Accredited Standards Committee*
InterNational Committee for Information Technology Standards (INCITS)

To: T10 Membership
From: Ralph Weber / John Lohmeyer
Subject: Minutes of T10 Plenary Meeting #68 -- July 14, 2005
            Colorado Spring, CO

Agenda

1. Opening Remarks
2. Approval of Agenda
3. Attendance and Membership
4. Approval of Minutes - May 2005 - Oklahoma City, OK (T10/05-165r1)
5. Document Distribution
6. Call for Patents
7. Review of Old Action Items
8. Project Status Reports
    8.1   Project Status Summary and INCITS Liaison [Lohmeyer]
        8.1.1   INCITS Antitrust Guidelines
    8.2   SCSI Primary Commands - 3 (SPC-3) Project 1416-D [Weber]
    8.3   SCSI Block Commands - 2 (SBC-2) Project 1417-D [Elliott]
    8.4   Bridge Controller Commands (BCC) Project 1528-D [Elliott]
    8.5   MultiMedia Command Set - 4 (MMC-4) Project 1545-D [McFerrin]
    8.6   Automation/Drive Interface - Transport Protocol (ADT) Project 1557-D [Entzel]
    8.7   Automation/Drive Interface - Commands (ADC) Project 1558-D [Entzel/Wideman]
    8.8   SCSI Enclosure Services - 2 (SES-2) Project 1559-D [Elliott]
    8.9   Fibre Channel Protocol - 3 (FCP-3) Project 1560-D [Peterson]
    8.10   Serial Attached SCSI - 1.1 (SAS-1.1) Project 1601-D [Elliott]
    8.11   SCSI Stream Commands - 3 (SSC-3) Project 1611-D [Peterson]
    8.12   MultiMedia Command Set - 5 (MMC-5) Project 1675-D [McFerrin]
    8.13   SCSI Architecture Model - 4 (SAM-4) Project 1683-D [Penokie]
    8.14   SCSI / ATA Translation (SAT) Project 1711-D [Sheffield]
    8.15   Object-Based Storage Devices - 2 (OSD-2) Project 1729-D [Weber]
    8.16   SCSI Media Changer Command Set - 3 (SMC-3) Project 1730-D [Banther]
    8.17   SCSI Primary Commands - 4 (SPC-4) Project 1731-D [Weber]
    8.18   Serial Attached SCSI Driver Interface (SDI) Project 1740-D [Elliott]
    8.19   Automation/Drive Interface - Commands - 2 (ADC-2) Project 1741-D [Hawks]
    8.20   Automation/Drive Interface - Transport Protocol - 2 (ADT-2) Project 1742-D [Entzel]
    8.21   Serial Attached SCSI - 2 (SAS-2) Project 1760-D [Elliott]
9. Old Business
10. New Business
    10.1   Actions on SAS Protocol Working Group Recommendations
    10.2   Actions on SAS PHY Working Group Recommendations
    10.3   Actions on SAT Working Group Recommendations
    10.4   Actions on CAP Working Group Recommendations
    10.5   Actions on Other Working Group Recommendations

Results of Meeting

1. Opening Remarks

John Lohmeyer, the T10 Chair, called the meeting to order at 9:00 a.m., Thursday May 5, 2005. He thanked LSI Logic for hosting the meeting.

John said that INCITS subgroup membership forms and the T10 document subscription forms are available on the meeting web site. He said that people should use these forms to ensure the INCITS Secretariat has the latest membership information. These forms should be mailed directly to the INCITS Secretariat.

As is customary, the people attending introduced themselves. Attendance was taken electronically via the meeting web site.

2. Approval of Agenda

No additions/changes were made to the draft agenda.

George Penokie moved and Ralph Weber seconded that the agenda be approved. In the absence of any objections, the motion passed unanimously.

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

    10.6   Apply ASC SCSI TO HOST SYSTEM INTERFACE FAILURE to Disks and Tapes

3. Attendance and Membership

The membership requirements were reviewed. INCITS 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 begin voting at the beginning of his/her second meeting.

To maintain membership, organizations must pay the INCITS Service Fee ($800).

John briefly discussed the mailing fees. Complete pricing information is contained in the 2005 membership form (available at http://www.t10.org/ftp/t10/mem_form.txt).

There are also minimum attendance requirements to maintain voting membership on T10. If a member organization fails to attend two of the last three T10 meetings, they are warned that failing to attend the next T10 meeting would result in their membership being terminated.

The Chair said he had sent emails to 8 people from 5 organizations informing them that their membership was in jeopardy due to non-attendance (see 05-189r0) and that their membership would be terminated if they did not attend this meeting. The following organizations were in attendance jeopardy:

CNT
Hitachi Cable Manchester
Pivot3, Inc.
QLogic Corp.
Storage Technology Corp.

John Lohmeyer noted that CNT is now McDATA.

All the other organizations in attendance jeopardy were present so no additional organizations were changed to Advisory (non-voting) status.

M-Systems joined T10 with Avraham Shimor as the Principal member and Ariel Sobelman as the Alternate member.

The T10 membership during the meeting was 46 organizations, up from the 45 member organizations extant at the time the meeting was convened. Enclosure (1) is the list of the people present at the meeting and enclosure (2) is the current T10 membership list.

John Lohmeyer reminded members that failure to vote on two out of the last three letter ballots also would result in membership jeopardy. The current letter ballot jeopardy status is as shown:

```
T10 Letter Ballot Jeopardy Report -- 2005/04/29

                              Ballot:  04-326r0      05-125r0      05-134r0
                              Report:  04-327r0      05-126r0      05-135r0
                              Acronym: SPC-3         SAS-1.1       FCP-3
Organization
-------------------------------- ------------  ------------  ------------
Agilent Technologies                  DNV           Yes           Yes
Crossroads Systems, Inc.      (*)     Yes           DNV           DNV
QLogic Corp.                          DNV           Yes           Yes

Key:
Yes     Organization voted Yes
No      Organization voted No
Abs     Organization voted Abstain
DNV     Organization failed to return letter ballot
--      Organization was not a voting member for the letter ballot
(*)     Organization is in letter ballot jeopardy (and has voluntarily changed
        to Advisory status)
```

4.   Approval of Minutes - May 2005 - Oklahoma City, OK (T10/05-165r1)

George Penokie moved and Ralph Weber seconded that the minutes be approved. In the absence of any objections, the motion passed unanimously.

5.   Document Distribution

Members who have any problems with their mailing subscription should deal directly with Parthenia Purnell (ppurnell@itic.org) (202) 626-5741. A subscription form is included on the meeting disk.

John Lohmeyer requested that all documents for the next mailing be uploaded to the T10 web site by 10:30 a.m. on Thursday July 21, 2005. Documents received after this time may 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.

People can obtain T10 document numbers and revised T10 document numbers by filling out a web form at http://www.t10.org/members/. The assigned T10 document number will be sent to the requestor by e-mail. The requestor may then reply to this email, including the document to be posted as an attachment. The document will be automatically posted on the T10 web site.

T10 members can complete this entire process using their personal T10 password. John explained that members who do not know their password should surf to the above URL and click on the "forgot password" link to have their password sent to them via e-mail.

John noted that non-members can also use the above document number process, but their requests will require approval by an administrator.

Minutes are available on the T10 World Wide Web page (see below), and are distributed to the T10 Reflector.

To be added to the T10 Reflector, send an e-mail to majordomo@t10.org with the line 'subscribe t10' in the message body.

The INCITS Secretariat maintains a World Wide Web page at:

   http://www.incits.org/.

LSI Logic maintains a web site on behalf of T10 on a server donated by the SCSI Trade Association at:

   http://www.t10.org/

There is also a mirror site at:

   http://www.t11.org/t10/

The T10 document register is available at:

   ftp://ftp.t10.org/t10/dr.txt

6. Call for Patents

John Lohmeyer explained that this is a regular agenda item to identify any potential patent issues with developing standards and technical reports.

