Accredited Standards Committee* X3, Information Technology

Doc. No.: X3T10/97-112r1

Date: January 20, 1997 Project: Ref. Doc.: Reply to: John Lohmeyer

1. Opening Remarks	
	Agenda
Subject:	Minutes of X3T10 Plenary Meeting #19 Dallas, TX January 9, 1997
From:	Ralph Weber, Secretary X3T10 John Lohmeyer, Chair X3T10
То:	Membership of X3T10

- 2. Approval of Agenda
- 3. Attendance and Membership
- 4. Approval of Minutes November Meeting Palm Springs, CA (X3T10/96-259r1)
- 5. Document Distribution
- 6. Call for Patents
- 7. Review of Old Action Items

8. Subgroup and/or Project Status Reports 8.1 Project Status Summary and X3/OMC Liaison [Lohmeyer] 8.2 X3T10.1 Task Group Report [Lamers] 8.3 SPI Amendment (SPIAmnd) {Project 0855-D} [Johansson/Lamers] 8.4 SCSI-3 Interlocked Protocol (SIP) Status {Project 856-D} [Penokie] 8.5 SCSI Common Access Method -3 (CAM-3) Status {Project 990-D} [Dallas] 8.6 SCSI-3 Serial Bus Protocol (SBP) Status (Project 992-D) [Roberts] 8.7 SCSI-3 Primary Commands (SPC) Status {Project 995-D} [Weber] 8.8 SCSI-3 Block Commands (SBC) Status {Project 996-D} [Milligan] 8.9 SCSI-3 Stream Commands (SSC) Status {Project 997-D} [Lappin] 8.10 SCSI-3 Graphics Commands (SGC) Status {Project 998-D} [Tewell] 8.11 SCSI-3 Medium Changer Commands (SMC) Status {Project 999-D} [Oetting] 8.12 SCSI-3 Controller Commands (SCC) Status {Project 1047-D} [Penokie] 8.13 Multimedia Command Set (MMC) Status (Project 1048-D) [Roberts] 8.14 SCSI Parallel Interface - 2 (SPI-2) {Project 1142-D} [Ham] 8.15 SCSI Enhanced Parallel Interface (EPI) Technical Report {Project 1143-D} [Ham] 8.16 SCSI Fibre Channel Protocol - 2 (FCP-2) {Project 1144-D} [Snively] 8.17 Boot Considerations Technical Report {Project 1154-DT} [Lamers] 8.18 Serial Bus Protocol - 2 (SBP-2) {Project 1155-D} [Johansson] 8.19 SCSI Architecture Model - 2 (SAM-2) {Project 1157-D} [Monia] 8.20 SCSI-3 Enclosure Commands (SES) {Project 1212-D} [Snively] 8.21 High Availability Profile (HAP) Technical Report {Project 1224-DT} [Hagerman] 8.22 SCSI Controller Commands - 2 (SCC-2) {Project 1225-D} [Penokie] 8.23 Multimedia Command Set - 2 (MMC-2) Status {Project 1228-D} [Roberts] 8.24 SCSI Primary Commands - 2 (SPC-2) Status {Project 1236-D} [Weber]

> *Operating under the procedures of The American National Standards Institute. X3 Secretariat, Information Technology Industry Council (ITI) 1250 Eye Street NW, Suite 200, Washington, DC 20005-3922 Email: x3sec@itic.nw.dc.us Telephone: 202-737-8888 FAX: 202-638-4922

8.25 SCSI-3 Transport over SBP-2 Status (STS) {Project xxxx-D} [Johansson]

- 9. Old Business
 - 9.1 Resolution of Letter Ballot Comments on Forwarding SES to First Public Review [Snively]
 - 9.2 Resolution of Letter Ballot Comments on Forwarding SPI Amendment #1 to First Public Review [Lamers]
- 10. New Business
 - 10.1 Results of Letter Ballot on forwarding SBC to 1PR [Lohmeyer]
 - 10.2 Actions on Working Group Recommendations
 - 10.2.1 Forwarding 97-101r1 to IEEE as recommended tutorial [Snively]
 - 10.2.2 SSC Partition Change Control (96-265r2) [Basham]
 - 10.2.3 READ ELEMENT STATUS and Reservation Conflicts (96-267r2) [Basham/Oetting]

11. ISO

- 11.1 ISO Report [Milligan]
- 12. Liaison Reports
 - 12.1 X3T11 Liaison Report [Cummings]
 12.2 X3T13 Liaison Report [Milligan]
 12.3 SFF Industry Group [Allan]
 12.4 IEEE 1394 [Johansson]
 12.5 IEEE P1285 Status
 12.6 IEEE P1596.8 Status
 12.7 SCSI Trade Association (STA) [Jones/Grantham]
- 13. Review of Action Items
- 14. Meeting Schedule 14.1 Authorization of Working Group Meetings
- 15. Adjournment

Results of Meeting

1. Opening Remarks

John Lohmeyer, the X3T10 Chair, called the meeting to order at 1:00 p.m., Thursday January 9, 1997. He thanked Jim McGrath, Mark Evans, and Mary Turco of Quantum for hosting the meeting.

John said that X3 Subgroup Membership forms and the X3T10 Mailing Subscription form were available from Larry Lamers or himself at the head table. He said that people should use the X3 forms to insure the X3 Secretariat has the latest membership information. These forms should be mailed directly to the X3 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 X3T10 were made available to those attending.

2. Approval of Agenda

The draft agenda was approved with the following additions:

10.2.1 Forwarding 97-101r1 to IEEE as recommended tutorial 10.2.2 SSC Partition Change Control (96-265r2) [Basham]

10.2.3 READ ELEMENT STATUS and Reservation Conflicts (96-267r2) [Basham/Oetting]

3. Attendance and Membership

The membership requirements were reviewed. X3 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 X3T10. The individual may vote at the second plenary meeting. Working group meetings do not count toward attendance requirements.

Organizations must also pay the X3 Service Fee (\$300) to maintain membership. The ANSI International Program Fee (also \$300) is billed at the same time.

Three organizations were in jeopardy due to failure to return the last two sets of letter ballots (see 96-043). AMP returned all four of the current letter ballots and is no longer in jeopardy. FSI failed to return letter ballot 96-045 so the FSI membership has been changed to observer status. The Philips KMG membership is still subject to termination depending on whether they return letter ballot 96-047 by January 21st.

The Chair said he had sent letters to 3 people from 2 organizations informing them that their membership was in jeopardy due to non-attendance (see 96-042r0) and that their membership would be terminated if they did not attend this meeting. Both organizations were represented at this meeting.

The following organizations applied for and received membership or a reinstated membership at this meeting:

NEC Amphenol Cable Design Technologies

The X3T10 membership during the meeting was 49 organizations up from 47 organizations last time. Enclosure (1) is the list of the people present at the meeting and enclosure (2) is the current X3T10 membership list.

4. Approval of Minutes - November Meeting Palm Springs, CA (X3T10/96-259r1)

The minutes were approved as written.

5. Document Distribution

Members who have any problems with their mailing subscription should deal directly with Katrina Gray (kgray@itic.nw.dc.us) (202) 626-5741.

Larry Lamers requested that all documents for the next mailing be in his hands in electronic format by 10:30 a.m. on Thursday January 16, 1997. Documents received after this time will go into a subsequent mailing.

Larry Lamers reminded the committee of the requirements for document submission to be included in the committee mailing. Since X3T10 meets its document archiving requirements by including the X3 Secretariat on the mailing list, documents included in the mailing must be suitable for archiving. This means that native-format electronic originals with proper identification must be submitted. Document X3T10/95-147 contains the list of requirements for submissions. Document X3T10/95-361r0 contains instructions for expeditious delivery of documents to Larry.

The electronic copies can be sent directly to Larry by email (at ljlamers@corp.adaptec.com), placed on the SCSI BBS (719-533-7950), or they can be transferred by ftp protocol to ftp.symbios.com and placed in the /pub/standards/io/incoming directory. In the latter two cases, please also send an email to Larry (at ljlamers@aol.com) informing him of the exact file name and location of the file.

As usual, minutes are also available on the SCSI BBS (719-533-7950) and will be distributed to the SCSI Reflector.

To be added to the SCSI Reflector, send an email to majordomo@symbios.com with the line 'subscribe scsi' in the message body. The X3 Secretariat maintains a World Wide Web page at http://www.x3.org/. Symbios Logic maintains a World Wide Web page on behalf of X3T10 at http://www.symbios.com/x3t10/.

The current document register is enclosure (3).

Peter Johansson requested that the CD contain copies of all committee documents, including copies of draft documents that have not been revised since the previous mailing and other historical material. John and Larry described the challenges of carrying the historical material forward from one mailing to the next. Larry noted that the CD mailing contents for last year were financed in part by Adaptec, which used the results of Larry's efforts internally. Adaptec has changed its internal methods and changed Larry's job description.

The committee discussed the requirements and available options. After a brief discussion, the committee agreed to discuss these issues off-line between now and the next plenary meeting.

6. Call for Patents

This is a regular agenda item to identify any potential patent issues with developing standards.

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.x3.org/help/ansi_sdo.html. Annex I contains the ANSI patent policy. Amy Marasco manages patent issues for ANSI and can be contacted at amarasco@ansi.org or 212-642-4954.

Charles Monia informed the committee of the issuance of patent 5,586,272 to Digital Equipment Corporation on 17 December 1996. Charles noted his personal opinion that the patent contains information required to implement SCAM and is titled "Asynchronous Data Transfer Among a Plurality of Computing Devices". Charles announced that Digital intends to comply with the ANSI patent policy. Charles Monia was given an action item to discover the full terms and conditions Digital intends to apply to the patent 5,586,272, provide a letter to X3T10 stating a belief on the part of Digital that the patent must be infringed in order to comply with portions of SPI and stating that Digital intends to comply with the ANSI patent policy.

Gene Milligan noted that the disclosure of this patent will affect the patent statement on the SPI Amendment.

7. Review of Old Action Items

- 180) Larry Lamers will prepare revision 2 of the SPI Amendment. Completed
- 181) Roger Cummings will send an email to B. Elliston regarding the proposal for transporting IP over SCSI. *Completed*
- 182) John Lohmeyer will forward 96-255 to X3 for processing as an amendment for project 1155-D. *Completed*
- 183) John Lohmeyer will forward 96-256 to X3 for processing toward the creation of a new project. *Completed*
- 184) Ron Roberts will prepare MMC revision 9. *Completed*
- 185) John Lohmeyer will forward MMC revision 9 to X3 for further processing toward first public review. *Completed*
- 186) John Lohmeyer will communicate to X3 that X3T10 recommends the withdrawal of X3.146:1986[R1992]. *Completed*
- 187) John Lohmeyer will inform X3 that X3T10 recommends withdrawal of 1154-DT, Boot Considerations Technical Report. *Completed*
- 188) Bob Snively will complete definition of the usage of IEEE company identifiers in FC-PH. Completed
- 189) Bob Snively will prepare a tutorial for FC usage of IEEE company identifiers. *Completed*
- 190) Bob Snively will prepare a tutorial for SCSI usage of IEEE company identifiers. *Completed*
- 191) Gene Milligan will continue ISO Fast Track processing of CAM. *Continuing*

- 192) Gene Milligan will send a favorable response to the proposed SCSI-2 corrigendum. Overtaken by events
- 193) John Lohmeyer will add reconsideration of SCSI-2 based on the corrigendum to the agenda for the next general SCSI working group meeting. *Completed*
- 194) John Lohmeyer will add a plenary agenda item for a IEEE P1596.8 Liaison Report. Completed
- 195) Gene Milligan editor will generate SBC revision 7. Completed
- 196) John Lohmeyer will conduct a letter ballot on SBC revision 7 for forwarding to first public review. *Completed*
- 197) Ralph Weber editor will generate SPC revision 11. Completed
- 198) John Lohmeyer will generate response letters to the people who submitted public review comments on SPC revision 11. *Completed*
- 199) John Lohmeyer will forward SPC revision 11 to X3 for further processing toward second public review assuming no other comments are received. *Completed*
- 200) Bob Snively will generate SES revision 8. Completed

8. Subgroup and/or Project Status Reports

8.1 Project Status Summary and X3/OMC Liaison [Lohmeyer]

John Lohmeyer said that the current X3T10 project status summary was included in the X3T10 Information Packages and will be included in the mailing as usual.

