 189                     Email: doug.piper@wovenelectronics.com
Mauldin, SC 29662


Mr. E.J. Mondor  (A)           Phone: (803) 967-1739
Woven Electronics                Fax: (803) 963-1761
PO Box 189                     Email: 549.9900@mcimail.com
Mauldin, SC 29662


Mr. Larry Aszmann  (O)         Phone: (612) 828-5978
Xiotech Corp.                    Fax: (612) 828-5990
#200                           Email: laszmann@xiotech.com
6509 Flying Cloud Dr.
Eden Prairie, MN 55344

Mr. Arnold Limjoco  (O)        Phone: (408) 456-0797 x134
Yamaichi Electronics             Fax: (408) 456-0799
2235 Zanker Rd.                Email: arnold.l@yeu.com
San Jose, CA 95131
```

T10 Document Database on 1999/03/17 at 20:36:43 -- Enclosure (3)

T10/99-101R0  Date: 1998/12/04  Author:  Ron Roberts       Mailing: 1999_1
Minutes of MMC-2 Working Group - 11/30 - 12/2/98

T10/99-102R0  Date: 1998/12/08  Author:  Larry Lamers       Mailing: 1999_1
Unexpected Bus Free Timeout Function

T10/99-102R1  Date: 1999/01/25  Author:  Larry Lamers       Mailing: 1999_1
UBF Timeout Function

T10/99-102R2  Date: 1999/01/27  Author:  Larry Lamers       Mailing: 1999_1
Synchronous Transfer Timeout Function

T10/99-102R3  Date: 1999/01/28  Author:  Larry Lamers       Mailing: 1999_1
STT Timeout Function

T10/99-102R4  Date: 1999/02/05  Author:  Larry Lamers       Mailing: 1999_1
STT Timeout Function

T10/99-102R5  Date: 1999/03/10  Author:  Larry Lamers       Mailing: 1999_1
STT Timeout Function

T10/99-103R0  Date: 1998/12/17  Author:  John Lohmeyer       Mailing: 1999_1
Minutes of SPI-3 Working Group - January 26-27, 1999

T10/99-104R0  Date: 1999/01/10  Author:  George Penokie      Mailing: 1999_1
Message Information Unit Definition

T10/99-104R1  Date: 1999/03/09  Author:  George Penokie      Mailing: 1999_1
Message Information Unit Definition

T10/99-105R0  Date: 1999/01/06  Author:  Stewart Wyatt       Mailing: 1999_1
Minutes of Fibre Channel Tape Profile Meeting - 12/16/98

T10/99-106R0  Date: 1999/01/06  Author:  Penman,            Mailing: 1999_1
                                         Mottahedin,
                                         Nazir, & Moore
Case Study: Fast-80 Setup and Hold Timings

T10/99-107R0  Date: 1998/12/10  Author:  ISO/IEC JTC 1/SC  Mailing: 1999_1
                                         25
Optical Memory Card Device Commands (SCSI OMC)

T10/99-108R0  Date: 1999/01/07  Author:  John Lohmeyer       Mailing: 1999_1
Clarification of interaction of SDTR/WDTR messages with PPR message

T10/99-108R1  Date: 1999/01/27  Author:  John Lohmeyer       Mailing: 1999_1
Clarification of interaction of SDTR/WDTR messages with PPR message

T10/99-108R2  Date: 1999/02/09  Author:  John Lohmeyer       Mailing: 1999_1
Clarification of interaction of SDTR/WDTR messages with PPR message

T10/99-108R3  Date: 1999/03/09  Author:  John Lohmeyer       Mailing: 1999_1
Clarification of interaction of SDTR/WDTR messages with PPR message

T10/99-109R0  Date: 1999/01/07  Author:  John Lohmeyer       Mailing: 1999_1
Clarification of MODIFY DATA POINTER message

```
T10/99-110R0  Date: 1999/01/07  Author:  Gene Milligan     Mailing: 1999_1
SCSI Version Proposal Flavor Two for SPC-2

