

Accredited Standards Committee*
X3, Information Processing Systems

Doc. No.: X3T9.2/93-176r1

Date: December 1, 1993

Project:

Ref. Doc.:

Reply to: John Lohmeyer

To: Membership of X3T9.2

From: Lawrence J. Lamers, Secretary X3T9.2
John B. Lohmeyer, Chair X3T9.2

Subject: Minutes of X3T9.2 Plenary Meeting #108
Colorado Springs, CO -- November 11, 1993

Agenda

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*Operating under the procedures of The American National Standards Institute.

X3 Secretariat, Computer and Business Equipment Manufacturers Association (CBEMA)

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- 8.18 SCSI Common Access Method -2 (CAM-2) (93-082) [Dallas]
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 - 8.20 SCSI-3 Controller Commands (SCC) (93-130) [Hagerman]
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Results of Meeting

1. Opening Remarks

John Lohmeyer, the Chair, called the meeting to order at 1:00 p.m., Thursday November 11, 1993. He thanked NCR for arranging and hosting the last X3T9.2 meeting. He expects that the January '94 meeting will most likely be our first meeting as X3T10.

John announced that the Operational Management Committee had recommended the proposed reorganization to X3. The X3 letter ballot closes 12/2/93. Assuming the letter ballot passes, the next meeting will be an organizational meeting of X3T10. Each company requesting membership needs to bring a letter stating their principal and alternate. Any company that is directly and materially affected

by the standards under development may request membership and may vote at the January meeting.

John said that the X3 Secretariat prefers receiving membership changes on the "X3 Subgroup Membership Forms" which were available on the document table. He said that people should use the X3 forms to insure the X3 Secretariat has the latest membership information. The forms should be mailed to the X3 Secretariat with a copy to John Lohmeyer.

As is customary, the people attending introduced themselves. A copy of the attendance list was circulated for attendance and corrections. Copies of the draft agenda and the recent document register were made available to those attending. Information on X3T9.2 and Mailing Subscription Forms were made available.

2. Approval of Agenda

The draft agenda was approved with the following additions:

- 9.2 SCAM (93-109r5) [Gardner]
- 10.4 Sequential Access Density Code [Lappin] (93-163)
- 10.5 GPP: Standard or Technical Report? [Milligan] ()
- 10.6 ISO CAM [Milligan] ()
- 10.7 ISO ATA [Milligan] ()

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 X3T9.2. 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 and the International Participation fees to maintain membership. These fees total \$600 per year.

The current X3T9.2 membership is 55 organizations. With the termination of four organizations (see 3.1), the X3T9.2 voting membership is now at 51 organizations. Enclosure (1) is the list of the people present at the meeting and enclosure (2) is the current X3T9.2 membership list.

3.1 Roll Call of Members in Jeopardy

The Chair said he had sent jeopardy letters to 30 people from 8 organizations for lack of meeting attendance (see 93-048r3). The letters said that their organizations had failed to attend two of the last three plenary meetings and that their membership would be terminated unless they attended this meeting. The letters also informed these people of the committee's ability to retain their membership under special circumstances in spite of their failure to attend. The organizations in jeopardy were: Berk-Tek, Inc., Bull SA, Data General Corp., Future Domain, Hirose Electric U.S.A., Molex Inc., Texas Instruments, and UNISYS.

Representatives were present from all organizations in jeopardy except:

Bull SA, Data General Corp., Texas Instruments, and Hirose Electric U.S.A. The chair noted that he had received an email from Alan Wetzal requesting that T.I.'s membership be changed to observer status.

The representatives from the four organizations were changed to observer status.

4. Approval of Minutes - September Meeting Tarrytown, NY (93-143r0)

The minutes were approved as written.

5. Document Distribution

Members who have any problems with their mailing subscription should deal directly with Katrina Gray at (202) 626-5741.

Larry Lamers requested that all documents for the next mailing must be sent so as to be received by noon on Wednesday, November 17, 1993. Documents received after this date 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 X3T9.2 meets its CBEMA document archiving requirements by including CBEMA on the mailing list, documents included in the mailing must be suitable for microfilming. This means that high-quality, single-sided originals with adequate margins and proper identification must be submitted. Document X3T9.2/92-84 R1 contains the list of requirements for submissions.