John noted that the X3 WWW pages are becoming more useful. They contain X3 and OMC agendas, press releases, and other information that committee members may find useful. The press releases are particularly useful for tracking the progress of work X3T10 forwards to X3.

John reported that his term as Chair will expired in June and described to the committee the process for applying to Chair X3T10 (see 97-007). John explained that the call for Vice-chair, familiar to those with long service on the committee, is not being made this time as a result of a change in the rules. Henceforth, the Vice-chair serves at the pleasure of the Chair. Roger Cummings noted the lack of a call for IR and stated that X3 is in the process of staggering IR and Chair renewals.

8.2 X3T10.1 Task Group Report [Lamers]

Larry Lamers, the X3T10.1 Chair, reported that no X3T10.1 meetings have been held since the last X3T10 plenary meeting.

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

John Lohmeyer reported that revision 2 of the SPI amendment was in the last committee mailing. John noted that there were no negative votes cast on the letter ballot to forward the amendment for first public review.

Larry Lamers reported that George Penokie identified a missing reference in clause 7 and revision 3 of the amendment has been created. A sentence says "see (blank)" and should contain a reference to the definition of the term 'reserved.'

Gene Milligan reminded the committee that the patent statement will need to be changed based on the patent recently disclosed by Digital. He expressed concern about changing the patent statement until a letter concerning licensing is received from Digital. After a brief discussion, the committee agreed that the patent statement should not be changed at this time.

8.4 SCSI-3 Interlocked Protocol (SIP) Status {Project 856-D} [Penokie]

John Lohmeyer reported that the X3 letter ballot for final publication of SIP closes on the 27th of January.

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

No report.

8.6 SCSI-3 Serial Bus Protocol (SBP) Status {Project 992-D} [Roberts]

John Lohmeyer reported that the X3 letter ballot on SBP closed on 13 December, but he could not find the results of the ballot on the X3 web site. John stated the belief that SBP should be ready to go to BSR.

8.7 SCSI-3 Primary Commands (SPC) Status {Project 995-D} [Weber]

John Lohmeyer reported that SPC had been approved at X3 should be entering second public review soon.

8.8 SCSI-3 Block Commands (SBC) Status {Project 996-D} [Milligan]

Gene Milligan reported the working group resolved the letter ballot comments on SBC. He noted that acting on the working group report is planned for later in this meeting.

8.9 SCSI-3 Stream Commands (SSC) Status {Project 997-D} [Lappin]

Ted Lappin reported on the actions of the SSC/SMC working group regarding SSC (minutes in 97-125). He noted that plenary action is required on one SSC proposal, later in this meeting. He reported that the target date for forwarding SSC is no later than July 1997.

8.10 SCSI-3 Graphics Commands (SGC) Status {Project 998-D} [Tewell]

John Lohmeyer reported that X3 has withdrawn this project as requested by X3T10. This agenda item will be removed from future agendas.

8.11 SCSI-3 Medium Changer Commands (SMC) Status {Project 999-D} [Oetting]

Erich Oetting reported on the actions of the SSC/SMC working group regarding SSC (minutes in 97-125). He noted that plenary action is required on one SMC proposal, later in this meeting. He reported that the target date for forwarding SMC is no later than September 1997.

Erich reported that the only known open issue in SMC concerns field sizes of some identifier values in the READ ELEMENT STATUS data.

8.12 SCSI-3 Controller Commands (SCC) Status {Project 1047-D} [Penokie]

George Penokie reported a belief that SCC has gone to BSR and Roger Cummings confirmed his belief. John Lohmeyer stated that there should be a press release soon.

8.13 Multimedia Command Set (MMC) Status {Project 1048-D} [Roberts]

Ron Roberts reported that the MMC first public review closes on 18 February 1997.

8.14 SCSI Parallel Interface - 2 (SPI-2) {Project 1142-D} [Ham]

John Lohmeyer reported on the SPI-2 working group meeting (minutes 97-110).

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

John Lohmeyer reported that EPI was discussed for several hours during the general working group meeting (minutes 97-111).

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

Bob Snively reported that no activity has occurred on FCP-2 yet. He anticipates starting work later this year. It was noted that working group action may result in definition of an additional mode page in FCP-2.

8.17 Boot Considerations Technical Report {Project 1154-DT} [Lamers]

John Lohmeyer reported that withdrawal of the project is under consideration at X3.

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

Peter Johansson reported the SBP-2 working group believes that the asynchronous sections of SBP-2 are ready for stabilization. Peter Johansson moved that sections 1 through 10 and Annexes A and B of SBP-2 revision 1g with the exception of clauses 4.5, 5.1.2.2, 5.1.3, 6.5, and 8.2.2 be accepted as stable by X3T10. Peter McLean seconded the motion. The motion passed 30:0:0:19=49.

8.19 SCSI Architecture Model - 2 (SAM-2) {Project 1157-D} [Monia]

Charles Monia reported that no progress has been made on SAM-2, due to work on the ISO version of SAM.

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

Bob Snively reported that revision 8 of SES has been published and reviewed. Several editorial comments have been received from Ralph Weber against revision 8. All outstanding issues have been resolved and the resolutions for the comments made by Ralph are considered non-substantive by the editor and person making the comments. (See agenda item 9.1.)

8.21 High Availability Profile (HAP) Technical Report {Project 1224-DT} [Hagerman]

Doug Hagerman reported on the working group discussion of HAP (minutes in 97-111). He noted that an editorial review meeting is scheduled for later this week. He indicated that a revised draft may not be available in time for the next committee mailing.

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

George Penokie reported that the SCC-2 working group has reached agreement on all the major proposals for SCC-2 (minutes 97-113). He stated that a revision of SCC-2 will be prepared for consideration at the next working group meeting. He indicated that a letter ballot vote should be anticipated in May.

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

The working group completed the review of the documents presented. The editor is to provide an initial revision of the MMC-2 draft standard for review at the March meeting. The draft is to be placed on the ftp site at Symbios Logic the last week of February.

The next meeting will be during the X3T10 week in March in San Diego.

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

Ralph reported that creation of the FrameMaker source files for SPC-2 has been started. The SPC revision 11 text and tables have been converted to Frame up to but not including the INQUIRY command. He stated the belief that the conversion will be completed by March, or May at the latest.

8.25 SCSI-3 Transport over SBP-2 Status (STS) {Project xxxx-D} [Johansson]

John Lohmeyer reported that approval of the STS project proposal is under consideration at X3. At the request of Gene Milligan, John described STS as the project that describes how to transport SCSI commands over the SBP-2 protocol. The new project is needed because SBP-2 has been made independent of the command protocol being transported and can transport AT, ATAPI, SCSI, and possibly other command protocols.

9. Old Business

9.1 Resolution of Letter Ballot Comments on Forwarding SES to First Public Review [Snively]

Bob Snively moved that SES revision 8 as revised (revision 8a) be accepted as resolving the letter ballot comments on SES, that the editor be instructed to prepare revision 8a, and that the chair be instructed to forward revision 8a to X3 for processing toward first public review. Charles Monia seconded the motion. The motion passed 30:0:0:19=49.

Bob Snively took an action item to prepare SES revision 8a. John Lohmeyer took an action item to forward SES revision 8a to X3 for processing toward first public review.

9.2 Resolution of Letter Ballot Comments on Forwarding SPI Amendment #1 to First Public Review [Lamers]

Charles Monia moved that X3T10 accept SPI Amendment revision 3 as addressing the letter ballot comments and instructing the chair to forward the SPI Amendment revision 3 to X3 for processing toward first public review. Ed Gardner seconded the motion. On a roll-call vote, the motion passed 31:0:0:18=49. The results of the roll-call vote were as follows:

Organization	S	Name	Yes	No	Abs	NP
Adaptec, Inc.	Р	Mr. Norm Harris	1			
Amdahl Corp.						1
AMP, Inc.	_					1
Amphenol Interconnect	Р	Mr. Michael Wingard	1			
Ancot Corp.						1
Apple Computer	A	Mr. Ron Roberts	1			
Berg Electronics	Р	Mr. Douglas Wagner	1			
Cable Design Technologies	Р	Mr. Richard Wagner	1			
Ciprico Inc.						1
Circuit Assembly Corp.						1
CMD Technology	_					1
Congruent Software, Inc.	Р	Mr. Peter Johansson	1			
Dallas Semiconductor	A	Mr. Siegfried Schmalz	1			
Digital Equipment Corp.	Р	Mr. Charles Monia	1			
Distributed Processing Tech.	Р	Mr. Roger Cummings	1			
Eastman Kodak Co.	Р	Mr. Robert Reisch	1			
ENDL	Р	Mr. I. Dal Allan	1			
Exabyte Corp.	Р	Mr. Edward Lappin	1			
Fujitsu Computer Products,Am	_					1
Hewlett Packard Co.	Р	Mr. J. R. Sims	1			
Hitachi Cable Manchester, Inc	Р	Mr. Zane Daggett	1			
Honda Connectors	_					1
IBM Corp.	Р	Mr. George Penokie	1			
Iomega Corp.	Р	Mr. Geoffrey Barton				1
KnowledgeTek, Inc.	Р	Mr. Dennis Moore	1			
Linfinity Micro	Р	Mr. Dean Wallace	1			
Madison Cable Corp.	_					1
Maxtor Corp.	Р	Mr. Pete McLean	1			
Molex Inc.	_					1
NEC Electronics, Inc.	Р	Mr. E. Jake Berzon	1			

Oak Technology, Inc.						1
Ophidian Designs	Р	Mr. Edward A. Gardner	1			
Panasonic Technologies, Inc						1
Philips Key Modules	Р	Mr. William P. McFerrin	1			
QLogic Corp.						1
Quantum Corp.	Α	Mr. Mark Evans	1			
Seagate Technology	Р	Mr. Gene Milligan	1			
Silicon Systems, Inc.		·				1
Sony Electronics, Inc.						1
Storage Technology Corp.	Р	Mr. Erich Oetting	1			
Sun Microsystems Computer Co	Р	Mr. Robert N. Snively	1			
Symbios Logic Inc.	Р	Mr. John Lohmeyer	1			
SyQuest Technology, Inc.		\$				1
Tandem Computers	А	Mr. Pete Tobias	1			
Toshiba America	Р	Mr. Tokuyuki Totani	1			
UNISYS Corporation	А	Mr. Arlan P. Stone	1			
Unitrode Corporation	P	Mr. Paul D. Aloisi	1			
Western Digital Corporation	P	Mr. Jeffrey L. Williams	1			
Woven Electronics	•		·			1
			31	0	0	18
			01	5	0	10

Larry Lamers stated that revision 3 already has been prepared. John Lohmeyer took an action item to forward the SPI Amendment revision 3 to X3 for processing toward first public review.

10. New Business

10.1 Results of Letter Ballot on forwarding SBC to 1PR [Lohmeyer]

John Lohmeyer reported that the letter ballot on forwarding SBC passed 43:1:0:3=47. Comments were received with five of the votes, including the one negative vote. The letter ballot itself can be found in 96-045. Details of the letter ballot results can be found in 97-004.

Gene Milligan reviewed the substantive comments resolutions actions taken by the working group (97-123).

Gene noted that resolution of the issue regarding definition of Pin 2 in the Flexible Disk Geometry mode page is open, pending a decision from Digital Equipment Corporation. Gene informed the committee that anyone wishing to state an opinion on this open question should contact himself or Charles Monia by 27 January 1997.

Based on the resolution of the SBC letter ballot comments, George Penokie asked that the IBM letter ballot vote be changed from no to yes.

Gene Milligan moved that X3T10 approve the responses to the letter ballot comments as documented in X3T10/97-123, instruct the SBC editor to incorporate the resolutions in a revision 8 of SBC, and instruct the chair to forward the SBC revision 8 to X3 for further processing including a first public review. Charles Monia seconded the motion.