T10/99-110R1  Date: 1999/03/04  Author:  Gene Milligan     Mailing: 1999_1
SCSI Version Proposal Flavor Two for SPC-2

T10/99-110R2  Date:                Author:  Gene Milligan     Mailing: 1999_1
SCSI Version Proposal Flavor Two for SPC-2

T10/99-111R0  Date: 1999/01/26  Author:  Zane Daggett      Mailing: 1999_1
Recommended changes to SPI-3 Tables

T10/99-112R0  Date: 1999/01/22  Author:  Bill Galloway     Mailing: 1999_1
Synchronous ATN timing

T10/99-112R1  Date: 1999/03/07  Author:  Bill Galloway     Mailing: 1999_1
Synchronous ATN timing

T10/99-112R2  Date: 1999/03/13  Author:  Bill Galloway     Mailing: 1999_1
Synchronous ATN timing

T10/99-113R0  Date: 1999/01/22  Author:  Bill Galloway     Mailing: 1999_1
DiffSense Timing

T10/99-113R1  Date: 1999/03/07  Author:  Bill Galloway     Mailing: 1999_1
DiffSense Timing

T10/99-113R2  Date: 1999/03/13  Author:  Bill Galloway     Mailing: 1999_1
DiffSense Timing

T10/99-114R0  Date: 1999/01/22  Author:  Bill Galloway     Mailing: 1999_1
LVD Receiver offset voltage

T10/99-115R0  Date: 1999/01/22  Author:  Keld Simonsen     Mailing: 1999_1
Tips & Techniques for JTC 1 web-based distribution

T10/99-116R0  Date: 1999/01/22  Author:  Jie Fan          Mailing: 1999_1
Cable Testing Requirements

T10/99-116R1  Date: 1999/01/26  Author:  Jie Fan          Mailing: 1999_1
Cable Testing Requirements

T10/99-117R0  Date: 1999/01/22  Author:  ISO              Mailing: 1999_1
ISO's long-range strategies 1999-2001

T10/99-118R0  Date: 1999/01/25  Author:  Jim McGrath      Mailing: 1999_1
Common CRC for DT and Packetized SCSI

T10/99-119R0  Date: 1999/02/26  Author:  Jim McGrath      Mailing: 1999_1
Protection for the Asynchronous Information phases (Command, Message, Status)

T10/99-119R1  Date: 1999/03/05  Author:  Jim McGrath      Mailing: 1999_1
Protection for the Asynchronous Information phases (Command, Message, Status)

T10/99-120R0  Date: 1999/01/22  Author:  Gene Milligan     Mailing: 1999_1
SCSI ATN Timing Sort of Proposal for SPI-3

T10/99-121R0  Date: 1999/02/10  Author:  Rob Sims         Mailing: 1999_1
Mt. Fuji Commands for Multimedia Devices
```

```
T10/99-122R0  Date: 1999/01/25  Author:  Frank Gasparik   Mailing: 1999_1
SPI-3 LVD Setup/Hold Time Issues

T10/99-123R0  Date: 1999/01/26  Author:  Vince Bastiani   Mailing: 1999_1
Setup and Hold Time Measurements

T10/99-124R0  Date: 1999/01/24  Author:  Bruce Leshay     Mailing: 1999_1
Packetized CRC Proposal

T10/99-125R0  Date: 1999/01/27  Author:  Ron Roberts      Mailing: 1999_1
Minutes of MMC-2 Working Group - 1/25-27/99

T10/99-126R0  Date: 1999/01/27  Author:  Ron Roberts      Mailing: 1999_1
Report

T10/99-127R0  Date: 1999/01/27  Author:  Paul Aloisi      Mailing: 1999_1
Proposed changes to SPI-3 LVD AC timing diagrams

T10/99-127R1  Date: 1999/01/28  Author:  Paul Aloisi      Mailing: 1999_1
Proposed changes to SPI-3 LVD AC timing diagrams

T10/99-127R2  Date: 1999/03/09  Author:  Paul Aloisi      Mailing: 1999_1
LVD Timing Diagram Correction