As usual, minutes are also available on the SCSI BBS (719-574-0424) and will be distributed to the SCSI Reflector E-mail list. To be added to the SCSI Reflector, send an electronic message to: scsiadm@WichitaKS.NCR.COM.

The current document register is enclosure (3).

John Lohmeyer announced that NCR had set up an FTP site for X3T9.2 draft standards and related documents: ncrinfo.ncr.com (192.127.252.6). Current directories that may be of interest are:

| | |
|--------------------------|---------------------------------|
| /pub/standards/ata/ | AT Attachment (a.k.a, IDE) |
| /pub/standards/cam/ | SCSI Common Access Method (CAM) |
| /pub/standards/pnp SCSI/ | Plug and Play SCSI |
| /pub/standards/scsi1/ | SCSI-1 (rather obsolete, now) |
| /pub/standards/scsi2/ | SCSI-2 |
| /pub/standards/scsi3/ | SCSI-3 family of standards |
| /pub/standards/x3t9.2/ | X3T9.2 committee information |

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. The last page contains the ANSI patent policy.

7. Review of Old Action Items

- 1) Jerry Marazas will distribute information regarding IEEE commenting and balloting procedures on the SCSI Reflector. **Completed the week following the meeting.**
- 2) Gary Stephens will draft a Technical Information Bulletin on reporting tape partitions. **Completed the week following the meeting.**
- 3) John Lohmeyer will take the project proposal for the SCSI-3 Controller Commands to X3T9. **Complete--X3T9 revised the project proposal and placed it on their December agenda.**

8. Subgroup and/or Project Status Reports

8.1 Project Status Summary [Lohmeyer]

John Lohmeyer provided copies of the current X3T9.2 project status summary.

8.2 SCSI-2 Status [Lamers]

SCSI-2 has passed X3 letter ballot. It now goes to ANSI's Board of Standards Review (BSR) for final approval. It should be approved by ANSI by year end.

8.3 SCSI Common Access Method (CAM) [Dallas]

Bill Dallas reported. The working group reviewed the target mode proposal that the ad hoc group had developed. The working group felt that the proposal's logic and design were good, but the text needed some work. The working group made corrections to the text and the editor hopes to have it back for review within two weeks. Once all textual changes are approved the editor will be merging the proposal into the CAM master document, with other changes suggested by the working group.

8.4 AT Attachment Status (ATA) [Finch]

ATA is at its second public review, which closes November 16, 1993.

8.5 ATA Extensions [Finch]

Steve Finch reported on recent ATA Extensions (a.k.a., ATA-2) activities. ATAPI, the 528 MB barrier, DMA issues, and download microcode are actively being addressed. The 20 MB/s issue includes interface modeling, transfer timings, and PIO flow control.

The ATA-2 document has been "torn apart" and 5 editors, rewriting for clarity, hope to have to back together by January.

8.6 SCSI-3 Architecture Model (SAM) Status [Monia]

There were several comments received from the letter ballot. Many of these were discussed during the working group meeting. The editor is working a revision of SAM that will incorporate the resolution of these comments.

Bob Snively suggested that the remaining comments be dealt with via the SCSI reflector.

The SAM forwarding letter ballot closed with 38-9-0-8. The negatives were from: Amdahl, HP, IBM, NCR, Panasonic, Storage Tech., Quantum, Sun, and Western Digital. Ballots were not received from: Hirose, TI, Toshiba, UNISYS, and Zenith. Late ballots were received from Maxoptix, National Semiconductor, and Seagate. The late ballots were counted as "no response" and the late organizations will not be placed in letter ballot jeopardy.

While the forwarding motion technically passed, attempts must be made to resolve the comments. It is unlikely that the comments will be resolved before the reorganization, so it is likely that the revised SAM document will be dealt with by X3T10.

8.7 SCSI-3 Parallel Interface (SPI) Status [Lamers]

The SPI first public review is October 29, 1993 to February 26, 1994.