Charles Monia took an action item to report the Digital instructions regarding the Flexible Disk Geometry mode page to the SBC editor. Gene Milligan took an action item to generate revision 8 of SBC based on the agreed resolution to the letter ballot comments. John Lohmeyer took an action item to forward SBC revision 8 to X3 for processing toward first public review.

10.2 Actions on Working Group Recommendations

10.2.1 Forwarding 97-101r1 to IEEE as recommended tutorial [Snively]

Based on the unanimous recommendation of the working group, Bob Snively moved that X3T10 offer document X3T10/97-101r1 to IEEE as the tutorial for usage of the IEEE company id in SCSI applications. Charles Monia seconded the motion. During discussion of the motion, Gene Milligan recommended that changes be considered for SPC-2 to demonstrate a preference for the identifier format described in 97-101r1. However, the motion was not changed. The motion passed 30:0:0:19=49.

Bob Snively took an action item to forward 97-101r1 to IEEE under cover of a letter authorized by the X3T10 chair, and to copy the chair and the committee document archive.

10.2.2 SSC Partition Change Control (96-265r2) [Basham]

Robert Basham presented a proposal whose effect would be optionally moving changes in tape partitioning from the MODE SELECT command to the FORMAT MEDIUM command (96-265r2). Based on the unanimous recommendation of the SSC/SMC working group, Robert Basham moved that X3T10 approve 96-265r2 for inclusion in SSC. Ted Lappin seconded the motion. The motion passed unanimously.

10.2.3 READ ELEMENT STATUS and Reservation Conflicts (96-267r2) [Basham/Oetting]

Robert Basham presented a proposal whose effect would be allowing the processing of those READ ELEMENT STATUS commands needed to determine system configuration regardless of outstanding reservations. Based on the unanimous recommendation of the SSC/SMC working group, Robert Basham moved that X3T10 approve 96-267r2 for inclusion in SSC. Bob Snively seconded the motion. Bob then raised objections to the non-specific nature of the proposal. Robert and Erich Oetting agreed to return the proposal to the working group for consideration oriented toward resolving Bob's concerns. The motion was withdrawn.

11. ISO

11.1 ISO Report [Milligan]

Gene Milligan, the X3T10 International Representative, provided the following electronic report:

As a reminder the TAG comments, if any, should close on large number of CD ballots on X3T11 projects 3/7/97. For a list of these refer to the November minutes or scan the attached document list.

JTC 1 has issued guidelines for the creation and maintenance of standards web servers and web pages.

As far as the IR has been able to determine, IEC TC 100 has not responded and perhaps has not considered the liaison statement sent to them concerning the relationship with SC 25/WG 4. However updated drafts of the TC 100 new Strategic Policy Statement and an overview of TC100 standards and projects was received.

For those interested in customer premises cabling, a call for volunteers for the Chair and Secretary of the SC25/WG3 TAG has been issued with a closing date of 2/1/97.

Dr. Kovacs has issued an official announcement of Juergen Maergner, of IBM Germany, as the WG 4 Secretariat.

Although the delegations had prepared extensively for proposed JTC 1 reorganization, the Chair apparently ducked the topic during the plenary at the December Paris meeting.

With the assumption that the reorganization will go ahead and that it will result in a grouping of the present SC 6, SC 25, and SC 26 scopes, IEEE 802 is campaigning to take over the TAG and TAG secretariat responsibility for this new group from IEC and X3. I have been in contact with Jim Carlo and we have agreed (not on the

takeover but if it should occur) that the MOU grouping of T10, T11, and T12 would continue as the TAG for the projects under the scope now held by SC 25/WG 4.

An updated second half of 1996 ISO document register is attached to this report.

DOC_NO 0	—	DESCRIPTION
	96/07/05	Approved Resolutions of 6th SC25 Plenary
	96/07/06	Transmittal of CD IPI-3 Disk, IPI-4 Tape, HIPPI
		-FC, HIPPI-Serial, HIPPI-ATM, HIPPI-SC
X3T11/IR	96/07/06	Transmittal of CD FC-AL, FC-SB, FC-PH-2, FC-PH-3,
		FC-GS, & FC-FP
T159/4N372		Guidelines for Implementation of Vienna Agree
1N4172	96/07/29	Response to N3996 Relationship with Regional
05N011	00/00/00	Workshops on Open Systems
	96/08/06	Draft Minutes SC 25 London Meeting LB to fast track X3.232:1996 SCSI CAM
I R96020 1N4190	96/08/15 96/08/23	
	96/08/23	Creation & Maintenance of Web Servers & Pages
	96/08/27	Editor's report and DIS 9314-6 FDDI SMT Text Editor's report and DIS 9314-7 FDDI PHY-2 Txt
	96/08/27	Editor's report and DIS 9314-7 FDDI FIL-2 Txt Editor's report and DIS 9314-8 FDDI MAC-2 Txt
	96/09/02	Yes vote with comment CD 9314-20 FDDI PMD-ATS
IR96017	96/09/02	Yes vote CD 9314-21 FDDI PHY-ATS
IR96018	96/09/02	Yes vote CD 9314-26 FDDI MAC-ATS
IR96019	96/09/02	Liaison statement to IEC TC 100
I R96021	96/09/19	Editors report and DIS9314-25 FDDI SMT-ATS Te
25N324	96/09/23	CD 9318-4 IPI 3 Tape Closes 3/31/97 (3/7 X3)
	96/09/23	CD 11518-8 HIPPI-ATM closes 3/31/97 (3/7 X3)
25N326	96/09/23	CD 14165-121 FC-AL closes 3/31/97 (3/7 X3)
25N327	96/09/23	CD 14165-121 FC-SB closes 3/31/97 (3/7 X3)
25N328	96/09/23	CD 14165-112 FC PH-2 closes 3/31/97 (3/7 X3)
25N329	96/09/23	CD 14165-113 FC-PH-3 closes 3/31/97 (3/7 X3)
25N330	96/09/23	CD 14165-211 Mapping to HIPPI-FP (FC-FP)
		Closes 3/31/97 (3/7 X3)
25N331	96/09/23	CD 11518-9 HIPPI-SE closes 3/31/97 (3/7 X3)
	96/09/23	CD 14165-411 FC-GS closes 3/31/97 (3/7 X3)
von Pattay	96/10/10	Request for distribution of DIS 9314-25
		FDDI SMT-ATS for 4 month ballot
von Pattay	96/10/11	What happened to von Pattay's comments on
		CD 9314-13 FDDI CT-PICS
	96/10/15	Resolution of Comments CD 9314-25
	96/10/18	
I R96023	96/10/18	Acceptance of liaison on IEEE P1596.8
	00/10/10	Parallel Connection to SCI & 1394.2
	96/10/18	JTC 1 TAG 1997 Budget and Fees
	96/11	Draft new Strategic Policy Statement
TC100/33	96/11	Overview of standards and projects Call for volunteers - SC25/WG3 TAG 2/1/97
CPC/96-057 CPC/96-058		Call for volunteers - SC25/WG3 TAG 2/1/97 Call for volunteers Secretary SC25/WG3 TAG
CPC/96-058 CPC/96-060		SC25 TAG Chair's response to SC25 POW
Kovacs	96/12/05 96/12/19	Announcement of Juergen Maergner as WG 4
NUVAUS	50/16/13	Secretariat

12. Liaison Reports

12.1 X3T11 Liaison Report [Cummings]

Roger Cummings, X3T11 Chair, delivered an oral report and provided the following electronic report:

X3T11 met on December 4, 1996 with 110 people in attendance. National Semiconductor lost membership. Corning, Exabyte, Siecor & Tensolite were added as a new member organizations. The membership of X3T11 is now 74 organizations.

It was reported that an X3 Letter Ballot on HIPPI-PH reaffirmation (X3.183-1991) passed on 9/20/96, that a ballot on the 10-bit Interface TR closes on 12/16/96, and that ballots on the final approvals of dpANS for the Revised HIPPI- SC, SBCON, FC-PH-2, HIPPI-ATM and HIPPI Serial projects will close on January 14, 1997.

The following project proposals were reported as having been approved:

NAME
755-M FC-PH:DAM2
1230-DT Methodology of Jitter Specification
1231-D HIPPI-6400-SC
1232-D FC-SL
1235-DT FC-FLA

It was reported that a first Public Review for X3.303-199x, FC- PH-3 (Project 1119-D) will take place from 12/20/96 to 2/18/97.

By a roll-call vote of F60-O00-DNV14, X3T11 voted to recommend that

ANSI X3.129-1986[R1992] IPI Physical (IPI-1PH) ANSI X3.201-1992, IPI Enhanced Physical (EIPI-1PH) ANSI/ISO 9318-2:1992 IPI Device Specific Disk (IPI-2D)

NOT be reaffirmed. X3T11 also voted F50-O00-DNV24 to forward a Project Proposal for a revision to ANSI X3.210-1992, HIPPI Framing Protocol (HIPPI-FP) for further processing. All votes met the two-thirds rule.

X3T11 also formally accepted an offer by the Fibre Channel Loop Community (FCLC) trade association to fund the creation of a merged document containing specifications from the current FC-PH, FC-PH Amendments, FC-PH-2 and FC-PH-3. It was also approved in principle a restructuring of the FC-PH definitions into separate documents along functional lines (FC levels), and imposed a self-moratorium on project proposals on FC-PH topics while this restructuring is being formalized. A temporary document was established to hold accepted FC proposals during the period of the moratorium, including proposal for future loop functionality which will proceed toward technical stabilization by 10/97.

A postponed motion on a proposal from the Fibre Channel Loop Community (FCLC), requesting the assignment of a code point to allow them to establish a service to provide unique FC identifiers, was approved, as were two similar motions to assign code points for proposed IEEE Registered and IEEE Registered Extended formats.

It was agreed that time would be set aside at the February Plenary for presentations on low cost connectors by three connector manufacturers, providing that presentation materials had been mailed to X3T11 Principals, Alternates and Observers before 1/14/97.

X3T11 voted F45-O00-DNV29 to request that Project 956-D (FC- IG) be withdrawn.

X3T10/97-112r1

The next meeting of X3T11 is being hosted by hosted by Bob Snively of Sun Microsystems during the week of February 3, 1997 at the Red Lion Hotel, 2050 Gateway Place, San Jose, CA 95110. The telephone number is (408)453-4000. The Plenary meeting is on Wednesday, February 5. Interim study and ad hoc meetings have been approved for:

HIPPI	1/8-9	Phoenix, AZ
FC-SL and Loop Futures	1/6-7	Dallas, TX
Jitter Study	1/9-10	Colorado Springs, CO
FC-AV	1/7	Portland, OR

as well as the usual meetings during the X3T11 Plenary week.

12.2 X3T13 Liaison Report [Milligan]

Gene Milligan provided the following electronic report:

X3T13 had an ad hoc meeting on 13-15 November at Western Digital in Irvine. The group reviewed: D96104R9 ATA Overlap Proposal; D97104R0 Proposed changes to Ultra DMA; D97103R0 Physical interface test procedures; D96153R2 Ultra DMA Rev 2; D96157R0 Reset changes from the working group; X3T13/1226DT EDD Rev 2; and X3T13/1153D Rev 7 ATA/ATAPI-4.

A letter has been sent to Oak regarding questions relating to any potential patents and ATA/ATAPI-4. An answer has not been received.

A page by page review of Enhanced BIOS Disk Drive Technical Report - Project 1226DT was conducted with several editorial changes noted. Security Erase [Colegrove] (D96156)

Tom Hanan presented a document on physical interface testing used by WD. He stated that a test board has been developed to ensure consistency of results and these will be made available to the industry.

Complications of accommodating IDENTIFY DRIVE DMA with the Ultra DMA mode in ATA/ATAPI-4 were discussed. By unanimous consent it was decided to obsolete IDENTIFY DRIVE DMA.

The CHS translation should report the same maximum address as set in LBA. This means that there would appear to be an 'orphaned' track. Pete McLean volunteered to propose a resolution to this issue.

Totani-san requested that a statement that the host shall not infer device status based upon the DASP signal be added. There was unanimous consent to add a statement that the DASP signal may be unsychronized with command execution.

It was agreed that there is no distinction between ATA and ATAPI regarding the device 0/1 protocol.