For additional information on ANSI procedures and the ANSI patent policy, please see the INCITS web page at http://www.incits.org/call.htm. The contact for INCITS patent issues is Lynn Barra (lbarra at itic dot org) or (202) 626-5739. Gene Milligan prepared a useful "Handy dandy Technical Committee's Patents Guide", which is available at ftp://ftp.t10.org/t10/document.99/99-291r0.pdf.

John Lohmeyer presented a summary of the ANSI patent policy prepared by Gary Robinson. The summary is also included on the Rules and Procedures (plus Patent Information) page on the T10 web site.

Bob Sheffield reminded the committee that a statement of the Intel patent policy can be found in T10/01-041r0.

John asked that anyone who knows of other applicable patents to contact him.

There were no other responses to the call for patents other than those mentioned above.

7. Review of Old Action Items

603   Gary Robinson will notify INCITS that T10 recommends T10/04-1216r0 as a JTC1/SC25 NWIP for 14776-151: IT - Small Computer System Interface (SCSI) - 1.1. -Part 151: Serial Attached SCSI (SAS-1.1), answering the 6 questions 'Yes' and naming Gary S. Robinson as the project editor. *Carry Over.*

604   John Lohmeyer will forward SPC-3 Rev 23 to INCITS for first public review. *Complete.*

605   John Lohmeyer will report to INCITS that T10 has reviewed the MMC-4 (INCITS 401) edits documented in T10/05-152r0 and deems them non substantive and that T10 recommends that INCITS continue processing MMC-4 including these edits. *Complete.*

606   John Lohmeyer will notify INCITS that T10 recommends to INCITS that ANSI FCP-2 (INCITS 350:2003) be maintained without change regardless of the status of the ISO version. *Complete.*

607   Gary Robinson will notify the JTC1/SC25 TAG that T10 has reviewed FCD, SBC-2, 14776-322, project 1.25.13.11.31 and recommends a vote to approve it. *Carry Over.*

608   Gary Robinson will notify INCITS that T10 recommends the following list of delegates to the JTC1/SC25 and WG4 meeting September 2005 in Edinburgh, UK: Robert Snively (head of delegation), Roger Cummings, and Claudio DeSanti. *Carry Over.*

609   Gary Robinson will notify INCITS that T10 has reviewed the following ISs and recommends that the JTC1 TAG vote to reaffirm them: 9316-2:2000 Information Technology -- Small Computer System Interface-2 (SCSI-2) -- Part 2: Common Access Method (CAM) Transport SCSI interface module; 14776-342:2000 Information Technology -- Small Computer System Interface (SCSI) -- Part 342: SCSI Controller Commands - 2 (SCC-2); and 14776-381:2000 Information Technology -- Small Computer System Interface (SCSI) -- Part 381: Optical Memory Card Device Commands (OMC). *Carry Over.*

610   Gary Robinson will notify INCITS that T10 has reviewed the 14776-341:2000 Information Technology -- Small Computer System Interface-3 (SCSI-3) -- Part 341: SCSI Controller Commands (SCC) and recommends that the JTC1 TAG vote to withdraw it. *Carry Over.*

611   Gary Robinson will notify INCITS that T10 has reviewed the following ISs and recommends that the JTC1 TAG vote to reaffirm them: 13213:1994 Information Technology -- Microprocessor systems -- Control and Status Registers (CSR) Architecture for microcomputer buses; 15205:2000 Bus -- Chip and module interconnect bus SBus; 13961:2000 Information Technology -- Scalable Technologies -- Interface Coherent Interface (SCI); ISO 9314-1:1989 Information Processing Systems -- Distributed Data Interface (FDDI) -- Part 1: Token Ring Physical Layer (FDDI); ISO 9314-2:1989 Information Processing Systems -- Fibre Distributed Data Interface (FDDI) -- Part 2: Token Ring Media Access Control (FDDI) -- (MAC); 9314-9:2000 Information Technology -- Fibre Distributed Data Interface (FDDI) -- Part 9: Low-cost fibre physical

layer medium dependent (LCF-PMD); 9314-21:2000 Information Technology -- Interface Distributed Data Interface (FDDI) -- Part 21: Abstract test suite for FDDI physical layer protocol conformance testing (FDDI PHY ATS). *Carry Over.*

8.   Project Status Reports

8.1   Project Status Summary and INCITS Liaison [Lohmeyer]

John Lohmeyer said that the current T10 project status summary was included on the meeting web site and will be included in the mailing as usual.

8.1.1   INCITS Antitrust Guidelines

All T10 members should be aware of the INCITS antitrust guidelines available at http://www.incits.org/natrust.htm.

John reminded committee members that all persons present at a T10 meeting is responsible for identifying potential violations of the antitrust guidelines and reporting them to the chair. Discussions of the following topics are considered sensitive:

  * Any company's prices or pricing policies;
  * Specific R&D, sales and marketing plans;
  * Any company's confidential product, product development or production strategies;
  * Whether certain suppliers or customers will be served;
  * Prices paid to input sources; or
  * Complaints about individual firms or other actions that might tend to hinder a competitor in any market.

8.2   SCSI Primary Commands - 3 (SPC-3) Project 1416-D [Weber]

Ralph Weber reported that the ANSI Editor's comments regarding SPC-3 were received and responded to during the past week. Publication is anticipated in the next month or so.

8.3   SCSI Block Commands - 2 (SBC-2) Project 1417-D [Elliott]

John Lohmeyer reported that SBC-2 has been published as ANSI INCITS 405-2005. He congratulated Rob Elliott, the SBC-2 Technical Editor.

8.4   Bridge Controller Commands (BCC) Project 1528-D [Elliott]

Rob Elliott reported that no changes have been made in BCC.

8.5   MultiMedia Command Set - 4 (MMC-4) Project 1545-D [McFerrin]

John Lohmeyer reported that MMC-4 is at INCITS for management review.

8.6   Automation/Drive Interface - Transport Protocol (ADT) Project 1557-D [Entzel]

John Lohmeyer reported that ADT has been published as ANSI INCITS 406-2005. He congratulated Paul Entzel, the ADT Technical Editor.

8.7   Automation/Drive Interface - Commands (ADC) Project 1558-D [Entzel/Wideman]

John Lohmeyer reported that ADC has been published as ANSI INCITS 403-2005. He congratulated Rod Wideman, the ADC Technical Editor.

8.8 SCSI Enclosure Services - 2 (SES-2) Project 1559-D [Elliott]

Rob Elliott reported that no SES-2 proposals were recommended this week. Consequently, no new revision will be generated until at least after the September meeting.

8.9 Fibre Channel Protocol - 3 (FCP-3) Project 1560-D [Peterson]

Dave Peterson presented a report on the activities of the FCP-3 working group (minutes in 05-282). There were issues with FCP_DL processing. An FC-4 reason code discrepancy will be discussed on the reflector. He stated a hope for forwarding to Public Review after the September meeting.

8.10 Serial Attached SCSI - 1.1 (SAS-1.1) Project 1601-D [Elliott]

Rob Elliott said that issues with the Transport Layer state machine have delayed the forwarding of SAS-1.1. He stated a hope for forwarding SAS-1.1 to Public Review after the September meeting.

Minutes of the SAS protocol working group are in 05-272 and the SAS PHY working group are in 05-281.

8.11 SCSI Stream Commands - 3 (SSC-3) Project 1611-D [Peterson]

Dave Peterson presented a report summarizing the activities of the SSC-3 working group (minutes in 05-283).