8.8 SCSI-3 Interlocked Protocol (SIP) Status [Lamers]

A editor session was planned for December 6, 1993 in San Diego.

8.9 SCSI-3 Generic Packetized Protocol (GPP) Status [Stephens]

Gary Stephens planned to incorporate responses to the letter ballot comments in the next revision. He plans to have the revision available for the next mailing.

The GPP forwarding letter ballot closed with 41-6-0-8. Two yes ballots (Amdahl and Unitrode) included comments. The negatives were from: Digital, HP, IBM, NCR, Quantum, and Sun. Ballots were not received from: Hirose, TI, Toshiba, UNISYS, and Zenith. Late ballots were received from Maxoptix, National Semiconductor, and Seagate. The late ballots were counted as "no response" and the late organizations will not be placed in letter ballot jeopardy.

While the forwarding motion technically passed, attempts must be made to resolve the comments. It is unlikely that the comments will be resolved before the reorganization, so it is likely that the revised GPP document will be dealt with by X3T10.

8.10 SCSI-3 Serial Bus Protocol (SBP) Status [Marazas]

Larry Lamers reported that several comments were received and responses will be discussed over the SCSI reflector.

The SBP forwarding letter ballot closed with 43-3-0-9. Two yes ballots (IBM and Western Digital) included comments. The negatives were from: Digital, NCR, and Quantum. Ballots were not received from: Hirose, Honda (no vote marked), TI, Toshiba, UNISYS, and Zenith. Late ballots were received from Maxoptix, National Semiconductor, and Seagate. The late ballots were counted as "no response" and the late organizations will not be placed in letter ballot jeopardy.

While the forwarding motion technically passed, attempts must be made to resolve the comments. It is unlikely that the comments will be resolved before the reorganization, so it is likely that the revised SBP document will be dealt with by X3T10.

8.11 SCSI-3 Fiber Channel Protocol (FCP) Status [Snively]

Bob Snively reported that several letter ballot comments were received. The editorial comments will be included in revision 7a. The technical comments will be addressed through the SCSI reflector. As many as these as possible will be incorporated in revision 7a.

The FCP forwarding letter ballot closed with 44-2-0-9. Four yes ballots (Amdahl, HP, IBM and Sun) included comments. The negatives were from: NCR, and Quantum. Ballots were not received from: Hirose, Honda (no vote marked), TI, Toshiba, UNISYS, and Zenith. Late ballots were received from Maxoptix, National Semiconductor, and Seagate. The late ballots were counted as "no response" and the late organizations will not be placed in letter ballot jeopardy.

While the forwarding motion technically passed, attempts must be made to resolve the comments. It is unlikely that the comments will be resolved before the reorganization, so it is likely that the revised FCP document will be dealt with by X3T10.

8.12 SCSI-3 Primary Commands (SPC) Status [Weber]

Ralph Weber reported that there was no progress on SPC since the last meeting.

George Penokie noted that 92-184r5 has an error. The BFh code should be 17h. A revision 6 of 92-184 will be in the next mailing.

8.13 SCSI-3 Block Commands (SBC) [open]

John asked for volunteers to edit this document.

8.14 SCSI-3 Stream Commands (SSC) [open]

Gary Stephens reported that he is no longer able to act as editor on this project.

8.15 SCSI-3 Graphics Commands (SGC) [open]

Gary Stephens reported that he is no longer able to act as editor on this project.

8.16 SCSI-3 Medium Changer Commands (SMC) [open]

Gary Stephens reported that he is no longer able to act as editor on this project.

8.17 Directly-Addressable Device Interface (DADI) []

No report.

8.18 SCSI Common Access Method -2 (CAM-2) (93-082) [Dallas]

Bill Dallas reported. No work has been done on CAM-2 until CAM-1 is back out for public review.

8.19 SCSI-3 Serial Storage Protocol (SSP) [Scheible]

The SSA-UIG users group approved a draft. A meeting is scheduled for Thursday morning during the January plenary week for the SSP project.

8.20 SCSI-3 Controller Commands (SCC) (93-130) [Hagerman]

John Lohmeyer reported that the project proposal is at X3 for a letter ballot. He expects approval in December.