The technical content of MSN 1.03 was accepted as the basis for a proposal suitable for inclusion in ATA-4 including a recommendation on related items to obsolete.

Devon Worrell agreed to document the ATAPI LUN requirements based upon current ATAPI specifications.

Alan Longo described several issues he had with the wording of the reset requirements. His discussion pointed out a potential need for a minimum off time for SRST and pointed out problems with on-off-on reset cycles. It was agreed that currently the minimum low 'off' time is one memory write cycle.

The resultant new Open Issues were:

- 1) Enhanced FDPT signature of A0h.
- 2) Driver types and required pull-ups for Ultra DMA.
- 3) Minimum cleared time for SRST.

Pete McLean and Devon Worrell are working out an identify Word 73 ambiguity between ATA and ATAPI devices.

The Disk Boys are being asked to submit a project proposal at the January ad hoc for a X3T13 Tailgate project.

The next plenary meeting of X3T13 will be January 24, 1997 at the Seagate facility, in San Jose, CA hosted by Seagate. Although the meeting announcement shows a starting time of 0900, in view of the heavy work load the ad hoc unanimously agreed to change the starting time to 1300 to allow another half day for the ad hoc work.

The next working group meeting will be January 22-24, 1997 at the Seagate facility in San Jose hosted by Seagate.

The long term meeting schedule is:

<u>Date</u>	Location	<u>Host</u>	Contact
February 18-21, 1997	Fort Collins, CO	Symbios Logic	Mike Winchell
March 19-21, 1997	San Jose, CA	Seagate	Marc Noblitt

12.3 SFF Industry Group [Allan]

Dal Allan provided the following report:

The SFF Committee completed its two major working tasks of completing SCA-2 and VHDCI for balloting. Both passed with minor comments and unless the changes requested have more technical content than anticipated, the next ballot will be for Publication.

The initial contact on pursuing the 2-56 jackscrew standardization at IEC has still failed to respond, which is not untypical of IEC.

SFF-8090 for DVD (Digital Video Disc) was approved as a project, and is holding its SSWGs in Japan and the U.S.

There are concerns that the 2mm connector as used on 1.8", 2 1/2", and other drives is still not specified well enough to ensure interoperability without high insertion forces. Several changes that were recommended in the meeting will be incorporated in the next revision.

The members voted in favor of sending a letter to the European Patent Office identifying known prior art which existed at companies at the time work began on SFF-8020 and earlier work on EATA for CAM.

A change in meeting schedule was requested. The SSWGs will begin at 1300 on Wednesday and the plenary at 1700 on Wednesday. If it suits the host for the next X3T10 meeting week, SFF would like this to take effect in March.

12.4 IEEE 1394 [Johansson]

Peter Johansson reported that a draft for P1394a will be available at the committee meeting next week. He provided the following 1394 taxonomy:

IEEE 1394-1995 (also IEEE Std 1394-1995): The designation for the IEEE 1394 standard

P1394a: Project for performance enhancements and clarifications

P1394b: Project for plug-compatible high-speed extensions

P1394.1: Project for bridges

P1394.2: Project for scalable gigabit alternatives (not plug compatible; preserves transaction layers)

12.5 IEEE P1285 Status

No report was available.

Gene Milligan noted that no response has been received to his letter ballot comments.

12.6 IEEE P1596.8 Status

Gene Milligan noted that X3T10 is official liaison to P1596.8. He stated a belief that P1596.8 concerns the chip interface to things that drive "the" serial bus. He noted that the purpose of liaison would be to guarantee that X3T10 is informed when the standard is balloted.

12.7 SCSI Trade Association (STA) [Jones/Grantham]

Louis Grantham reported that STA met this morning. He listed the trade shows that STA plans to attend on behalf of SCSI.

13. Review of Action Items

- 201) Charles Monia will discover the full terms and conditions Digital intends to apply to the patent 5,586,272, provide a letter to X3T10 stating a belief on the part of Digital that the patent must be infringed in order to comply with portions of SPI and stating that Digital intends to comply with the ANSI patent policy.
- 202) John Lohmeyer will forward the SPI Amendment revision 3 to X3 for processing toward first public review.
- 203) Charles Monia will report the Digital instructions regarding the Flexible Disk Geometry mode page to the SBC editor by 31 January 1997.
- 204) Gene Milligan will generate revision 8 of SBC based on the agreed resolution to the letter ballot comments.
- 205) John Lohmeyer will forward SBC revision 8 to X3 for processing toward first public review.
- 206) Bob Snively will prepare SES revision 8a.
- 207) John Lohmeyer will forward SES revision 8a to X3 for processing toward first public review.
- 208) Bob Snively will forward 97-101r1 to IEEE under cover of a letter authorized by the X3T10 chair, and copy the chair and the committee document archive.

14. Meeting Schedule

The next plenary meeting of X3T10 will be March 13, 1997 in San Diego, CA at the Hyatt Islandia Hotel (619-224-1234), hosted by QLogic Corp. The meeting will begin at 1:00 p.m. on Thursday.

The meeting list for the next plenary week is:

March '97 Meeting Map (1/9/97 Version)

Monday 3/10 8	9 10 11 12	1 2 3	4 5	6	78	9
	+=====================================			=====	+====	(20)
	+=====================================	-	=====+== 		====+	(25)
	+=====================================		=====+- ·		+	(40)
	+				+	
Tuesday 3/11	9 10 11 12 +========	1 2 3	4 5	-	78	
	SCSI-3 WG (EP +====================================	-		•	 +====	(40)
	MMC WG +====================================	+==========	+	 +==		(20)
	SCC/RAB WG +====================================	RAB	ĺ			(25)
	Fibre Channel		+			(40)
	+	+				
Wednesday 3/12	9 10 11 12 +=============		4 5 =====+	-	7 8 +	
	SCSI-3 WG +====================================			FATech		(40)
	MMC Working Gr +====================================	oup				(20)
		SFF SSWGs	s !	SFF		(40)
	+ RAB	+	·			(25)
	+					+
Thursday 3/13 8		1 2 3 +=========	4 5		7 8	
	+======================================	X3T10 Pl e	-	-		(70)
	SSC/SMC WG				((15)
+	=+====================================					(30)
+			+			
Friday 3/14 8	9 10 11 12	1 2 3	4 5	====+		
	Document Review					(10)
+======================================						
Meetings marked with == are X3T10-authorized meetings. Meetings marked with are authorized by other groups and may change without notice.						
Meeting Map Abbreviation Key:						
	Amendment Common Access Met	hod				
	Next generation C Industry group st			nent v	ia IEE	E 1394

Diskboys:Industry group studying disk attachment via IEEE 1394EPI:SCSI Enhanced Parallel Interface (Technical Report)

Fast-20:Synchronous Data Transfer at 20 Megatransfers/secondFC-AL:Fibre Channel - Arbitrated Loop (an X3T11 project)FCLC:Fibre Channel Loop Community (not an X3 activity)I/F:Interface	
FCLC: Fibre Channel Loop Community (not an X3 activity)	
HAP: High Availability Profile (Technical Report)	
High Avail.: High Availability	
LB: Letter Ballot	
MMC: SCSI-3 Multimedia Commands (CD-ROM)	
PH: Physical (Connectors, Cables, Transceivers, etc.)	
Plenary: Full Committee Meeting	
RAB: RAID Advisory Board (not an X3 activity)	
RAID: Redundant Array of Independent Devices	
SBC: SCSI-3 Block Commands	
SBP: SCSI-3 Serial Bus Protocol	
SBP-2: Serial Bus Protocol for IEEE 1394 (2nd generation)	
SCC: SCSI-3 Controller Commands (RAID)	
SCSI: Small Computer System Interface	
SES: SCSI Enclosure Services	
SPC: SCSI-3 Primary Commands	
STA: SCSI Trade Association (not an X3 activity)	
STATech: STA Technical Meeting (X3T10 members invited)	
STS: SCSI Transport via SBP-2	
SFF: SFF Industry Group (not an X3 activity)	
SG: Study Group	
SMC: SCSI-3 Medium Changer Commands	
SPI-2: Second Generation SCSI-3 Parallel Interface	
SSA: Serial Storage Interface	
SSC: SCSI-3 Stream Commands (includes Tape)	
SSWGs: Specific-Subject Working Groups	
VHDCI Very High Density Cabled Interconnect	
WG: Working Group (same as Ad Hoc Group)	
X3T10: Lower Level Interfaces Technical Committee	
X3T10. 1: SSA Task Group of X3T10	

Several other X3T10 events are also planned:

Event	Date(s)	Location/contact
SPI-2 Working Group SPI-2 Working Group MMC Working Group		San Jose, CA (with X3T11) Palm Springs, CA (with X3T11) Irvine, CA / meeting cancelled
SBP-2 Working Group SBP-2 Working Group		San Jose, CA / Seagate Fort Collins, CO / Symbios Logic

For more information about X3T10 activities, please contact the following people:

Activity	Contact	Tel ephone/Emai l
CAM- 3	Bill Dallas	(603) 881-2508
EPI & SPI-2	Bill Ham	dallas@wasted.enet.dec.com (508) 841-2629 ham@subsys.enet.dec.com
FCP- 2	Robert Snively	(415) 336-5332 Bob. Sni vel y@eng. sun. com
GPP	Gary Stephens	(602) 321-1725 6363897@mci mail.com
SAM & SAM-2	Charles Monia	(508) 841-6757 monia@starch. enet. dec. com

SBC	Gene Milligan	(405) 324-3070
		gene_milligan@notes.seagate.com
SBP and MMC	Ron Roberts	(916) 677-5714
		rkroberts@aol.com
SBP-2	Pete McLean	(303) 678-2149
		pete_mclean@maxtor.com
or	Peter Johansson	(510) 531-5472
		pj ohansson@aol . com
SIP, SCC	George Penokie	(507) 253-5208
		gop@rchvmp3. vnet. i bm. com
SMC	Erich Oetting	(303) 673-2178
		Eri ch_0etti ng@Stortek. com
SPC	Ralph Weber	(972) 733-3594
		roweber@acm.org
SSA- PH1, - PH2, - TL1, - TL2	Larry Lamers	(408) 957-7817
		ljlamers@aol.com
SSA- S2P & - S3P	John Scheible	(512) 823-8208
		Schei bl e@vnet. i bm. com
SSC	Edward Lappin	(303) 447-7718
		tedl@exabyte. com
Other Activities	John Lohmeyer	(719) 533-7560
		john.lohmeyer@symbios.com

The long-term X3T10 meeting week schedule is:

Date	Location	Host/Comments
Jan 6-10, 1997	Dallas, TX	Quantum
Mar 10-14, 1997	San Diego, CA	QLogi c
May 5-9, 1997	Natick, MA (near Boston)	Digital
Jul 14-18, 1997	Colorado Springs, CO	Symbios Logic
Sep 8-12, 1997	Nashua, NH	Unitrode
Nov 3-7, 1997	Palm Springs, CA	Adaptec
1998 dates are fi	rm; locations and hosts are	accepted, but tentative
Jan 5-9, 1998	Dallas, TX	Quantum/location might change
Mar 9-13, 1998	San Diego, CA	QLogi c
May 4-8, 1998	Colorado Springs, CO	Symbios Logic
Jul 13-17, 1998	Portland, ME	Digital
Sep 14-18, 1998	St. Petersburg Beach, FL	AMP
Nov 2-6, 1998	Palm Springs, CA	Adaptec/ dates changed

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 X3T10 (that is, one vote per organization) and the results of a working group are not binding on the parent committee. This later requirement is why we have traditionally only used non-binding straw polls in working group meetings. Any issue where the voting rules would make a difference should be deferred to the plenary group. Nonetheless, task groups and ad hoc groups should strive to achieve consensus prior to bringing issues to X3T10.

Peter Johansson moved that X3T10 authorize the X3T10-related meetings and events in the list above. Erich Oetting seconded the motion. The motion passed 22:1:0:26=49 Gene Milligan described his opposition as being based on the overlap between the SPI-2 meeting and the Fibre Channel meeting.

15. Adjournment

The meeting was adjourned at 4:51 p.m. on Thursday January 9, 1997.