8.12 MultiMedia Command Set - 5 (MMC-5) Project 1675-D [McFerrin]

Bill McFerrin reported that the MMC-5 group is trying to finalize some issues with the Mt. Fuji group regarding dual layer DVD-R and HD-DVD. Work on the draft is proceeding sequentially on specific sections of the document. A line-by-line review was completed on about 20% the document. The plan is to have all the dual layer DVD-R and HD-DVD issues resolved in September.

Bill stated that an MMC-5 review session will be held near Austin on November 1-4, i.e., the week preceding the T10 meeting week held in Austin.

No new technical input is being accepted; the work is directed at stabilizing the existing proposals.

8.13 SCSI Architecture Model - 4 (SAM-4) Project 1683-D [Penokie]

George Penokie reported that no new proposals have been approved for SAM-4 this week, meaning that no new revision of SAM-4 will be prepared before the September meeting week.

8.14 SCSI / ATA Translation (SAT) Project 1711-D [Sheffield]

Bob Sheffield reviewed the recent SAT activities (minutes in 05-228, 05-249, 05-256 and 05-273). He provided a review document for the committee's edification in 05-286r0. He stated that SAT revision 5 will be posted in time for the next the mailing The target for Letter Ballot is after the November meeting week.

8.15 Object-Based Storage Devices - 2 (OSD-2) Project 1729-D [Weber]

Ralph Weber reported that work is underway to prepare a new revision of OSD-2, but that the new revision will not be posted in time for the mailing.

8.16 SCSI Media Changer Command Set - 3 (SMC-3) Project 1730-D [Banther]

Michael Banther reported on the activities of the SMC-3 working group (minutes in 05-254). Michael encouraged members to solicit input for SMC-3 and SSC-3 using a memo that can be found in 05-175r3.

8.17 SCSI Primary Commands - 4 (SPC-4) Project 1731-D [Weber]

Ralph Weber stated that r0 of SPC-4, which will include the ANSI Editor's comments regarding SPC-3, will be posted. In addition, SPC-4 r01 will be posted containing all approved changes. Both revisions should be posted before the next meeting but not in time for the mailing.

8.18 Serial Attached SCSI Driver Interface (SDI) Project 1740-D [Elliott]

Rob Elliott noted that any changes to the SDI will be handled in the CAP working group and that no changes are currently proposed.

8.19 Automation/Drive Interface - Commands - 2 (ADC-2) Project 1741-D [Hawks]

Paul Suhler reported on the activities of the ADI working group (minutes in 05-155). Paul reported that Paul Entzel will replace David Hawks as ADC-2 editor.

8.20 Automation/Drive Interface - Transport Protocol - 2 (ADT-2) Project 1742-D [Entzel]

Paul Suhler reported on the activities of the ADI working group (minutes in 05-155).

8.21 Serial Attached SCSI - 2 (SAS-2) Project 1760-D [Elliott]

Rob Elliott reported that work has begun SAS-2 and that STA has been asked to provide guidance on the 6 Gbs features.

9.　Old Business

There was no old business.

10.　New Business

10.1 Actions on SAS Protocol Working Group Recommendations

The recommendations from the SAS protocol working group (minutes in 05-272) were presented to the committee.

George Penokie reviewed 05-167r5 (New NOTIFY to indicate imminent power failure) [Penokie] a proposal recommended for inclusion in SAS-2.

George Penokie moved that 05-167r5 be approved for inclusion in SAS-2. Gerry Houlder seconded the motion. The motion passed on a vote of 28:0:6:12=46.

10.2 Actions on SAS PHY Working Group Recommendations

There were no recommendations made by the SAS physical working group (minutes in 05-281).

10.3 Actions on SAT Working Group Recommendations

The recommendations from the SAT working group (minutes in 05-273) were presented to the committee.

George Penokie and Mark Overby reviewed the following proposals recommended for inclusion in SAT:

    05-136r2 (REASSIGN BLOCKS command) [Bellamy]
    05-177r2 (Write Same Translation) [Stevens]
    05-227r2 (READ MEDIA SERIAL NUMBER proposal) [Overby]
    05-229r0 (Remove Persistent Reservation Commands) [Lohmeyer]
    05-233r3 (ATA Errors to SCSI Errors - Translation Map) [Bellamy]
    05-238r2 (Informational Exceptions Control mode page) [Bellamy]
    05-239r1 (Caching mode page) [Bellamy]
    05-241r2 (Read-Write Error Recovery mode page) [Bellamy]
    05-253r1 (PACKET / non-PACKET Device Definition) [Overby]
    05-280r1 (COMRESET Notification) [Overby]

Bob Sheffield moved that 05-136r2, 05-177r2, 05-227r2, 05-229r0, 05-233r3, 05-238r2, 05-239r1, 05-241r2, 05-253r1, and 05-280r1 be approved for inclusion in SAT. Mark Overby seconded the motion. The motion passed on a vote of 30:0:2:14=46.

10.4 Actions on CAP Working Group Recommendations

The recommendations from the CAP working group (minutes in 05-274) were presented to the committee.

George Penokie reviewed the following proposals recommended for inclusion in SPC-4:

    05-230r0 (Obsolete Per Initiator Port in SPC-4) [Weber]
    05-003r3 (VPD Page 83 Identifier s/b Designator Changes) [Weber, Penokie]

George Penokie reviewed 04-371r2 (Enable Background Operation Error Reporting Bit) [Penokie] a proposal recommended for SPC-4 and SBC-3.

Ralph Weber moved that 05-230r0 and 05-003r3 be approved for inclusion in SPC-4 and that 04-371r2 be approved for SPC-4 and SBC-3. George Penokie seconded the motion. The motion passed on a vote of 30:0:2:14=46.

10.5 Actions on Other Working Group Recommendations

No actions from other working groups were presented for committee consideration.

10.6 Apply ASC SCSI TO HOST SYSTEM INTERFACE FAILURE to Disks and Tapes

George Penokie and Ralph Weber reviewed a request that the additional sense code SCSI TO HOST SYSTEM INTERFACE FAILURE be modified to apply to disk and tape devices.

Paul Suhler moved that the additional sense code SCSI TO HOST SYSTEM INTERFACE FAILURE be modified to apply to disk and tape devices in SPC-4. Erich Oetting seconded the motion.

Mark Overby made a friendly amendment that reduced block devices also be added to the additional sense code. Both Paul and Erich agreed that the amendment was friendly.

The amended motion passed on a vote of 30:0:2:14=46.

11. ISO/IEC

11.1 ISO/IEC Report [Robinson]

John Lohmeyer presented the ISO/IEC report (05-260).

11.2 ISO/IEC Business [Robinson]

No new ISO business was brought before the committee.

12. Liaison Reports

12.1 T11 Liaison Report [Snively]

John Lohmeyer presented the T11 liaison report contained in T10/05-264.

12.2 T13 Liaison Report [Colegrove]

Dan Colegrove provided an oral report to the committee on the activities of T13. Dan noted that negotiations are underway to move responsibility for the SATA transport definition to the SATA I/O group. For details regarding T13 activities see www.t13.org.

12.3 SFF Industry Group [Allan]

In the absence of Dal Allan, no report was available.

12.4 IEEE 1394 [Johansson]

In the absence of Peter Johansson, no report was available.

12.5 SCSI Trade Association (STA) [Czekalski]

Marty Czekalski presented an electronic report on the activities of the SCSI Trade Association available in 05-287r0.

12.6 IETF SCSI over IP [Black/Robinson]

David Black reported that the next IETF meeting is the first week in August in Paris, where a major topic will be adapting iSER to Infiniband. An Implementer's Guide for iSCSI is being development. iSER is going forward for IETF approval soon.

12.7 SNIA [Cummings]

In the absence of Roger Cummings, no report was available.

12.8 Trusted Computing Group [Fitzpatrick]

Mike Fitzpatrick reported verbally on the activities of the TCG and provided an electronic report in 05-288.