T10/99-127R3  Date: 1999/03/09  Author:  Paul Aloisi      Mailing: 1999_1
LVD Timing Diagram Correction

T10/99-127R4  Date: 1999/03/09  Author:  Paul Aloisi      Mailing: 1999_1
LVD Timing Diagram Correction

T10/99-128R0  Date: 1999/02/02  Author:  Hayden Smith     Mailing: 1999_1
Comments on Draft 14776-381 (SCSI OMC)

T10/99-128R1  Date: 1999/03/16  Author:  Hayden Smith     Mailing: 1999_1
Comments on Draft 14776-381 (SCSI OMC)

T10/99-129R0  Date: 1999/02/02  Author:  Ralph Weber &    Mailing: 1999_1
                                         George Penokie
Minutes of SPC-2 Working Group - 1/28/99

T10/99-130R0  Date: 1999/02/10  Author:  George Penokie   Mailing: 1999_1
Changes to INQUIRY

T10/99-130R1  Date: 1999/03/10  Author:  George Penokie   Mailing: 1999_1
Changes to INQUIRY

T10/99-131R0  Date: 1999/02/05  Author:  Tariq Abou-Jeyab Mailing: 1999_1
                                         / Vince Bastiani
Setup and hold time measurements for Ultra 160/m

T10/99-132R0  Date: 1999/03/07  Author:  Bill Galloway    Mailing: 1999_1
Removing zero length data transfers with CRC

T10/99-133R0  Date: 1999/03/07  Author:  Bill Galloway    Mailing: 1999_1
Timing for SCSI RST line