Meeting Attendees -- Enclosure (1)

	Name	S	Organi zati on	Electronic Mail Address
Mir	Norm Harris	P	Adaptec, Inc.	nharri s@eng. adaptec. com
	Lawrence J. Lamers		Adaptec, Inc.	ljlamers@aol.com
	Michael Wingard	P	Amphenol Interconnect	mi kwi ngard@aol.com
	Ron Roberts	A	Apple Computer	rkroberts@aol.com
	Douglas Wagner	P	Berg El ectroni cs	j pxw76a@prodi gy. com
	Ri chard Wagner	P	Cable Design Technologies	
	Chi Wang	0	Cirrus Logic Inc.	cwang@corp. ci rrus. com
	Peter Johansson	P	Congruent Software, Inc.	pj ohansson@aol . com
	Michael Smith	P	Dallas Semi conductor	msmi th@dal semi . com
Mar.	~	Ā	Dallas Semi conductor	schmal z@dal semi . com
Mar.	Rick Hardy	0	Denron. Inc.	rhardy@denron. com
Mar.	ũ,	P	Digital Equipment Corp.	moni a@shr. dec. com
Mr.	Douglas Hagerman		Digital Equipment Corp.	hagerman@starch.enet.dec. com
Mr.	Roger Cummings	Р	Distributed Processing	cummi ngs_roger@dpt.com
	0 0		Tech.	
Mar.	Robert Reisch	Р	Eastman Kodak Co.	rei sch@kodak. com
Mar.	I. Dal Allan	Р	ENDL	dal_allan@mcimail.com
Mar.	Edward Lappin	Р	Exabyte Corp.	tedl@exabyte.com
Mar.		0	Harting Elektronik	
Mar.	J. R. Sims	Р	Hewlett Packard Co.	robsims@depeche.lvld.hp. com
	Anthony Yang	0	Hitachi America Ltd.	yang_a@hal sp. hi tachi . com
Mr.	Zane Daggett	Р	Hitachi Cable	zdaggett@hcm. hitachi. com
			Manchester, Inc	
Mar.	Kirk Rogers	V	Hitachi Cable	krogers@hcm. hi tachi . com
		_	Manchester, Inc	
Mr.	Nedi Nadershahi	0	Hitachi Micro Systems,	nnadersh@hmsi.com
		-	Inc.	
	George Penoki e	P	1	gop@rchvmp3. vnet. i bm. com
	Dan Colegrove		IBM Corp.	colegrove@vnet.ibm.com
	Robert Basham	0 D	IBM Corp.	robbyb@vnet.ibm.com
	Dennis Moore	P	Knowl edgeTek, Inc.	dmoore@netcom.com
	Dean Wallace	P	Linfinity Micro	75671. 3443@compuserve. com
	Pete McLean	P	Maxtor Corp.	pete_mclean@maxtor.com
Mr.	Jay Neer	A	Molex Inc.	j neer@mol ex. com
Mr. Mr		P	NEC Electronics, Inc.	j berzon@asi c. mtv. nec. com
	Edward A. Gardner	P	Ophidian Designs	gardner@acm.org
	William P. errin	Р	Philips Key Modules	BMcFerrin@aol.com
	Skip Jones	Р	QLogic Corp.	sk_j ones@ql c. com
Mar.	Mark Evans	A	Quantum Corp.	mevans@qntm.com
Mar.		P	Seagate Technology	Gene_Milligan@notes.
1411 .	dene milligan	I	Seagare Technology	seagate. com
Mar.	Erich Oetting	Р	Storage Technology Corp.	erich_oetting@stortek.com
Mar.	Robert N. Snively	Р	Sun Microsystems Computer Co	
Mar.	John Lohmeyer	Р	Symbios Logic Inc.	john.lohmeyer@symbios.com
Mar.	Ralph 0. Weber	Ā	Symbios Logic Inc.	roweber@acm. org
Mar.	Pete Tobias	Α	Tandem Computers	tobi as_pete@tandem. com
Mar.	Tokuyuki Totani	Р	Toshiba America	totani@ix.netcom.com
Mar.	Arlan P. Stone	Α	UNISYS Corporation	arl an. stone@mv. uni sys. com
	Paul D. Aloisi	Р	Unitrode Corporation	al oi si @uni trode. com
Mar.	Jeffrey L.	Р	Western Digital	jwilliam@wdroc.wdc.com
	-		-	

Williams		Corporati on
Mr. Doug Piper	Р	Woven Electronics

doug. piper@internetmci.com

46 People Present

Status	Key:	Р	-	Pri nci pal
	Ū	A, A#	-	Alternate
		0	-	Observer
		L	-	Li ai son
		V	-	Visitor

Jan 15, 1997 - X3T10 Attendance Database - Enclosure (2)

Mr. Norm Harris (P) Adaptec, Inc. 691 S. Milpitas Blvd. Milpitas, CA 95035 Ph: (408) 957-2230 FX: (408) 957-7145 Em: nharris@eng.adaptec.com Mr. Lawrence J. Lamers (A) Adaptec, Inc.

691 S. Milpitas Blvd. Milpitas, CA 95035 Ph: (408) 957-7817 FX: (408) 957-7193 Em: ljlamers@aol.com

Mr. Ajay Malik (0) Adaptec, Inc. 691 S. Milpitas Blvd. Milpitas, CA 95035 Ph: (408) 945-8600 x2178 FX: Em: ajay_malik@corp.adaptec.com

Mr. Ron Apt (0) Advanced Micro Devices One AMD Place MS 59 P. 0. Box 3453 Sunnyvale, CA 94088-3453 Ph: (408) 749-2578 FX: (408) 774-8449 Em: Ronald. Apt@amd.com

Mr. Edward Fong (P) Amdahl Corp. 1250 E. Arques Ave. MS 193 Sunnyvale, CA 94088-3470 Ph: (408) 944-3780 FX: (408) 943-6620 Em: esf10@amail.amdahl.com

Mr. Jerrie L. Allen (0) Amdahl Corp. 1250 E Arques Ave. MS 312 POB 3470 Sunnyvale, CA 94088-3470 Ph: (408) 944-3712 FX: (408) 943-6620 Em: Jerrie.Allen@cccmvs.amdahl.com

Mr. Charles Brill (P) AMP, Inc. Mr. Tak Asami (A#) Adaptec, Inc. 9701 Jeronimo Rd. Irvine, CA 92718 Ph: (714) 455-8100 x2011 FX: (714) 455-8102 Em: asami@itc.adaptec.com

Mr. Kevin Calvert (0) Adaptec, Inc. 9701 Jeronimo Irvine, CA 92618 Ph: (714) 455-8350 FX: (714) 455-8103 Em: KCalvert@corp. adaptec. com

Mr. Erik Falk (0) ADIC POB 2996 Redmond, WA 98073-2996 Ph: (206) 881-8004 FX: (206) 881-2296 Em:

Mr. Fernando L. Podio (L) AIIM C21 Chair NIST Bldg. 225, Room A61 Gaithersburg, MD 20899 Ph: (301) 975-2947 FX: (301) 216-1369 Em: fernando@pegasus.ncsl.nist.gov

Mr. Peter Haas (A) Amdahl Corp. 1250 E Arques Avenue, MS 312 Sunnyvale, CA 94088-3470 Ph: (408) 944-5119 FX: (408) 733-2377 Em:

Mr. Kent Manabe (0) America Kotobuki Electronics 100 Century Center Ct. #310 San Jose, CA 95112 Ph: (408) 441-9232 FX: (408) 441-9246 Em: manabe@ix.netcom.com

Mr. Bob Whiteman (A) AMP, Inc.

Mail Stop 210-20 P. 0. Box 3608 Harrisburg, PA 17105 Ph: (717) 592-6198 FX: (717) 558-6179 Em: cebrill@amp.com Mr. Bob Atkinson (0) AMP, Inc. P0 Box 3608 Harrisburg, PA 17105 Ph: (717) 780-4274 FX: (717) 780-4113 Em: rdatkins@amp.com Mr. Geoff Zech (0) AMP, Inc. 449 Eisenhower Blvd. Harrisburg, PA 17111 Ph: (717) 780-6572 FX: (717) 780-4508 Em: ghzech@amp.com Mr. Carl Booth (0) Amphenol /Spectra-Strip 720 Sherman Ave. Hamden, CT 06514 Ph: (203) 287-7455 FX: (203) 281-5872 Em: 7480559@mcimail.com Mr. Gary Porter (A) Ancot Corp. 115 Constitution Dr. Menlo Park, CA 94025 Ph: (415) 322-5322 FX: (415) 322-0455 Em: garyp@ancot.com

Mr. Mike Eneboe (A#) Apple Computer 1 Infinite Loop, MS:60-IO Cupertino, CA 95014 Ph: (408) 974-0615 FX: (408) 974-6615 Em: Mike_Eneboe@quickmail.apple.com

Mr. Chris Brown (0) Apple Computer, Inc. 3535 Monroe St., MS: 69-B Santa Clara, CA 95051 Ph: (408) 862-3159 FX: (408) 974-5713 P. 0. Box 3608 M/S 26-17 Harrisburg, PA 17105 Ph: (717) 780-7481 FX: (717) 780-7375 Em:

Mr. John Fulponi (0) AMP, Inc. 3705 Paxton Street Harrisburg, PA _____ Ph: (717) 780-6160 FX: (717) 780-6735 Em: JAFulpon@amp.com

Mr. Michael Wingard (P) Amphenol Interconnect 20 Valley St. Endicott, NY 13760 Ph: (607) 786-4241 FX: (607) 786-4311 Em: mikwingard@aol.com

Mr. Jan V. Dedek (P) Ancot Corp. 115 Constitution Dr. Menlo Park, CA 94025 Ph: (415) 322-5322 FX: (415) 322-0455 Em: dedek@ancot.com

Mr. Dave Holzer (P) Apple Computer 3535 Monroe St., MS 69-G Santa Clara, CA 95051 Ph: (408) 974-9314 FX: (408) 974-2898 Em: dholzer@apple.com

Mr. Ron Roberts (A) Apple Computer 3535 Monroe St. MS: 69-G Santa Clara, CA 95051 Ph: (916) 677-5714 FX: (916) 677-1218 Em: rkroberts@aol.com

Mr. Joe Lawlor (0) AT&T 1100 E. Warrenville Rd. Rm 2A-429 Naperville, IL 60566 Ph: (708) 979-0133

X3T10/97-112r1

FX: (708) 979-0291 Em: brown. c@applelink. apple. com Em: Mr. Chris Nieves (0) Mr. Douglas Wagner (P) Auspex Systems Berg Electronics 5200 Great America Pkwy. 472 Delwood Ct. Santa Clara, CA 95054 Newbury Park, CA 91320-4819 Ph: (805) 498-0325 Ph: (408) 986-2087 FX: (408) 986-2364 FX: (805) 498-0325 Em: jpxw76a@prodigy.com Em: cnieves@auspex.com Mr. Dennis R. Haynes (0) Mr. Jim Koser (A) Berg Electronics Burr-Brown Corp. 825 Old Trail Road Mail Stop #122 P. 0. Box 11400 Etters, PA 17319 Ph: (717) 938-7679 Tucson, AZ 85734 Ph: (520) 746-7262 FX: (717) 938-7991 Em: jkoser@aol.com FX: (520) 746-7401 Em: haynes_dennis@bbrown.com Mr. Bob Gannon (0) Mr. Clifford E. Strang Jr. (0) C&M Corp. **BusLogi** c PO Box 348 4151 Burton Dr. Santa Clara, CA 95054 51 South Walnut St. Ph: (408) 565-6940 Wauregan, CT 06387 Ph: (203) 774-4812 FX: (408) 970-0941 Em: skip@buslogic.com FX: (203) 774-7330 Em: bobg848740@aol.com Mr. Richard Wagner (P) Mr. Gerry Johnsen (P) Cable Design Technologies Ciprico Inc. 2800 Campus Dr. Suite 60 28 Sword Street Plymouth, MN 55441 Auburn, MA 01501 Ph: (612) 551-4000 Ph: (508) 791-3161 FX: (508) 798-8353 FX: (612) 551-4002 Em: rwagner@montrose-cdt.com Em: gerry@ciprico.com Mr. Raymond Gilson (A) Mr. Ian Morrell (P) Circuit Assembly Corp. Ciprico Inc. 2800 Campus Drive 18 Thomas St. Suite 60 Irvine. CA 92718-2703 Plymouth, MN 55441 Ph: (714) 855-7887 Ph: (612) 551-4047 FX: (714) 855-4298 FX: (612) 551-4002 Em: ianm@ca-online.com Em: rwg@ciprico.com Mr. Dennis Lang (A) Mr. Ben Chang (0) Circuit Assembly Corp. Cirrus Logic Inc. 18 Thomas St. 3100 W. Warren Ave. Irvine, CA 92718-2703 Fremont, Ca 94538 Ph: (714) 855-7887 Ph: (510) 226-2394 FX: (714) 855-4298 FX: Em: dennisl@ca-online.com Em: ben@corp. cirrus. com Mr. Florey Lin (0) Mr. Nicos Syrimis (0)