13. Review of Action Items

603   Gary Robinson will notify INCITS that T10 recommends T10/04-1216r0 as a JTC1/SC25 NWIP for 14776-151: IT - Small Computer System Interface (SCSI) - 1.1. -Part 151: Serial Attached SCSI (SAS-1.1), answering the 6 questions 'Yes' and naming Gary S. Robinson as the project editor.

607   Gary Robinson will notify the JTC1/SC25 TAG that T10 has reviewed FCD, SBC-2, 14776-322, project 1.25.13.11.31 and recommends a vote to approve it.

608   Gary Robinson will notify INCITS that T10 recommends the following list of delegates to the JTC1/SC25 and WG4 meeting September 2005 in Edinburgh, UK: Robert Snively (head of delegation), Roger Cummings, and Claudio DeSanti.

609   Gary Robinson will notify INCITS that T10 has reviewed the following ISs and recommends that the JTC1 TAG vote to reaffirm them: 9316-2:2000 Information Technology -- Small Computer System Interface-2 (SCSI-2) -- Part 2: Common Access Method (CAM) Transport SCSI interface module; 14776-342:2000 Information Technology -- Small Computer System Interface (SCSI) -- Part 342: SCSI Controller Commands - 2 (SCC-2); and 14776-381:2000 Information Technology -- Small Computer System Interface (SCSI) -- Part 381: Optical Memory Card Device Commands (OMC).

610   Gary Robinson will notify INCITS that T10 has reviewed the 14776-341:2000 Information Technology -- Small Computer System Interface-3 (SCSI-3) -- Part 341: SCSI Controller Commands (SCC) and recommends that the JTC1 TAG vote to withdraw it.

611   Gary Robinson will notify INCITS that T10 has reviewed the following ISs and recommends that the JTC1 TAG vote to reaffirm them: 13213:1994 Information Technology -- Microprocessor systems -- Control and Status Registers (CSR) Architecture for microcomputer buses; 15205:2000 Bus -- Chip and module interconnect bus SBus; 13961:2000 Information Technology -- Scalable Technologies -- Interface Coherent Interface (SCI); ISO 9314-1:1989 Information Processing Systems -- Distributed Data Interface (FDDI) -- Part 1: Token Ring Physical Layer (FDDI); ISO 9314-2:1989 Information Processing Systems -- Fibre Distributed Data Interface (FDDI) -- Part 2: Token Ring Media Access Control (FDDI) -- (MAC); 9314-9:2000 Information Technology -- Fibre Distributed Data Interface (FDDI) -- Part 9: Low-cost fibre physical layer medium dependent (LCF-PMD); 9314-21:2000 Information Technology -- Interface Distributed Data Interface (FDDI) -- Part 21: Abstract test suite for FDDI physical layer protocol conformance testing (FDDI PHY ATS).

14. Meeting Schedule

The next plenary meeting of T10 will be Thursday September 15, 2005 i in Vancouver, BC at the Vancouver Marriott Pinnacle Downtown Hotel (604-684-1128; Reservations: 800-207-4150), hosted by PMC-Sierra. The meeting will begin at 9:00 a.m. on Thursday.

The meeting list for the next plenary week is:

```
                      September 2005 Meeting Map
                        (2005/07/14 Version)

Monday 9/12         9   10  11  12  1   2   3   4   5   6   7   8
                    +==============+     +================+
                    | ADI-2 WG     |     | SMC-3 WG       |         (10)
                    +==============+=====+================+
                    | SAS Prot WG                        |         (40)
                    +====================================+

Tuesday 9/13   8    9   10  11  12  1   2   3   4   5   6   7   8
                    +====================================+
                    | SAS Physical WG                    |         (45)
                    +================================+===+
                    | SCSI/ATA Trans WG              |             (30)
                    +==============+--------------+===+
                                   | STA Marcom *  |               (35)
                    +==============+--------------+
                    | FCP-3 WG     | SSC-3 WG      |               (15)
                    +==============+===============+
                    | MMC WG                       |               (25)
                    +==============================+

Wednesday 9/14      9   10  11  12  1   2   3   4   5   6   7   8
                    +==================================+
                    | CAP WG                           |           (40)
                    +==================================+
                    | MMC WG                           |           (25)
                    +=====================+-----------+
                                          |SFF        |             (30)
                    +----------------+------+-------+---+
                    | STA Plenary * / TCC*          |             (20)
                    +--------------+---------------+   +-------------+
        PMC-Sierra Hosted Boat Cruise (must RSVP) --> | Boat Cruise |
                                                      +-------------+

Thursday 9/15  8    9   10  11  12  1   2   3   4   5   6   7   8
                    +==============+====================+
                    | T10 Plenary  | T10 Editor's Meeting|       (50/10)
                    +==============+====================+

Friday 9/16    8    9   10  11  12  1   2   3   4   5   6   7   8
                    No meetings planned for Friday.
```

/ means the next meeting starts when the previous meeting concludes
Meetings marked with == are T10-authorized meetings.
Meetings marked with -- are other groups and may change without notice.
Meetings marked with (*) are closed meetings of other groups.

```
 Other T10-authorized meetings:
Meeting          Date                Location / Contact
--------------   ------------------  ------------------------------------
SAS PHY Calls                        TBA via T10 reflector / Cox
SAS Prot Calls                       TBA via T10 reflector / Elliott
SAT Call         Tue Jul 26 12n PDT  TBA via T10 reflector / Sheffield
SAT WG           Mon Aug 22          Boulder, CO (T13) / Sheffield
```

```
  Map Abbreviation Key:
ADI:          Automation Drive Interface (tape library interface)
Amnd:         Amendment
CAP:          Commands, Architecture, and Protocols
Fast-80:      Data Transfer at 80 Mega-transfers/sec. (a.k.a., Ultra3,Ultra160)
Fast-160:     Data Transfer at 160 Mega-transfers/sec. (a.k.a., Ultra320)
FC:           Fibre Channel
I/F:          Interface
IETF:         Internet Engineering Task Force (the group that sets
              Internet standards)
iFC:          Internet Fibre Channel
IPS:          Internet Protocol SCSI
iSCSI:        Internet SCSI
LB:           Letter Ballot
MMC:          Multimedia Commands (CD-ROM, DVD, etc.)
OSD:          Object-based Storage Device
Par.:         Parallel (e.g., SPI-n)
PH or PHY:    Physical (Connectors, Cables, Transceivers, etc.)
PIP:          (SCSI) Passive Interconnect Performance
Plenary:      Full Committee Meeting
Res:          Resolution
SAS:          Serial Attached SCSI
SBC-2:        SCSI Block Commands - 2
SBP-3:        Serial Bus Protocol - 3
SCSI:         Small Computer System Interface
SDI:          Serial Attached SCSI Driver Interface
SES:          SCSI Enclosure Services
SFF:          SFF Industry Group (not an INCITS activity)
SG:           Study Group
SMC-2:        SCSI Medium Changer - 2 Commands
SPC-3:        SCSI Primary Commands - 2 (3rd generation)
SPI-4:        Fourth Generation SCSI Parallel Interface
SPI-5:        Fifth Generation SCSI Parallel Interface
SRP:          SCSI RDMA Protocol (was SVP)
SRP-2:        SCSI RDMA Protocol (2nd generation)
SSC-2:        SCSI Stream Commands - 2 (includes Tape)
SSM-2:        SCSI Signal Modeling (2nd generation)
SSWGs:        Specific-Subject Working Groups
STA:          SCSI Trade Association (Closed meeting -- not an INCITS activity)
STA Marcom:   STA Marketing Communications (Closed meeting -- not an INCITS activity)
STA Tech:     STA Technical Meeting (T10 members invited)
STP:          Serial ATA Tunneled Protocol
T10:          SCSI Storage Interfaces Technical Committee
T11:          Device 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
---------------------------  --------------   ------------------------------
ADT, ADT-2                   Paul Entzel      (720) 406-5782
                                              paul.entzel@quantum.com
ADC, ADC-2                   Rod Wideman      (720) 249-5796
                                              rod.wideman@adic.com
SBC-2,SES-2,SAS-1.1,SAS-2,   Rob Elliott      (281) 518-5037
BCC,SDI                                       Elliott@hp.com
MMC-4, MMC-5                 Bill McFerrin    (325) 423-1560
                                              billmc@tstar.net
SBP-3                        Peter Johansson  (510) 527-3926
                                              PJohansson@ACM.org
SAM-4                        George Penokie   (507) 253-5208
                                              gop@us.ibm.com
SAT                          Bob Sheffield    (480) 554-8597
                                              robert.l.sheffield@intel.com
SMC-2                        Erich Oetting    (303) 673-2178
                                              Erich_Oetting@Stortek.com
SMC-3                        Noud Snelder     +31408446108
                                              Noud.snelder@bdt.de
SPC-3, SAM-3, SPC-4, OSD-2   Ralph Weber      (214) 912-1373
                                              roweber@acm.org
SSC-3, FCP-3                 Dave Peterson    (763) 268-6139
                                              david.peterson@mcdata.com
Other Activities             John Lohmeyer    (719) 533-7560
                                              lohmeyer@t10.org
```