8.21 Replacement of ANSI X3.80-1988, Interfaces Between Flexible Disk Cartridges and Their Host Controllers, with ISO 9315:1989.

In April '93, X3T9.2 voted to recommend that simultaneous withdrawal of X3.80-1988 and adoption of ISO 9315:1989 as an ANSI standard. X3T9 accepted this recommendation and voted to make the same recommendation to X3. The public review period began October 15, 1993 and closes February 13, 1994.

8.22 RAID Study Group (93-160) [Penokie]

George Penokie reported. See X3T9.2/93-183 for details. The RAID study group will hold co-located meetings with the RAID Advisory Board starting in December.

9. Old Business

9.1 Technical Information Bulletins

Gary Stephens had prepared a TIB on the tape partition issue. Folks are advised to review it. It is anticipated that a forwarding motion will be taken as soon as SCSI-2 is approved.

9.2 SCAM (93-109r5) [Gardner]

Edward Gardner reported that document 93-173 contains several clarifications to some less-well understood points in SCAM (93-109 r5). Particularly, all SCAM devices (sourcing data, receiving data, or deferring) must continue to drive the handshaking signals (DB5, DB6, and DB7). Also, he made some suggestions on software wired-OR de-glitching. These clarifications are not technical changes, just points that are confusing some people.

Gene Milligan moved and Bob Snively that a standing rule be established that any further modifications to 93-109r5 require a 2/3rds majority vote.
The motion passed 20:3:0.

10. New Business

10.1 Review of new documents

None.

10.2 Plug and Play SCSI

John Lohmeyer mentioned that this is a recent industry development. A public meeting to review PnP SCSI is planned for Friday, November 12, 1993.

10.3 ATA Packet Interface (ATAPI)

John Lohmeyer mentioned that another industry development is occurring that will develop a protocol to transport SCSI CDBs over the ATA interface. A Multi-Media command set is also being worked on. Project proposals have been prepared and will be on the agenda for the January meeting.

10.4 Sequential Access Density Code [Lappin] (93-163)

Ed Lappin requested the assignment of a density code for sequential devices.
Steve Finch moved and Erich Oetting seconded that 93-163 be accepted for incorporation in SCSI-3.

The motion passed 23:0.

10.5 GPP: Standard or Technical Report? [Milligan] ()

Whereas having two I/O protocols for each SCSI physical interconnect is a problem for the industry although there may be some niche applications where GPP is useful, Gene Milligan moved and Ed Gardner seconded that X3T9.2 take the appropriate steps to convert it from a dpANS and to publish

it as a technical report.

Gary Stephens stated that GPP is a result of the committees wishes from 1990. He stated that GPP is the only long haul protocol that we have. Ed Gardner pointed out that GPP currently does not deal with the physical layers that are long haul.

Bob Snively stated a disagreement over the performance difference between GPP and FCP.

Jeff Williams stated that HP voted no on GPP because they do not want to have to support two protocols.

Dal Allan stated that GPP provides a sort of universal transport that may be necessary as the industry transitions to serial interfaces. There is a need to connect the SCSI islands that have different physical interfaces and GPP provides a way to do this.

Ed Gardner stated that there are numerous problems beyond what GPP solves; many of which are not yet known. GPP is valuable as a technical report but is not adequate as a standard.

Larry Lamers pointed out that if a constituency wants to develop a standard and they successfully do that, then it should be allowed to be a standard. The committee should not make marketing decisions.

Steve Finch moved to defer consideration. Gene Milligan seconded the motion.
The motion passed 23:3:0.

10.6 ISO CAM [Milligan] ()

The proposed New Work Item for ISO CAM failed because an insufficient number of countries stated they would participate in its development.

Dal Allan moved and Gene Milligan seconded that X3T9.2 conclude that in light of the ISO vote that pursuit of a New Work Item for CAM be dropped.
The motion passed 18:1.

10.7 ISO ATA [Milligan] ()

The proposed New Work Item for ISO ATA failed because an insufficient number of countries stated they would participate in its development.

Gene Milligan moved and Dal Allan seconded that X3T9.2 conclude that in light of the ISO vote that pursuit of a New Work Item for ATA be dropped.
The motion passed 20:2.