Cirrus Logic Inc. 3100 W. Warren Ave. Fremont, Ca 94538 Ph: (510) 623-8300 x3774 FX: (510) 226-2370 Em: florey@corp.cirrus.com

Mr. Chi Wang (0) Cirrus Logic Inc. 3100 W. Warren Ave. Fremont, Ca 94538 Ph: (510) 249-4278 FX: Em: cwang@corp.cirrus.com

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

Mr. Bill Galloway (0) Compaq Computer Corp. P.O. Box 692000 MD90504 Houston, TX 77269-2000 Ph: (713) 514-6732 FX: (713) 514-0513 Em: billg@bangate.compaq.com

Mr. Michael Smith (P) Dallas Semiconductor 4401 S. Beltwood Pkwy Dallas, TX 75244 Ph: (972) 371-3457 FX: (214) 450-3715 Em: msmith@dalsemi.com

Mr. Greg McSorley (0) Data General Corp. 4400 Computer Dr. Westboro, MA 01580 Ph: (508) 898-6032 FX: (508) 898-5413 Em: greg_mcsorley@dgc.ceo.dg.com

Mr. Charles Monia (P) Digital Equipment Corp. SHR3-2/WO4 334 South Street Shrewsbury, MA 01545 Cirrus Logic Inc. 3100 W. Fremont Ave. Fremont, CA 94538 Ph: (510) 226-2153 FX: (510) 226-2170 Em: nicos@corp.cirrus.com

Mr. Ken Wolfgang (0) Cirrus Logic Inc. 350 Interlocken Parkway Broomfield, C0 80021 Ph: (303) 460-5228 x6661 FX: Em: kenw@colorado.cirrus.com

Mr. Borden Moller (A) CMD Technology 1 Vanderbilt Irvine, CA 92617 Ph: (714) 454-0800 FX: Em: borden@cmd.com

Mr. Peter Johansson (P) Congruent Software, Inc. 3998 Whittle Ave. Oakland, CA 94602 Ph: (510) 531-5472 FX: (510) 531-2942 Em: pjohansson@aol.com

Mr. Siegfried Schmalz (A) Dallas Semiconductor 4401 S. Beltwood Pkwy. Dallas, TX 75244 Ph: (972) 371-3764 FX: (972) 450-3715 Em: schmalz@dalsemi.com

Mr. Rick Hardy (0) Denron, Inc. 2135 Ringwood Ave. San Jose, CA 95131 Ph: (408) 435-7697 FX: (408) 435-1109 Em: rhardy@denron.com

Mr. William Dallas (A#) Digital Equipment Corp. ZK03-3/T79 110 Spit Brook Road Nashua, NH 03062-2698

Ph: (508) 841-6757

FX: (508) 841-6100 Em: monia@shr.dec.com Mr. Douglas Hagerman (A#) Digital Equipment Corp. SHR3-2/W3 334 South Street Shrewsbury, MA 01545 Ph: (508) 841-2145 FX: (508) 841-6100 Em: hagerman@starch.enet.dec.com Mr. Stephen J. Sicola (0) Digital Equipment Corp. 301 Rockrimmon Blvd. So. Colorado Springs, CO 80132 Ph: (719) 548-2268 FX: (719) 548-2541 Em: si col a@peaks. dec. com Mr. Tom Treadway (A) Distributed Processing Tech. 140 Candace Dr. Maitland, FL 32751 Ph: (407) 830-5522 FX: (407) 260-5366 Em: Treadway@dpt.com Mr. Rick Bohn (A) Eastman Kodak Co. 460 Buffalo Road Rochester, NY 14652-3816 Ph: (716) 722-0997 FX: (716) 588-2624 Em: bohn@sector.kodak.com Mr. I. Dal Allan (P) ENDL 14426 Black Walnut Ct. Saratoga, CA 95070 Ph: (408) 867-6630 FX: (408) 867-2115 Em: dal allan@mcimail.com Ms. Constance Kephart (A) Exabyte Corp. 1685 38th Street Boulder, CO 80301 Ph: (303) 417-7927 FX: (303) 417-7829 Em: conniek@exabyte.com

Ph: (603) 881-2508 FX: (603) 881-2257 Em: dallas@wasted.enet.dec.com Dr. William Ham (A#) Digital Equipment Corp. SHR3-2/W04 334 South Street Shrewsbury, MA 01545 Ph: (508) 841-2629 FX: (508) 841-5266 Em: ham@subsys.enet.dec.com Mr. Roger Cummings (P) Distributed Processing Tech. 140 Candace Dr. Maitland, FL 32751 Ph: (407) 830-5522 x348 FX: (407) 260-5366 Em: cummings_roger@dpt.com Mr. Robert Reisch (P) Eastman Kodak Co. 460 Buffalo Road Rochester, NY 14652-3816 Ph: (716) 588-0573 FX: (716) 588-2624 Em: reisch@kodak.com Mr. James D. Converse (X0) Eastman Kodak Co. Corp. Standards X3 Chair 343 State Street Rochester, NY 14650 Ph: (716) 781-9091 FX: (716) 724-9023 Em: jdc@kodak.com Mr. Edward Lappin (P) Exabyte Corp. Mail Stop 7W1 1685 38th Street Boulder, C0 80301 Ph: (303) 417-7718 FX: (303) 417-7793 Em: tedl@exabyte.com Mr. Gary R. Stephens (0) FSI Consulting Services 1825 N. Norton Tucson, AZ 85719 Ph: (520) 321-1725 FX: (520) 321-1725 Em: 6363897@mcimail.com

Mr. Mike Chenery (A#) Fujitsu 2904 Orchard Pkwy. San Jose, CA 95134-2009 Ph: (408) 894-3627 FX: (408) 894-3904 Em: mchenery@fcpa.fujitsu.com

Mr. Robert Liu (P) Fujitsu Computer Products, Am 2904 Orchard Pkwy. San Jose, CA 95134 Ph: (408) 894-3790 FX: (408) 894-3748 Em: rliu@fcpa.fujitsu.com

Mr. Bob Thornton (A#) Fujitsu Takamisawa America 250 E. Caribbean Dr. Sunnyvale, CA 94089 Ph: (408) 745-4932 FX: (408) 745-4971 Em: bthornto@fta.fujitsu.com

Mr. Joel Urban (0) Harting Elektronik 2155 Stonington Ave. Hoffman Estates, IL 60195 Ph: (847) 519-7700 x280 FX: (847) 519-7712 Em:

Mr. William Martin (A) Hewlett Packard Co. 8000 Foothills Blvd MS 5601 Roseville, CA 95747-5601 Ph: (916) 785-4517 FX: (916) 785-2875 Em: wrm@core.rose.hp.com

Mr. Pat Edsall (0) Hewlett Packard Co. 11413 Chinden Blvd. Boise, ID 83714 Ph: (208) 396-4804 FX: (208) 396-6858 Em: edsall@hpdmd48.boi.hp.com

Mr. Ruben Yomtoubian (0) Hitachi America 3101 Tasman Dr. Santa Clara, CA 95054 Mr. Andy Chen (A) Fujitsu Computer Prods Amer 2904 Orchard Pkwy. San Jose, CA 95134-2009 Ph: (408) 894-3840 FX: (408) 894-3748 Em: achen@fcpa.fujitsu.com

Mr. Kevin R. Pokorney (A#) Fujitsu Computer Products, Am 2402 Clover Basin Drive Longmont, CO 80503 Ph: (303) 682-6649 FX: (303) 682-6401 Em: pokorney@intellistor.com

Mr. Steve Caron (0) Furukawa Electric 200 Westpark Dr. Suite 190 Peachtree City, GA 30269 Ph: (404) 487-1234 FX: (404) 487-9910 Emm:

Mr. J. R. Sims (P) Hewlett Packard Co. 800 S. Taft Ave. Loveland, CO 80537 Ph: (970) 635-6774 FX: (970) 635-6610 Em: robsims@depeche.lvld.hp.com

Mr. Donald C. Loughry (X0) Hewlett Packard Co. M/S 43UC X3 Vice Chair 19420 Homestead Rd. Cupertino, CA 95014 Ph: (408) 447-2454 FX: (408) 447-2247 Em: don_loughry@hp6600. desk. hp. com Mr. Bill Hutchison (0) Hewlett Packard Co. P. 0. Box 15 Boise, ID 83707-0015 Ph: (208) 396-3369 FX: (208) 396-5117

Em: hutch@boi.hp.com

Mr. Anthony Yang (0) Hitachi America Ltd. 3101 Tasman Drive Santa Clara, CA 95054

X3T10/97-112r1

X3T10/97-112r1

Ph: (408) 986-9770 x467 FX: (408) 986-1821 Em: r_yomtoubian@hitachi.com

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

Ms. Nancy Cheng (0) Hitachi Computer Products 3101 Tasman Dr. Santa Clara, CA 94054 Ph: (408) 986-9770 FX: (408) 986-1825 Em: n_cheng@hitachi.com

Mr. Thomas J. Kulesza (P) Honda Connectors 960 Corporate Woods Parkway Vernon Hill, IL 60061 Ph: (847) 913-9566 FX: (847) 913-9587 Em: mhotro@interaccess.com

Mr. George Penokie (P) IBM Corp. 2B7/114-2 37st Highway 52 N. Rochester, MN 55901-7829 Ph: (507) 253-5208 FX: (507) 253-2432 Em: gop@rchvmp3.vnet.ibm.com

Mr. John P. Scheible (A) IBM Corp. Bldg 815 MS 4051 11400 Burnett Rd. Austin, TX 78758 Ph: (512) 823-8208 FX: (512) 823-0758 Em: Scheible@vnet.ibm.com Mr. Michael A. Brewer (0) IBM Corp. 74m/031-1

9000 S. Rita Rd. Tucson, AZ 85744 Ph: (520) 799-6984 FX: Em: mabrewer@vnet.ibm.com Ph: (408) 653-0315 FX: (408) 653-0376 Em: yang_a@halsp.hitachi.com

Mr. Paul Boulay (0) Hitachi Computer Products 3101 Tasman Drive Santa Clara, CA 95054 Ph: (408) 986-9770 x205 FX: (408) 986-1821 Em: p_boulay@hitachi.com

Mr. Nedi Nadershahi (0) Hitachi Micro Systems, Inc. 179 Tasman Dr. San Jose, CA 95134 Ph: (408) 456-2006 FX: (408) 433-0223 Em: nnadersh@hmsi.com

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

Mr. Dan Colegrove (A#) IBM Corp. Dept 805/012-2 5600 Cottle Rd. San Jose, CA 95193 Ph: (408) 256-1978 FX: (408) 256-1044 Em: colegrove@vnet.ibm.com Mr. Robert Basham (0) IBM Corp. 65U/031-Z 9000 S. Rita Rd. Tucson, AZ 85744 Ph: (520) 799-4923 FX: Em: robbyb@vnet.ibm.com Mr. Lee Jesionowski (0)IBM Corp. 64N/031-Z 9000 S. Rita Rd. Tucson. AZ 85744 Ph: (520) 799-5984 FX: (520) 799-2408 Em: jez@vnet.ibm.com