The long-term T10 meeting week schedule is:

```
Date                Location                 Host/Comments
------------------  -----------------------  -----------------------------
Sep 12-16, 2005     Vancouver, BC            PMC Sierra
Nov 7-11, 2005      Austin, TX               Dell Computer
Jan 9-13, 2006      Phoenix, AZ              Intel Corp.
Mar 6-10, 2006      TBD                      SCSI Trade Association
May 8-12, 2006      Seattle, WA              Nvidia Corp.
Jul 10-14, 2006     Colorado Springs, CO     LSI Logic
Sep 11-15, 2006     Nashua, NH               Hitachi Cable Manchester
Nov 6-10, 2006      Las Vegas, NV            Hitachi GST
Approved dates for 2007:
Jan 15-19, 2007
Mar 12-16, 2007
May 7-11, 2007
Jul 9-13, 2007      Colorado Springs, CO     LSI Logic
Sep 17-21, 2007 (to avoid conflicts with the Jewish High Holy Days)
Nov 5-9, 2007
Proposed dates for 2008:
```

John Lohmeyer asked people interested hosting one of the above meetings to contact him.

John Lohmeyer moved that T10 approve the March and May 2006 meeting locations and hosts. Mark Overby seconded the motion. In the absence of any objections, the motion passed unanimously.

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.

Curtis Stevens moved that T10 authorize the T10-related meetings and events in the list above that had not previously been approved through the end of August 2005. Erich Oetting seconded the motion. In the absence of any objections, the motion passed unanimously.

15. Adjournment

John Lohmeyer moved and Ralph Weber seconded that the meeting be adjourned. In the absence of any objections, the motion passed unanimously. The meeting was adjourned at 10:25 a.m. on Thursday July 14, 2005.

Enclosure(1) -- Meeting Attendees

```
          Name                    S         Organization
----------------------------------- -- -----------------------------------
Mr. William Lynn                    P  Adaptec, Inc.
Mr. Andy Turudic                    V  Agere Systems
Ms. Pat Thaler                      P  Agilent Technologies
Mr. Paul von Stamwitz               AV AMCC
Mr. Michael Wingard                 P  Amphenol Interconnect
Mr. Paul Griffith                   P  Broadcom Corp.
Mr. James A. Lott, Jr.              P  Dallas Semiconductor
Mr. Kevin Marks                     P  Dell, Inc.
Mr. David Black                     A  EMC Corp.
Mr. Robert H. Nixon                 P  Emulex
Mr. Ralph O. Weber                  P  ENDL Texas
Mr. Douglas Wagner                  P  FCI
Mr. Elwood Parsons                  P  Foxconn Electronics
Mr. Mike Fitzpatrick                P  Fujitsu
Mr. Michael Banther                 V  Hewlett Packard Co.
Mr. Rob Elliott                     P  Hewlett Packard Co.
Mr. Zane Daggett                    P  Hitachi Cable Manchester
Mr. Hitoshi (Todd) Horita           A# Hitachi Cable Manchester
Mr. Dan Colegrove                   P  Hitachi Global Storage Tech.
Mr. George O. Penokie               P  IBM / Tivoli Systems
Mr. Robert Sheffield                P  Intel Corp.
Mr. Dennis Moore                    AV KnowledgeTek, Inc.
Mr. Pat LaVarre                     P  Lexar Media, Inc.
Mr. John Lohmeyer                   P  LSI Logic Corp.
Mr. Ariel Sobelman                  A  M-Systems
Mr. Martin Czekalski                A  Maxtor Corp.
Mr. Mark Evans                      P  Maxtor Corp.
Mr. David Peterson                  P  McDATA
Ms. Emily Hill                      P  Microsoft Corp.
Mr. Jay Neer                        P  Molex Inc.
Mr. Mark Overby                     P  Nvidia Corp.
Mr. James Williams                  AV Oracle
Mr. William P. McFerrin             P  Philips Electronics/CD Edge
Mr. Bill Galloway                   P  Pivot3, Inc.
Dr. Steve Gorshe                    V  PMC-Sierra, Inc.
Mr. Craig W. Carlson                A  QLogic Corp.
Dr. Paul Suhler                     A  Quantum Corp.
Mr. Alvin Cox                       V  Seagate Technology
Mr. Gerald Houlder                  P  Seagate Technology
Mr. William Martin                  P  Sierra Logic, Inc.
Mr. Erich Oetting                   P  Storage Technology Corp.
Mr. Charles Binford                 A  Sun Microsystems, Inc.
Mr. Robert Kando                    A  Texas Instruments
Ms. Ashlie Fan                      P  TycoElectronics
Mr. Dan Gorenc                      A  TycoElectronics
Mr. Ron Mathews                     AV UNISYS Corporation
Mr. Curtis Stevens                  P  Western Digital
Mr. Jeff Williams                   P  Xiotech Corp.
Mr. Rich Ramos                      V  Xyratex


48 People Present
Status Key:  P    -  Principal
             A,A# -  Alternate
             AV   -  Advisory Member
             L    -  Liaison
             V    -  Visitor
```

Enclosure(2) -- T10 Attendance Database
     Generated on 2005/07/19 at 10:07:59

Mr. William Lynn (P)   Phone: (303) 589-4655
Adaptec, Inc.   Fax:
1951 South Fordham St.   Email: bill_lynn at adaptec dot com
Longmont, CO 80503

Mr. Lawrence J. Lamers (A)   Phone: (408) 957-7817
Adaptec, Inc.   Fax: (408) 945-6736
691 S. Milpitas Blvd.   Email: ljlamers at ieee dot org
Milpitas, CA 95035

Mr. Bernhard Laschinsky (AV)   Phone: (610) 712-7937
Agere Systems   Fax: (610) 712-4574
Room 12D-225B   Email: blaschinsky at agere dot com
1110 American Parkway NE
Allentown, PA 18109-9138

Mr. Ken Paist (AV)   Phone: (610) 712-3265
Agere Systems   Fax:
Room 12D-225B   Email: paist at agere dot com
1110 American Parkway NE
Allentown, PA 18109-9138

Ms. Pat Thaler (P)   Phone: (916) 788-5662
Agilent Technologies   Fax:
1101 Creekside Ridge Dr   Email: pat_thaler at agilent dot com
Suite 100, MS RG-10
Roseville, CA 95678

Mr. Niels Reimers (A)   Phone: (916) 788-5720
Agilent Technologies   Fax: (916) 788-6136
1101 Creekside Ridge   Email: niels_reimers at agilent dot com
MS RG-10
Roseville, CA 95678