T10/99-134R0  Date: 1999/03/07  Author:  Bill Galloway    Mailing: 1999_1
PPR Protocol options negotiation
```

T10/99-134R1  Date: 1999/03/13  Author:  Bill Galloway     Mailing: 1999_1
PPR Protocol options negotiation

T10/99-135R0  Date: 1999/03/16  Author:  Weber & Lohmeyer  Mailing: 1999_1
Minutes of SPI-3 Working Group - March 9, 1999

T10/99-136R0  Date: 1999/03/17  Author:  Weber & Lohmeyer  Mailing: 1999_1
Minutes of SCSI-3 Working Group - March 10, 1999

T10/99-137R0  Date: 1999/02/25  Author:  Weber & Lohmeyer  Mailing: 1999_1
Minutes of T10 Plenary Meeting #30 - March 11, 1999

T10/99-138R0  Date: 1999/02/09  Author:  Larry Lamers      Mailing: 1999_1
Patent Letter for SPI-3 from Adaptec

T10/99-139R0  Date: 1999/03/04  Author:  Gene Milligan,    Mailing: 1999_1
                                         George Penokie,
                                         & Larry Lamers
Packet Protocol Extensions

T10/99-139R1  Date: 1999/03/10  Author:  Gene Milligan,    Mailing: 1999_1
                                         George Penokie,
                                         & Larry Lamers
Packet Protocol Extensions

T10/99-139R2  Date: 1999/03/10  Author:  Gene Milligan,    Mailing: 1999_1
                                         George Penokie,
                                         & Larry Lamers
Packet Protocol Extensions

T10/99-139R3  Date: 1999/03/15  Author:  Gene Milligan,    Mailing: 1999_1
                                         George Penokie,
                                         & Larry Lamers
Packet Protocol Extensions

T10/99-140R0  Date: 1999/02/28  Author:  Larry Lamers      Mailing: 1999_1
Project Proposal for SCSI Parallel Interface - 4 (SPI-4)

T10/99-141R0  Date: 1999/02/26  Author:  Larry Lamers      Mailing: 1999_1
A Common CRC Method for Packetized and Legacy Devices

T10/99-142R0  Date: 1999/02/26  Author:  Larry Lamers      Mailing: 1999_1
System Considerations for Parallel SCSI

T10/99-143R0  Date: 1999/03/02  Author:  Steve Wilson      Mailing: 1999_1
Extended Copy Command

T10/99-144R0  Date: 1999/03/01  Author:  Bob Snively       Mailing: 1999_1
Suggested changes to REPORT LUNS command for SPC-2

T10/99-144R1  Date: 1999/03/15  Author:  Bob Snively       Mailing: 1999_1
Suggested changes to REPORT LUNS command for SPC-2

T10/99-145R0  Date: 1999/03/01  Author:  Stewart Wyatt     Mailing: 1999_1
Minutes of Joint T11/T10 FC-TAPE Meeting - 2/10-11/99

T10/99-146R0  Date: 1999/03/02  Author:  Bob Snively       Mailing: 1999_1
Correction in interaction of persistent and legacy reservations

T10/99-146R1  Date: 1999/03/15  Author:  Bob Snively      Mailing: 1999_1
Correction in interaction of persistent and legacy reservations

T10/99-147R0  Date: 1999/03/05  Author:  Bob Snively      Mailing: 1999_1
Make CT and TTD obsolete

T10/99-148R0  Date: 1999/03/05  Author:  Ian 'Sid'        Mailing: 1999_1
                                         Crighton
Memory in Cartridge proposal

T10/99-149R0  Date: 1999/03/08  Author:  Bill Ham         Mailing: 1999_1
Revised SPI-3 Timing Diagram

T10/99-150R0  Date: 1999/03/08  Author:  Richard          Mailing: 1999_1
                                         Tomaszewski, Tom
                                         Grieff, & Rob
                                         Elliot
Justification for asynchronous information phase protection

T10/99-151R0  Date: 1999/03/04  Author:  Gene Milligan,   Mailing: 1999_1
                                         George Penokie,
                                         and Larry Lamers
Packet Protocol Extensions Illustrations

T10/99-152R0  Date: 1999/03/09  Author:  Ron Roberts      Mailing: 1999_1
Minutes of MMC-2 Working Group - 3/9-10/99

T10/99-153R0  Date: 1999/03/09  Author:  Ron Roberts      Mailing: 1999_1
Project Proposal for MMC-3

T10/99-154R0  Date: 1999/03/09  Author:  Ron Roberts      Mailing: 1999_1
Project Proposal for RMC

T10/99-155R0  Date: 1999/03/09  Author:  Gene Milligan    Mailing: 1999_1
Timing Diagram

T10/99-156R0  Date: 1999/03/09  Author:  Bill Ham and     Mailing: 1999_1
                                         Zane Daggett
Report from the SCSI Cable Testing Ad hoc -- March 2, 1999

T10/99-157R0  Date: 1999/03/10  Author:  Bruce Leshay     Mailing: 1999_1
Proposed edit to SPI-3 on P_CRCA transitions during DT transfers

T10/99-158R0  Date: 1999/03/10  Author:  Bob Snively      Mailing: 1999_1
Very long CDBs in FCP-2 and SPI-3

T10/99-158R1  Date: 1999/03/15  Author:  Bob Snively      Mailing: 1999_1
Very long CDBs in FCP-2 and SPI-3

T10/99-159R0  Date: 1999/03/09  Author:  Dale LaFollette  Mailing: 1999_1
Joint T10/T11 FC-TAPE / SSC / FCP-2 Liaison Report

T10/99-160R0  Date: 1999/03/10  Author:  Gerry Houlder    Mailing: 1999_1
Fairness feature control in SPI-3

T10/99-161R0  Date: 1999/03/11  Author:  Larry Lamers     Mailing: 1999_1
Meeting Notice - SPI-3 Working Group 4/7-8/99

```
T10/99-162R0  Date: 1999/03/15  Author:  Stewart Wyatt     Mailing: 1999_1
Minutes of Joint T11/T10 FC-TAPE Meeting - 3/9/99

T10/99-163R0  Date: 1999/03/17  Author:  Ralph Weber       Mailing: 1999_1
Comments on Extended Copy

T10/99-164R0  Date: 1999/03/11  Author:  Gene Milligan      Mailing: 1999_1
ISO Report for March 1999
```