Mr. Duncan Penman (0) IIX Consulting 1045 Rubis Dr. Sunnyval e, CA 94087 Ph: (408) 730-2565 FX: (408) 730-5527 Em: penman@netcom.com Mr. Geoffrey Barton (P) Iomega Corp. 1821 West 4000 South Roy, UT 84067 Ph: (801) 778-3655 FX: (801) 778-4667 Em: glbarton@iomega.com Ms. Katrina Gray (L) ITI (X3 Secretariat) 1250 Eye St. NW Suite 200 Washington, DC 20005-3922 Ph: (202) 626-5741 FX: (202) 638-4922 Em: kgray@itic.nw.dc.us Mr. David J. Fox (0) JAE Electronics 142 Technology Dr. #100 Irvine, CA 92718-2401 Ph: (714) 753-2600 FX: (714) 753-2699 Em: Mr. Dean Wallace (P) Linfinity Micro 11861 Western Ave. Garden Grove, CA 92641 Ph: (714) 898-8121 FX: (714) 893-2570 Em: 75671.3443@compuserve.com Mr. Wayne E. Werner (0) Lucent Technologies 1247 S. Cedar Crest Blvd. Allentown, PA 18103 Ph: (610) 712-2234 FX: Em: wew@aluxpo.lucent.com

Mr. Chuck Grant (A) Madison Cable Corp. 125 Goddard Memorial Drive Mr. David Lawson (0) Interphase Corp. 13800 Senlac Dallas, TX 75234-8823 Ph: (214) 919-9000 FX: (214) 919-9200 Em: lawson@iphase.com Mr. Pat LaVarre (A) Iomega Corp. 1821 West Iomega Way Roy, UT 84067 Ph: (801) 778-4402 FX: (801) 778-4667 Em: p.lavarre@ieee.org

Mr. David H. Shaff (0) JAE 2857 NE 26 Street Ft. Lauderdale, FL 33305 Ph: (305) 563-3484 FX: (305) 563-3507 Em:

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

Mr. Louis Grantham (A) Linfinity Micro 101 W. McDermott Allen, TX 75013 Ph: (972) 346-7002 FX: (972) 396-7533 Em: lgdatcom@ix.netcom.com

Mr. Robert Bellino (P) Madison Cable Corp. 125 Goddard Memorial Dr. Worchester, MA 01603 Ph: (508) 752-7320 FX: (508) 752-4230 Em: robert_bellino@madisonusa.ccmail.compu serve.com Ms. Donna Pope (O) Maxoptix Corp. 2520 Junction Ave.

X3T10/97-112r1

Worcester, MA 01603 San Jose, CA 95134 Ph: (508) 752-2884 x725 Ph: (408) 954-9700 x315 FX: (508) 752-4230 FX: (408) 954-9711 Em: Em: charles_grant@madi sonusa.ccmail.compus erve. com Mr. Pete McLean (P) Mr. LeRoy Leach (0) Maxtor Corp. Maxtor Corp. 2190 Miller Dr. 2190 Miller Dr. Longmont, CO 80501 Longmont, C0 80501-6744 Ph: (303) 678-2149 Ph: (303) 678-2828 FX: (303) 678-2165 FX: (303) 678-2308 Em: leroy_leach@maxtor.com Em: pete_mclean@maxtor.com Mr. John Cannon (0) Mr. Chris Nieves (0) Methode Electronics, Inc. Micropolis Corp. 7444 West Wilson Ave 21211 Nordhoff St. Chicago, IL 60656 Chatsworth, CA 91311 Ph: (708) 867-9600 Ph: (818) 718-5163 FX: (708) 867-9130 FX: (818) 718-5352 Em: Chris_Nieves@microp.com Em Mr. Michael Aarons (0) Mr. Joe Dambach (P) Mitsumi (Alpha Peripherals) Molex Inc. 16842 Von Karman Ave. 2222 Wellington Court Suite 100 Lisle, IL 60532 Ph: (708) 527-4546 Irvine, CA 92714 Ph: (714) 263-6414 FX: (708) 969-1352 FX: (714) 263-6416 Em: jdambach@molex.com Em: m aarons@cerf.net Mr. Jay Neer (A) Mr. E. Jake Berzon (P) NEC Electronics, Inc. Molex Inc. 399 W. Camino Gardens Blvd. 2880 Scott Blvd. MS SC2200 Suite 103 Santa Clara, CA 95052-8062 Boca Raton, FL 33432 Ph: (408) 588-5408 Ph: (561) 447-2907 FX: (408) 588-5464 FX: (561) 447-2908 Em: jberzon@asic.mtv.nec.com Em: jneer@molex.com Mr. Son Ho (0) Mr. Chris D'Iorio (0) NEC Technologies Neomagic Corp. 3260 Jay St. 1255 Michael Dr. Santa Clara, CA 95056 Wood Dale, IL 60191 Ph: (708) 238-7799 Ph: (408) 988-7020 FX: (708) 860-7794 FX: (408) 988-7032 Em: CD-iorio@nectech.com Em: sho@neomagic.com Mr. Anthony E. Pione (P) Mr. Peter Gossler (0) NSM Jukebox GmbH 0ak Technology, Inc. 4730 NW Boca Raton Blvd. 1M Tiergarten 20-30 Bingen 55411 Germany Suite 100 Boca Raton, FL 33431 Ph: +49 6721 964-394 FX: +49 6721 407-414 Ph: (407) 995-8880 x14 Em: PeterGossler@nsm.com FX: (407) 995-8872

Mr. Wayne Baldwin (A#) **Oak Technology**, Inc. 139 Kifer Ct. Sunnyval e, CA 94086 Ph: (408) 737-0888 FX: (408) 774-5352 Em: wayneb@corp.oaktech.com

Mr. Robin Freeze (A#) 0ak Technology, Inc. Ph: (408) 523-6652 FX: Em: RobinF@oaktech.com

Mr. Edward A. Gardner (P) Ophidian Designs 1262 Hofstead Terrace Colorado Springs, CO 80907 Ph: (719) 593-8866 FX: (719) 593-8989 Em: gardner@acm.org

Mr. Earl J. Perera (0) P. E. Logic Corp. 22695 Old Canal Rd. Yorba Linda, CA 92687 Ph: (714) 282-6188 FX: (714) 282-6199 Em:

Dr. Akira James Miura (A) Panasoni c Technologi es, Inc 1072 East Meadow Circle Palo Alto, CA 94303-4270 Ph: (415) 858-1000 FX: (415) 493-1930 Em: miura@tadw.research.panasonic.com Em: BMcFerrin@aol.com

Mr. David A. Pohm (A) Philips Key Modules 1860 Lefthand Circle. Longmont, CO 80501CO 80907 Ph: (303) 651-5409 FX: (303) 682-3029 Em: dapohm@aol.com

Mr. Mehran Ramezani (0) Phoenix Technologies Ltd. Em: AnthonyP@oaktech.com Mr. Jack Chen (A#) Oak Technology, Inc. 139 Kifer Court Sunnyvale, CA 94086 Ph: (408) 523-6665 FX: Em: jackc@oaktech.com

Mr. Mike Hetzel (A) 0ak Technology, Inc. 139 Kifer Ct. Sunnyvale, CA 94086 Ph: (408) 737-0888 x257 FX: (408) 737-3838 Em: mikeh@corp.oaktech.com

Mr. Dan Davies (0) Overland Data Inc. 8975 Balboa Ave. San Diego, CA 92123-1599 Ph: (619) 571-5555 x213 FX: (619) 571-3664 Em: ddavies@ovrland.com

Mr. Stephen F. Heil (P) Panasonic Technologies. Inc 2 Research Way, 3rd Floor Princeton, New Jersey 08540 Ph: (609) 987-3948 FX: (609) 987-0483 Em: sfh@research.panasonic.com

Mr. William P. McFerrin (P) Philips Key Modules 1860 Lefthand Circle Longmont, CO 80501 Ph: (303) 651-5408 FX: (303) 682-3029

Mr. Sunil Nethisinghe (0) Philips Semiconductors MS 52 811 E. Arques Ave. Sunnyvale, CA 94088 Ph: (408) 991-4540 FX: (408) 991-4500 Em: nethisin@scs.philips.com

Mr. Param Panesar (0) **Pioneer Research**

X3T10/97-112r1

2575 McCabe Way 1745 Berkekey St. Irvine, CA 92714 Santa Monica, CA 90404 Ph: (714) 224-8260 Ph: (310) 829-6751 FX: (714) 251-2924 FX: (310) 453-3929 Em: mehran_ramezani@ptltd.com Em: Mr. Marco Antonio Scocco (0) Mr. Skip Jones (P) Pirelli Cabos S/A Engenharia De Telecomcunicacoes Av Pirelli 1100-Bairro Eden 18103-000 Sorocaba SP Brazil Ph: FX: Em: Mr. Ting Li Chan (A) QLogic Corp. 3545 Harbor Blvd. P. 0. Box 6725 Costa Mesa, CA 92626 Ph: (714) 668-5058 FX: (714) 688-5008 Em: t_chan@qlc.com Mr. James McGrath (P) Quantum Corp. 500 McCarthy Blvd. Milpitas, CA 95035 Ph: (408) 894-4504 FX: (408) 894-6375 Em: JMCGRATH@QNTM. COM Mr. John A. Fobel (0) Rancho Technology, Inc. 10783 Bell Court Rancho Cucamonga, CA 91730 Ph: (909) 987-3966 FX: (909) 989-2365 Em: johnf@rancho.com Mr. S. Jauher Zaidi (0) Samsung Semi conductor 3655 N. First Street MS/E3 San Jose, CA 95134-1713 Ph: (408) 954-7005 FX: (408) 954-7150 Em: syed@sam.com Mr. Gerald Houlder (A) Seagate Technology **MPS043** 8001 E. Bloomington Freeway Bloomington, MN 55420-1094 Ph: (612) 806-2869 FX: (714) 966-5577

QLogic Corp. 3545 Harbor Blvd. Costa Mesa, CA 92626 Ph: (714) 668-5058 FX: (714) 688-5008 Em: sk_jones@qlc.com Mr. Tom Jones (A#) OLogic Corp. 3545 Harbor Blvd. Costa Mesa, CA 92675 Ph: (714) 668-5361 FX: (714) 668-5069 Em: t_jones@qlc.com Mr. Mark Evans (A) Quantum Corp. 500 McCarthy Blvd. Milpitas, CA 95035 Ph: (408) 894-4019 FX: (408) 894-4990 Em: mevans@gntm.com Dr. Tetsuro Motoyama (0) Ricoh Corporation 3001 Orchard Parkway San Jose, CA 95134-2088 Ph: (408) 954-5445 FX: (408) 432-8398 Em: motoyama@str.ricoh.com Mr. Gene Milligan (P) Seagate Technology MS OKM 251 P. 0. Box 12313 Oklahoma City, OK 73157 Ph: (405) 324-3070 FX: (405) 324-3794 Em: Gene_Milligan@notes.seagate.com Mr. Paul Entzel (0) Seagate Technology 1650 Sunflower Ave. Costa Mesa, CA 92626 Ph: (714) 966-2204

FX: (612) 806-2708 Em: Gerry_Houlder@notes.seagate.com

Mr. Edward Hoskins (0) Seagate Technology 2655 Park Center Dr. Simi Valley, CA 93065 Ph: (805) 582-3821 FX: (805) 583-1493 Em: ed_hoskins@notes.seagate.com

Mr. Ron Werbow (0) Seagate Technology 2655 Park Center Dr. Simi Valley, CA 93065 Ph: (805) 582-3815 FX: (805) 583-1493 Em: ron_werbow@notes.seagate.com

Dr. Colin Whitby-Strevens (0) SGS-Thomson/INMDS 1000, Aztec West Almondsbury, Bristol, BS12 4SQ UK Ph: +44 454 611 500 FX: +44 454 619 796 Em: colinws@bristol.st.com

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

Mr. David Deming (0) Solution Technology P. 0. Box 104 Boulder Creek, CA 95006 Ph: (408) 338-4285 FX: (408) 338-4374 Em:

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

Mr. Robert N. Snively (P)

Em: paul.entzel@conner.com

Mr. Joseph Wach (0) Seagate Technology 2400 Trade Centre Longmont, C0 80503 Ph: (303) 682-8387 FX: (303) 682-8787 Em: Joe. Wach@conner.com