Mr. Paul von Stamwitz (AV)   Phone: (408) 523-1085
AMCC   Fax: (408) 523-1001
455 West Maude Avenue   Email: pvstamwitz at amcc dot com
Sunnyvale, CA 95085

Mr. Brian Miller (A)   Phone: (281) 340-6500 x130
Amphenol AssembleTech   Fax: (281) 340-6501
4850 Wright Road, Ste. 190   Email: bmiller at assembletech dot com
Stafford, TX 77477

Mr. Michael Wingard (P)   Phone: (607) 786-4241
Amphenol Interconnect   Fax: (607) 786-4311
20 Valley St.   Email: mike dot wingard at aipce dot com
Endicott, NY 13760

Mr. Paul Griffith (P)   Phone: 408-313-6643
Broadcom Corp.   Fax:

2451 Mission College   Email: griffith at broadcom dot com
Santa Clara, CA 95054

Mr. Ron Roberts (A)   Phone: (530) 677-5714
Broadcom Corp.   Fax: (530) 677-1218
5240 Stampede Lane   Email: rkroberts at aol dot com
Shingle Springs, CA 95682

Mr. Robert Snively (P)   Phone: (408) 333-8135
Brocade Comm. Systems, Inc.   Fax:
1745 Technology Drive   Email: rsnively at brocade dot com
San Jose, CA 95110

Mr. Steven Wilson (A)   Phone: (408) 333-8128
Brocade Comm. Systems, Inc.   Fax: (408) 392-6655
1745 Technology Drive   Email: swilson at brocade dot com
San Jose, CA 95110

Mr. Leroy Fong (AV)   Phone: (949) 855-7887
Circuit Assembly Corp.   Fax: (949) 837-8660
18 Thomas St.   Email: leroyf at circuitassembly dot com
Irvine, CA 92618

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

Dr. Claudio DeSanti (P)   Phone: (408) 853-9172
Cisco Systems, Inc.   Fax: (408) 853-9172
170 W. Tasman Dr.   Email: cds at cisco dot com
San Jose, CA 95134

Mr. Fabio Maino (A)   Phone: (408) 853-7530
Cisco Systems, Inc.   Fax: (408) 853-7530
170 W. Tasman Dr.   Email: fmaino at cisco dot com
San Jose, CA 95134

Mr. John Tyndall (AV)   Phone: (512) 928-7282
Crossroads Systems, Inc.   Fax:
8300 North Mopac Expressway   Email: jtyndall at crossroads dot com
Austin, TX 78749

Mr. James A. Lott, Jr. (P)   Phone: (972) 371-4939
Dallas Semiconductor   Fax: (972) 371-4370
4401 S. Beltwood Pkwy.   Email: jim dot lott at dalsemi dot com
Dallas, TX 75244-3292

Mr. Doug Cole (A)   Phone: 972-371-3887

```
Dallas Semiconductor             Fax: 972-371-4370
4401 South Beltwood Pkwy         Email: doug dot cole at dalsemi dot com
Dallas, Texas
75244


Mr. Kevin Marks  (P)             Phone: (512) 723-9173
Dell, Inc.                        Fax: (512) 723-6657
One Dell Way - MS 8540           Email: kevin_marks at dell dot com
Round Rock, TX 78682


Mr. Gary S. Robinson  (P)        Phone: (617) 300-7242
EMC Corp.                         Fax:
85 East India Row                Email: robinson_gary at emc dot com
Apt 18C
Boston, MA, 02110

Mr. David Black  (A)             Phone: (508) 293-7953
EMC Corp.                         Fax: (508) 293-7786
176 South St.                    Email: black_david at emc dot com
Hopkinton, MA 01748


Mr. Robert H. Nixon  (P)         Phone: (714) 885-3525
Emulex                            Fax: (714) 885-3794
3333 Susan St.                   Email: bob dot nixon at emulex dot com
Costa Mesa, CA 92626


Mr. Kenneth Hirata  (A)          Phone: (714) 662-5600
Emulex                            Fax: (714) 885-3794
3333 Susan St                    Email: Ken dot Hirata at Emulex dot com
Costa Mesa, CA 92626


Mr. I. Dal Allan  (A)            Phone: (408) 867-6630
ENDL                              Fax: (408) 867-2115
14426 Black Walnut Ct.           Email: endlcom at acm dot org
Saratoga, CA 95070


Mr. Ralph O. Weber  (P)          Phone: (214) 912-1373
ENDL Texas                        Fax: (972) 596-2775
Suite 102#178                    Email: roweber at ieee dot org
18484 Preston Rd.
Dallas, TX 75252

Mr. Keith Holt  (A)              Phone: (316) 636-8665
Engenio Information Tech.         Fax:
3718 N. Rock Rd.                 Email: keith dot holt at lsil dot com
Wichita, KS 67226-1397


Mr. Douglas Wagner  (P)          Phone: (805) 498-0325
FCI                               Fax:
472 Delwood Ct.                  Email: dwagner at fciconnect dot com
Newbury Park, CA 91320-4819
```

Mr. Elwood Parsons (P)   Phone: (717) 558-7518 x141
Foxconn Electronics   Fax: (717) 558-9306
100 S. 38th St.   Email: elwood dot parsons at foxconn dot
                                        com
Harrisburg, PA 17105

Mr. Mike Fitzpatrick (P)   Phone: (405) 820-5809
Fujitsu   Fax: (405) 755-8073
2904 Orchard Pkwy.   Email: mfitzpatrick at fcpa dot fujitsu
                                        dot com
San Jose, CA 95134

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

Mr. Erhard Weiss (AV)   Phone: 49-821-804-3602
Fujitsu Siemens Comp. gmbH   Fax: 49-821-804-2910
Depatment: SNI PC SB ESW   Email: weiss dot abg at sni dot de
Burgermeister-Ulrich-St
D-86199 Augsburg Germany

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

Mr. Nathan Hastad (P)   Phone: (952) 956-5417
General Dynamics   Fax: (952) 956-5445
3021 American Blvd East   Email: nathan dot hastad at gd-ais dot com
Bloomington, MN 55425

Mr. Tim Mackley (A)   Phone: (952) 921-6866
General Dynamics   Fax:
8800 Queen Ave. S.   Email: timothy dot mackley at gd-ais dot
                                        com
Bloomington, MN 55431

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

Mr. Rob Elliott (P)   Phone: (281) 518-5037
Hewlett Packard Co.   Fax: (281) 518-7135
MC140801   Email: Elliott at hp dot com
PO Box 692000
Houston, TX 77269-2000

Dr. William Ham (A)   Phone: (978) 828-9102
Hewlett Packard Co.   Fax: (978) 470-0321

```
165 Dascomb Road                  Email: bill_ham at ix dot netcom dot com
Andover, MA 01810


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


Mr. Mike Guzman  (A)              Phone: (603) 669-4347
Hitachi Cable Manchester            Fax: (603) 669-9621
900 Holt Ave.                     Email: mguzman at hcm dot hitachi dot com
Manchester, NH 03109


Mr. Hitoshi (Todd) Horita  (A#)   Phone: (603) 669-4347
Hitachi Cable Manchester            Fax: (603) 669-9621
900 Holt Ave                      Email: horita dot hitoshi at hitachi-cable
                                         dot co dot jp
Manchester, NH 03109


Mr. Dan Colegrove  (P)            Phone: (702) 614-6119
Hitachi Global Storage Tech.        Fax: (702) 614-7955
2903 Carmelo Dr.                  Email: daniel dot colegrove at hgst dot com
Henderson, NV 89052


Ms. Sally Castillo  (A)           Phone: (507) 322-2316
Hitachi Global Storage Tech.        Fax: (507) 322-2413
3055 41st Street NW               Email: Sally dot Castillo at hgst dot com
Rochester, MN, 55901


Mr. Sam Sawyer  (A#)              Phone: 408-717-8690
Hitachi Global Storage Tech.        Fax:
5600 Cottle Road                  Email: sam dot sawyer at hitachigst dot com
San Jose, CA


Mr. Steven Wirtz  (AV)            Phone: (952) 941-5905
I-TECH Corp.                        Fax:
10300 Valley View Rd.             Email: steve_wirtz at i-tech dot com
Eden Prairie, MN 55344


Mr. George O. Penokie  (P)        Phone: (507) 253-5208
IBM / Tivoli Systems                Fax: (507) 253-2880
MS 2C6                            Email: gop at us dot ibm dot com
3605 Highway 52 N.
Rochester, MN 55901

Mr. Kevin Butt  (A)               Phone: (520) 799-5280
IBM Corp.                           Fax:
M/S 9032-2 65U                    Email: kdbutt at us dot ibm dot com
9000 S. Rita Rd.
Tucson, AZ 85744
```