11. Liaison Reports

11.1 ISO [Milligan]

Gene Milligan, the X3T9 International Representative, provided the following electronic report:

ISO Report
November 1993

Numerous X3T9 projects were out on a JTC 1 letter ballot for the new work items. Voting results are not yet available on most of the

items. However results are back on two of the items being worked by X3T9.2.

The ATA NWI failed by a vote of 16 Yes, 1 No, 1 Abstention; 16 Yes, 1 No, 1 Abstention; 4 Yes, 13 No, 1 Abstentions; 3 Yes, 14 No, 1 Abstention; 1 Yes, 16 No, and 1 Abstention; 1 Yes, 16 No, and 1 Abstention; and 1 Yes, 16 No, and 1 Abstention.

The CAM NWI failed by a vote of 16 Yes, 1 No, 1 Abstention; 17 Yes, 0 No, 1 Abstention; 4 Yes, 13 No, 1 Abstentions; 3 Yes, 14 No, 1 Abstention; 1 Yes, 15 No, and 1 Abstention; 1 Yes, 16 No, and 1 Abstention; and 1 Yes, 16 No, and 1 Abstention.

At the last meeting of the SC 25/WG 4 TAG, the IR moved that X3T9 request X3 approval of the formation of a joint TAG to replace the X3T9 Tag upon the reorganization of X3T9 and that an organizational or Ad Hoc meeting, as appropriate, be scheduled for 2 PM, Friday 14 January in the X3T9.2 meeting room. The motion failed for lack of a second. The IR thinks the net impact of this is that SC 25/WG 4 TAG business will need to be addressed by the SC 25 TAG. This will result in Home Electronics experts being brought into the processing of international versions of our standards. It may be possible to recover from this pocket veto at some subsequent time during 1994. The SC 25 TAG only meets once or twice a year.

SC 25 distributed ISO/TC 171 N 321 which was a proposal for a new work item which closed 8/31/93 for the implementation of small computer systems interface (SCSI) 2 for document scanners. The proposal cited AIIM 92/387 as a relevant document for consideration. The proposal is to be discussed 13-21 November 1992 (SIC).

John Lohmeyer accepted an action item to contact Marilyn Courtot regarding liaison on AIIM projects.

11.2 X3T9.7 (SSA) Liaison Report [Scheible]

John Lohmeyer reported that the Serial Storage Protocol (SSP) project proposal was edited slightly by X3T9 at their October meeting and forwarded to OMC.

SSA-PH has been accepted as a working draft by X3T9.7.

11.3 X3T9.3 Liaison Report [Cummings]

Roger Cummings reported. He stated a summary document of the Fibre Channel documents status will be provided for this X3T9.2 mailing and future X3T10 mailings.

11.4 Small Form Factor Industry Group [Allan]

Dal Allan reported on the recent SFF activities.

11.4.1 Revised unitized connector (93-112r1)

Document 93-112r1 was distributed in the last mailing and is believed to be consistent with the SFF document on the same subject.

11.5 IEEE P1394 [Marazas]

Larry Lamers reported. P1394 rev 6.4 is available. The bus management portion of the document is now in reasonable shape. The next meeting is December 7-8, 1993 at the Catamaran Hotel in San Diego, CA.

11.6 IT8 [Lohmeyer]

No report.

11.7 IEEE P1285 Status [Pak]

Dennis Pak sent a written liaison report. See X3T9.2/93-190r0 for details.

11.8 PCMCIA Report

No report.

11.9 AIIM C21 [Podio]

No report.

12. Review of Action Items

- 1) John Lohmeyer will contact Marilyn Courtot regarding AIIM activity.
- 2) John Lohmeyer will contact Fernando Podia regarding liaison reports.

13. Meeting Schedule

If there is another plenary meeting of X3T9.2, it will occur January 13-14, 1994 at the Catamaran Hotel (Tel: 619-488-1081) in San Diego, California, hosted by Vitro. It is more likely that this meeting will be the organizational meeting of X3T10. The meeting will begin at 1:00 pm on Thursday and at 8:30 am (if necessary) on Friday.