Mr. James Whitworth (0) Seagate Technology 2911 Zanker Rd. San Jose, CA 95134 Ph: (408) 456-3694 FX: (408) 456-3309 Em: James_A_Whitworth@notes. seagate. com

Mr. Dave Guss (P) Silicon Systems, Inc. 14351 Myford Rd. Tustin, CA 92780 Ph: (714) 573-6824 FX: (714) 573-6916 Em: dave.guss@tus.ssil.com

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

Mr. Mike Yokoyama (P) Sony Electronics, Inc. 3300 Zanker Rd. MS# SJ-3B2 San Jose, CA 95134 Ph: (408) 955-4344 FX: (408) 955-5066 Em: yokoyama@dss.sel.sony.com

Mr. Doug Charnley (A) Storage Technology Corp. 2270 South 88th St. MS 0211 Louisville, C0 80028-0211 Ph: (303) 661-7271 FX: (303) 673-8196 Em: doug_charnley@stortek.com

Mr. Vit Novak (A)

Sun Microsystems Computer Co Mail Stop UMPK 12-204 2550 Garcia Avenue Mountain View, CA 94043-1100 Ph: (415) 786-6694 FX: (415) 786-6458 Em: bob. snivel y@eng. sun. com

Mr. John Lohmeyer (P) Symbios Logic Inc. 4420 ArrowsWest Dr. Colorado Springs, CO 80907 Ph: (719) 533-7560 FX: (719) 533-7036 Em: john.lohmeyer@symbios.com

Mr. Ralph O. Weber (A) Symbios Logic Inc. Suite 400 12377 Merit Drive Dallas, TX 75251 Ph: (972) 503-3205 FX: (972) 503-2258 Em: roweber@acm.org

Mr. Brian McKean (A) SyQuest Technology, Inc. 3005 Center Green Drive Suite 100 Boulder, CO 80301 Ph: (303) 938-2940 FX: (303) 938-2987 Em: brian.mckean@syquest.com

Mr. Pete Tobias (A) Tandem Computers Loc 100-03 10555 Ridgeview Ct. Cupertino, CA 95014-0789 Ph: (408) 285-9913 FX: (408) 285-9924 Em: tobias_pete@tandem.com

Mr. Kevin Gingerich (0) Texas Instruments, Inc. P. 0. Box 660199 M/S 8710 Dallas, TX 75266-0199 Ph: (214) 480-3378 FX: (214) 480-3535 Em: k-gingerich@ti.com

Mr. Tokuyuki Totani (P) Toshiba America 226 Airport Pkwy, Suite 310 San Jose, CA 95110 Ph: (408) 451-6960

Sun Microsystems, Inc. Mail Stop 15-46 2550 Garcia Ave. Mountain View, CA 94043-1100 Ph: (415) 336-2455 FX: (415) 968-4873 Em: vit.novak@sun.com Mr. Rod DeKoning (A#) Symbios Logic Inc. 3718 N. Rock Rd. Wichita, KS 67226 Ph: (316) 636-8842 FX: (316) 636-8889 Em: rod. dekoning@symbios. com Mr. Patrick Mercer (P) SyQuest Technology, Inc. 47071 Bayside Parkway Fremont, CA 94538-6517 Ph: (510) 226-4215 FX: (510) 226-4104 Em: patrick.mercer@syquest.com Mr. John Moy (P) **Tandem Computers** Loc 100-03 10555 Ridgeview Ct. Cupertino, CA 95014-0789 Ph: (408) 285-0463 FX: (408) 285-9924 Em: moy_john@tandem.com Mr. Bill Boyd (0) Texas Instruments MS 8218 8360 LBJ Freeway Dallas, TX 75265 Ph: (214) 997-3673 FX: (214) 997-5962 Em: bboy%mimi@magic.itg.ti.com Mr. Steven Walker (0) Thomas & Betts 1555 Lynnfield Rd. Memphis, TN 38119 Ph: (901) 680-5992 FX: (901) 537-8805 Em: walkertnb@aol.com Mr. John Hoy (0) Toshiba America

Toshiba America 1060 Rincon Circle San Jose, CA 95131 Ph: (408) 526-2528 X3T10/97-112r1

X3T10/97-112r1

FX: (408) 451-9750 Em: totani@ix.netcom.com

Mr. Gary M. Watson (0) Trimm Technologies 350 Pilot Rd. Las Vegas, NV 89119 Ph: (800) 423-2024 FX: Em: trimm@netcom.com

Mr. Arlan P. Stone (A) UNISYS Corporation MS 201 25725 Jeronemo Rd. Mission Viejo, CA 92691 Ph: (714) 380-5982 FX: (714) 380-6099 Em: arlan.stone@mv.unisys.com

Ms. Francis Terry (A) Unitrode Corporation 7 Continental Blvd Merrimack, NH 03054-0399 Ph: (603) 429-8713 FX: (603) 429-8963 Em: terry@unitrode.com

Mr. Michael G. Kaminski (0) Volex Inc. 835 Sinclair Frontage Road Milpitas, CA 95035 Ph: (408) 945-7766 FX: (408) 945-4360 Em: Mike Kaminski@volex.com

Mr. Jeffrey L. Williams (P) Western Digital Corporation 1599 N. Broadway Ave. Rochester, MN 55906 Ph: (507) 286-7589 FX: (507) 286-7528 Em: jwilliam@wdroc.wdc.com

Mr. Devon Worrell (A) Western Digital Corporation 8105 Irvine Ctr. Dr. Irvine, CA 92618 Ph: (714) 932-7042 FX: (714) 932-7796 Em: worrell@dt.wdc.com FX: (408) 526-2428 Em: john.hoy@taec.com

Mr. Kenneth J. Hallam (P) UNISYS Corporation MV201 25725 Jeronimo Road Mission Viejo, CA 92691 Ph: (714) 380-5115 FX: (714) 380-5858 Em: ken. hallam@mv. unisys.com

Mr. Paul D. Aloisi (P) Unitrode Corporation MS: 84 7 Continental Blvd Merrimack, NH 03054 Ph: (603) 429-8687 FX: (603) 429-8963 Em: aloisi@unitrode.com Mr. Eric Swartz (0)

Verisys 2901-B Research Park Dr. Soquel, CA 95073 Ph: (408) 464-4292 FX: (408) 464-4250 Em: eric@verisys.com

Mr. Francesco Liburdi (0) Wearnsi Hollingsworth 1425 Elmira St. Endicott, NY 13760 Ph: (607) 786-3721 FX: (607) 786-3806 Em: liburdfwh@aol.com

Mr. Jonathan L. Hanmann (A#) Western Digital Corporation 8105 Irvine Ctr. Dr. Irvine, CA 92618 Ph: (714) 932-5189 FX: (714) 932-7097 Em: jhanmann@dt.wdc.com

Mr. Carl Bonke (0) Western Digital Corporation 8105 Irvine Ctr. Dr. Irvine, CA 92718 Ph: (714) 932-7622 FX: (714) 932-7798 Em: bonke@dt.wdc.com Mr. Doug Piper (P) Woven Electronics PO Box 189 Mauldin, SC 29662 Ph: (803) 967-1751 FX: (803) 963-1761 Em: doug.piper@internetmci.com

Mr. Arnold Limjoco (0) Yamaichi Electronics 2235 Zanker Rd. San Jose, CA 95131 Ph: (408) 456-0797 x134 FX: (408) 456-0799 Em: arnold. l@yeu. com Mr. E. J. Mondor (A) Woven Electronics PO Box 189 Mauldin, SC 29662 Ph: (803) 967-1739 FX: (803) 963-1761 Em: 549.9900@mcimail.com

Jan 15, 1997 - X3T10 Document Register - Enclosure (3)

X3T10/97-001R0 Date: 11/22/96 Author: J. Lohmeyer [SY-97-01] Agenda for X3T10 Meeting #20 (Mar '97) X3T10/97-002R0 Date: 11/22/96 Author: J. Lohmeyer [SY-97-01] X3T10 Project Summary - Jan '97 X3T10/97-003R0 Date: 11/22/96 Author: J. Lohmeyer [SY-97-01] Jeopardy letter for Mar '97 meeting X3T10/97-004R0 Date: 11/22/96 Author: J. Lohmeyer [SY-97-01] Results of X3T10/96-045 Letter Ballot X3T10/97-005R0 Date: 11/22/96 Author: J. Lohmeyer [SY-97-01] Response to 1PR Comment #1 on X3. 301-199x (SPC) X3T10/97-006R0 Date: 11/22/96 Author: J. Lohmeyer [SY-97-01] Response to 1PR Comment #2 on X3. 301-199x (SPC) X3T10/97-007R0 Date: 12/26/96 Author: J. Garner [SY-97-01] Call for Volunteers - Chairman X3T10 X3T10/97-101R0 Date: 1/2/97 Author: R. Snively [SY-97-01] Draft tutorial for IEEE company id based SCSI identifiers X3T10/97-102R0 Date: 1/2/97 Author: R. Roberts [SY-97-01] MMC-2 Additional Definitions X3T10/97-103R0 Date: 1/2/97 Author: R. Roberts [SY-97-01] MMC-2 DVD MODEL X3T10/97-104R0 Date: 1/2/97 Author: R. Roberts [SY-97-01] MMC - 2 CD MODEL X3T10/97-105R0 Date: 1/2/97 Author: R. Roberts [SY-97-01] MMC-2 CHANGER MODEL X3T10/97-106R0 Date: 1/2/97 Author: R. Roberts [SY-97-01] DVD POWER MANAGEMENT MMC-2 X3T10/97-107R0 Date: 1/2/97 Author: R. Roberts [SY-97-01] FEATURE SETS MMC - 2 X3T10/97-108R0 Date: 1/2/97 Author: R. Roberts [SY-97-01] Packet Commands for C/DVD Devices MMC-2 X3T10/97-109R0 Date: 1/2/97 Author: R. Roberts [SY-97-01] MMC X3T10/97-110R0 Date: 1/6/97 Author: Weber/Lohmeyer [SY-97-01] Minutes of SPI-2 Working Group - 1/97 Date: 1/6/97 Author: Weber/Lohmeyer [SY-97-01] X3T10/97-111R0 Minutes of SCSI Working Group - 1/97 X3T10/97-112R0 Date: 1/6/97 Author: Weber/Lohmeyer [SY-97-01] Minutes of X3T10 Plenary Meeting #19

- X3T10/97-113R0Date: 1/6/97Author: G. Penokie [SY-97-01]Minutes of SCC Working Group 1/97
- X3T10/97-114R0 Date: 1/6/97 Author: B. Ham [SY-97-01] Test Results on LVD
- X3T10/97-115R0 Date: 1/6/97 Author: L. Lamers [SY-97-01] Report on SPI-2 Editing Session
- X3T10/97-116R0 Date: 1/6/97 Author: B. Ham [SY-97-01] Bus Set Delay for Domain Expanders
- X3T10/97-117R0Date: 1/6/97Author: R. Roberts [SY-97-01]MMC-2 Commands specific to CD Media Only
- X3T10/97-118R0 Date: 1/6/97 Author: R. Roberts [SY-97-01] MMC-2 ATAPI Implementation Notes
- X3T10/97-119R0 Date: 1/6/97 Author: R. Roberts [SY-97-01] MMC-2 SCSI Implementation Notes
- X3T10/97-120R0
 Date: 1/6/97
 Author: R. Roberts [SY-97-01]

 MMC-2 DVD-R and DVD-RAM
- X3T10/97-121R0Date: 1/8/97Author: D. Wallace [SY-97-01]Annex on Universal Backplane
- X3T10/97-122R0Date: 1/8/97Author: G. Penokie [SY-97-01]Addressing Model for SAM-2
- X3T10/97-123R0Date: 1/8/97Author: G. Milligan [SY-97-01]SBC X3T10 LetterBallot Comment Resolution
- X3T10/97-124R0Date: 1/8/97Author: T. Coughlan [SY-97-01]Do Read Long and Write Long have a Secure Future?
- X3T10/97-125R1Date: 1/9/97Author: E. Oetting [SY-97-01]Minutes of SCC/SMC Working Group 1/97