Mr. Robert Sheffield (P)   Phone: (480) 554-8597
Intel Corp.   Fax: (480) 554-7347
5000 W. Chandler Blvd.   Email: robert dot l dot sheffield at intel
                                         dot com
Chandler, AZ 85226-3699

Mr. Bill Bissonette (A)   Phone: (978) 553-6140
Intel Corp.   Fax: (978) 553-3206
HD2-2-J12 25th Ave.   Email: bill dot bissonette at intel dot com
77 Reed Road
Hudson, MA 01749

Mr. Roger Jeppsen (AV)   Phone: 480-552-0584
Intel Corporation   Fax: 480-554-6617
5000 W. Chandler Blvd.   Email: roger dot c dot jeppsen at intel
                                         dot com
M/S CH6-332
Chandler, AZ 85226

Mr. Robert Payne (P)   Phone: (801) 332-4438
Iomega Corp.   Fax: (801) 778-4170
1821 Iomega Way   Email: PayneR at iomega dot com
Roy, UT 84067

Mr. Dennis Moore (AV)   Phone: (303) 465-1800
KnowledgeTek, Inc.   Fax: (303) 426-2600
8620 Wolff Ct., Suite 108   Email: dmoore at ix dot netcom dot com
Westminster, CO 80031

Mr. Pat LaVarre (P)   Phone: (510) 743 4533
Lexar Media, Inc.   Fax: (510) 580 0504
47300 Bayside Parkway   Email: p dot lavarre at ieee dot org
Fremont, CA 94538

Mr. Martin Furuhjelm (A)   Phone: (510) 580-2368
Lexar Media, Inc.   Fax: (510) 580-0478
47300 Bayside Parkway   Email: mfuruhjelm at lexar dot com
Fremont, CA 94538

Mr. John Lohmeyer (P)   Phone: (719) 533-7560
LSI Logic Corp.   Fax: (719) 533-7183
4420 ArrowsWest Dr.   Email: lohmeyer at t10 dot org
Colorado Springs, CO 80907

Mr. Avraham Shimor (P)   Phone: +972528444610
M-Systems   Fax: +97235466888
7 Atir Yeda Str   Email: avraham dot shimor at m-systems dot
                                         com
Kfar Saba 44425
Israel

Mr. Ariel Sobelman (A)   Phone: +972-52-4444104
M-Systems   Fax:

```
7 Atir Yeda St                    Email: ariel dot sobelman at m-systems dot
                                         com
Kfar Saba, 44425
Israel

Mr. David Geddes  (AV)            Phone: (408) 222-3307
Marvell Semiconductor, Inc.         Fax: (408) 988-0136
700 First Avenue                  Email: dgeddes at marvell dot com
E-203
Sunnyvale CA  94089

Mr. Mark Evans  (P)               Phone: (408) 894-5310
Maxtor Corp.                        Fax: (408) 324-7432
500 McCarthy Blvd.                Email: mark_evans at maxtor dot com
Milpitas, CA 95035


Mr. Martin Czekalski  (A)         Phone: (508) 770-3795
Maxtor Corp.                        Fax: (508) 770-2299
333 South Street                  Email: marty_czekalski at maxtor dot com
Shrewsbury, MA 01545


Mr. David Peterson  (P)           Phone: (763) 268-6139
McDATA                              Fax:
6000 Nathan Lane North            Email: david dot peterson at mcdata dot com
Minneapolis, MN 55442


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


Mr. Tim Brackett  (AV)            Phone: (707) 836-7883
Meritec                             Fax: (707) 836-7959
1382 West Jackson Street          Email: tbrackett at meritec dot com
Painesville, OH 44077


Mr. Edward Cady  (AV)             Phone: (503) 359-4556
Meritec                             Fax: (503) 359-9273
1382 West Jackson Street          Email: edcady at meritec dot com
Painesville, OH 44077


Ms. Emily Hill  (P)               Phone: (425) 705-9595
Microsoft Corp.                     Fax: (425) 936-7329
1 Microsoft Way                   Email: emhill at microsoft dot com
Redmond, WA 98052


Mr. Jeff Mastro  (A)              Phone: (425) 707-9254
Microsoft Corp.                     Fax: (425) 936-7329
1 Microsoft Way                   Email: jmastro at microsoft dot com
Redmond, WA 98052
```

Mr. Jay Neer (P)   Phone: (561) 447-2907 x3889
Molex Inc.   Fax: (561) 447-2908
399 W. Camino Gardens Blvd.   Email: jay dot neer at molex dot com
Suite 103
Boca Raton, FL 33432

Mr. Jerry Kachlic (A)   Phone: (630) 718-5991
Molex Inc.   Fax: (630) 512-8622
2216 Wellington Court   Email: jerry dot kachlic at molex dot com
Lisle, IL 60532

Mr. Mark Overby (P)   Phone: (425) 417-9412
Nvidia Corp.   Fax:
2701 San Thomas Expry   Email: moverby at nvidia dot com
Santa Clara, CA 95050

Mr. William Bridge (AV)   Phone: (650) 506-6350
Oracle   Fax: (650) 506-6350
500 Oracle Parkway   Email: Bill dot Bridge at Oracle dot com
Mailstop: 4op1220
Redwood Shores, CA 94065

Mr. James Williams (AV)   Phone: (650) 506-5120
Oracle   Fax: (650) 506-5120
500 Oracle Parkway   Email: James dot A dot Williams at oracle
                                         dot com

Mailstop: 4op1220
Redwood Shores, CA 94065

Dr. Terence J. Nelson (P)   Phone: (908) 464-1652
Panasonic Technologies, Inc   Fax: (908) 464-0149
167 Maple St.   Email: terry at tjnelson dot com
New Providence, NJ 07974

Mr. Rudolf Vitti (A)   Phone: (201) 348-7064
Panasonic Technologies, Inc   Fax: (201) 348-7807
One Panasonic Way   Email: vittir at panasonic dot com
Panazip 1E-6
Secaucus, NJ 07094

Mr. William P. McFerrin (P)   Phone: (325) 423-1560
Philips Electronics/CD Edge   Fax:
PO Box 381   Email: billmc at tstar dot net
Llano, TX 78643

Mr. Bill Galloway (P)   Phone: (281) 516-6002
Pivot3, Inc.   Fax: (281) 516-6099
6605 Cypresswood Dr.   Email: billg at pivot3 dot com
Suite 350
Spring, TX 77379

Ms. Rachelle Trent (P)   Phone: (604) 415-6892
PMC-Sierra   Fax: (604) 415-6208
8555 Baxter Place   Email: rachelle_trent at pmc-sierra dot com
Burnaby, BC Canada V5A 4V7

```
Mr. Bill Lye  (A)                  Phone: 604-415-6000
PMC-Sierra                          Fax: 604-415-6620
8555 Baxter Place                  Email: lye at pmc-sierra dot com
Burnaby, BC
Canada V5A 4V7


Mr. Tim Symons  (A#)               Phone: (604) 415 6000 x2264
PMC-Sierra                          Fax:
100-2700 Production Way            Email: Tim_Symons at pmc-sierra dot com
Burnaby,
BC, V5A 4X1.  Canada


Mr. Yuriy Greshishchev  (AV)       Phone: 613-271-4034
PMC-Sierra                          Fax: 613-271-7007
8555 Baxter Place                  Email: Yuriy_Greshishchev at pmc-sierra
                                          dot com

Burnaby, BC
Canada V5A 4V7

Mr. Skip Jones  (P)                Phone: (949) 389-6368
QLogic Corp.                        Fax: (949) 389-6114
26600 Laguna Hills Dr.             Email: skip dot jones at qlogic dot com
Aliso Viejo, CA 92656


Mr. Craig W. Carlson  (A)          Phone: (952) 932-4064
QLogic Corp.                        Fax:
6321 Bury Drive                    Email: craig dot carlson at qlogic dot com
Eden Prairie, MN 55346


Mr. Paul Entzel  (P)               Phone: (720) 406-5782
Quantum Corp.                       Fax: (720) 406-5762
4001 Discovery Dr.                 Email: paul dot entzel at quantum dot com
Boulder, CO 80303


Dr. Paul Suhler  (A)               Phone: (714) 641-2485
Quantum Corp.                       Fax: (714) 966-7328
1650 Sunflower Ave.                Email: paul dot suhler at quantum dot com
Costa Mesa, CA 97626


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


Mr. Gerald Houlder  (P)            Phone: (952) 402-2869
Seagate Technology                  Fax: (952) 402-3471
Mailstop SHK231                    Email: gerry dot houlder at seagate dot com
1280 Disc Drive
Shakopee, MN 55379-1863


Mr. Jim Coomes  (A)                Phone: (952) 402-2665
Seagate Technology                  Fax: (952) 402-3471
```

1280 Disc Drive   Email: jim dot coomes at seagate dot com
M.S. SHK231
Shakopee, MN 55379

Mr. William Martin (P)   Phone: (916) 772-3658
Sierra Logic, Inc.   Fax: (916) 771-5416
7213 Marblethorpe Dr   Email: bill_martin at sierralogic dot com
Roseville, CA 95747

Mr. Ryuichiro Tonari (AV)   Phone: (408) 367-5234
Sonic Solutions   Fax: (408) 367-3101
455 El Camino Real   Email: ryuichiro_tonari at sonic dot com
Santa Clara, CA 95050

Mr. Erich Oetting (P)   Phone: (303) 673-2178
Storage Technology Corp.   Fax:
2270 South 88th St.   Email: erich_oetting at stortek dot com
Louisville, CO 80028-4272

Mr. Dennis Appleyard (A)   Phone: (303) 673-6685
Storage Technology Corp.   Fax:
One StorageTek Dr.   Email: dennis_appleyard at stortek dot com
Louisville, CO 80028

Mr. Vit Novak (P)   Phone: (510) 936-3284
Sun Microsystems, Inc.   Fax: (510) 936-2527
MS NWK16-211   Email: vit dot novak at sun dot com
7777 Gateway Blvd.
Newark, CA 94560

Mr. Charles Binford (A)   Phone: (316) 315-0382 x222
Sun Microsystems, Inc.   Fax: (509) 756-4425
3450 N. Rock Rd., Suite 301   Email: Charles dot Binford at sun dot com
Wichita, KS 67226

Mr. Roger Cummings (P)   Phone: (407) 357-7257
Symantec   Fax:
Post Stop HRO3-3   Email: roger_cummings at symantec dot com
1001 Heathrow Park Lane
Heathrow, FL 32746

Mr. Greg Wheeless (A)   Phone: (407) 357-7133
Symantec   Fax: (407) 357-7590
Post Stop HRO3-2   Email: greg_wheeless at symantec dot com
1001 Heathrow Park Lane
Heathrow, FL 32746

Mr. Halvard Eriksen (AV)   Phone: +47-22189090
Tandberg Data ASA   Fax:
PO Box 134 Kjelsas   Email: halvard dot eriksen at tandberg dot
                                          com
N-0411
Oslo, Norway

Mr. Anders Emil Olsen (AV)   Phone: +47-22189090
Tandberg Data ASA   Fax:
PO Box 134 Kjelsas   Email: anders dot emil dot olsen at
                                             tandberg dot com
N-0411
Oslo, Norway

Mr. Paul D. Aloisi (P)   Phone: (603) 222-8687
Texas Instruments   Fax: (603) 222-8700
50 Phillipe Cote St.   Email: Paul_Aloisi at ti dot com
Manchester, NH 03101

Mr. Robert Kando (A)   Phone: (603) 222-8667
Texas Instruments   Fax:
50 Phillipe Cote St.   Email: Robert_Kando at ti dot com
Manchester, NH 03101

Mr. Yutaka Arakawa (P)   Phone: (949) 462-7588
Toshiba   Fax: (949) 581-1170
9740 Irvine Blvd.   Email: yutaka dot arakawa at tais dot
                                             toshiba dot com
Irvine, CA 92618

Mr. Tasuku Kasebayashi (A)   Phone: (949) 462-7551
Toshiba   Fax: (949) 458-7815
35 Hammond   Email: task dot kasebayashi at tais dot
                                             toshiba dot com
Irvine, CA 92618-1607

Ms. Ashlie Fan (P)   Phone: (508) 926-4148
TycoElectronics   Fax: (508) 752-4230
125 Goddard Memorial Drive   Email: afan at madisoncable dot com
Worcester, MA 01603

Mr. Dan Gorenc (A)   Phone: (717) 986-3518
TycoElectronics   Fax: (717) 592-2566
M/S 128-053   Email: daniel dot gorenc at
                                             tycoelectronics dot com
PO Box 3608
Harrisburg, PA 17105-3608

Mr. Ron Mathews (AV)   Phone: (949) 380-5077
UNISYS Corporation   Fax: (949) 380-5858
MV201   Email: ronald dot mathews at unisys dot com
25725 Jeronimo Road
Mission Viejo, CA 92691

Mr. Phil Shelton (AV)   Phone: (949) 380-5111
UNISYS Corporation   Fax: (949) 380-5858
MV201   Email: phil dot shelton at unisys dot com
25725 Jeronimo Road
Mission Viejo, CA 92691

Mr. Gregory Tabor (P)   Phone: (719) 867-6200

```
Vitesse Semiconductor            Fax: (719) 867-6203
4323 ArrowsWest Drive            Email: greg at vitesse dot com
Colorado Springs, CO 80907


Mr. David Allen  (A)             Phone: 719-867-6280
Vitesse Semiconductor             Fax:
4323 ArrowsWest Dr.              Email: dallen at vitesse dot com
Colorado Springs, CO 809


Mr. Curtis Stevens  (P)          Phone: 949-672-7933
Western Digital                   Fax:
20511 Lake Forest Dr.            Email: Curtis dot Stevens at wdc dot com
Lake Forest, Ca. 92630


Mr. John Masiewicz  (AV)         Phone: (949) 672-7686
Western Digital                   Fax:
20511 Lake Forest Dr.            Email: john dot masiewicz at wdc dot com
Lake Forest, CA 92630


Mr. Jeff Williams  (P)           Phone: (507) 529-7026
Xiotech Corp.                     Fax: (507) 529-7010
3535 40th Avenue, N.W.           Email: jeff_williams at xiotech dot com
Rochester, MN 55901


Mr. Lynn Waggie  (A)             Phone: (507) 529-7024
Xiotech Corp.                     Fax:
3535 40th Avenue, N.W.           Email: Lynn_Waggie at Xiotech dot com
Rochester, MN 55901
```