The meeting schedule for the week of January 10-14 in San Diego is:

| Day & Date | Meeting | Times |
|----------------|-----------------------------------|--------------------|
| Sunday 1/9 | General Editing Session | 1:00p - 5:00p (*) |
| Monday 1/10 | Small Form Factor Committee | 9:00a - 1:00p |
| | ATA Working Group | 2:00p - 8:00p (*) |
| | CAM Working Group | 9:00a - 5:00p (*) |
| | FC-Arbitrated Loop | 5:00p - 8:00p |
| | P1394 Connector | 1:00p - 6:00p |
| Tuesday 1/11 | SSA UIG | 9:00a - 1:00p |
| | X3T9.7 (SSA) | 2:00p - 5:00p |
| | SCSI-3 General Working Group | 9:00a - 8:00p (*) |
| | RAID Study Group | 9:00p - 5:00p (*) |
| | Fibre Channel EP/IG Work Group | 9:00a - 5:00p |
| | Fibre Channel Association | 5:00p - 8:00p |
| Wednesday 1/12 | SCSI General Working Group | 9:00a - 5:00p (*) |
| | Fibre Channel EP & Fabric Serv WG | 9:00p - 5:00p |
| | FC-LE Edit | 5:00p - 8:00p |
| | FC - RT/Navy | 5:00p - 8:00p |
| Thursday 1/13 | SSP (SSA protocol) WG | 9:00a - 12:00n (*) |
| | X3T9.2 (or X3T10) Plenary Meeting | 1:00p - 8:00p (*) |
| | Mgt Info Bases (MIBS) | 9:00a - 5:00p |
| | IPI-3 | 8:30a - 2:00p |
| Friday 1/14 | X3T9.2 (or X3T10) Plenary Meeting | 8:30a - 2:00p (*) |

(*) - Indicates an X3T9.2-related meeting. All others are shown for reference only and may be changed by other groups without notice.

Several other X3T9.2 events are also planned:

| Event | Day/Date | Time | Location/contact |
|---------------------|----------|---------|-------------------|
| SIP Editing Session | Mon 12/6 | 9a - 5p | San Diego/Lamers |
| SBP WG | TBD | | ?/Marazas |
| FCP WG | TBD | | ?/Snively |
| RAID SG | Tue 12/7 | 9a - 5p | San Diego/Penokie |
| ATA WG | Dec ? | | ?/Finch |
| ATA WG | Jan ? | | ?/Finch |

For more information about X3T9.2 activities, please contact the following people:

| Activity | Contact | Telephone/Email |
|-------------------|----------------|---|
| CAM Working Group | Bill Dallas | (603) 881-2508 dallas@wasted.enet.dec.com |
| ATA Working Group | Steve Finch | (714) 573-6808 5723283@mcimail.com |
| GPP Working Group | Gary Stephens | (602) 799-2246 gstephen@tucvm2.vnet.ibm.com |
| RAID Study Group | George Penokie | (507) 253-5208 gop@rchvmp3.vnet.ibm.com |
| SAM Working Group | Charles Monia | (508) 841-6757 monia@starch.enet.dec.com |
| SBP Working Group | Jerry Marazas | (407) 982-4423 marazas@bcrvm2.vnet.ibm.com |
| SPI Contact | Larry Lamers | (408) 432-3889 71540.2756@compuserve.com |
| SIP Contact | Larry Lamers | (408) 432-3889 71540.2756@compuserve.com |
| SCAM Contact | Ed Gardner | (719) 548-2247 gardner@ssag.enet.dec.com |
| Other Activities | John Lohmeyer | (719) 573-3362 john.lohmeyer@ftcollinsco.ncr.com |

The long-term X3T9.2 meeting week schedule is:

| Date | Location | Host/Comments |
|-----------------|---------------------|---|
| Jan 10-14, 1994 | San Diego, CA | Vitro |
| Mar 14-18, 1994 | Newport Beach, CA | Emulex |
| May 16-20, 1994 | Harrisburg, PA | AMP |
| Jul 18-22, 1994 | Manchester, NH | DEC |
| Sep 12-16, 1994 | Toronto, Canada | Canstar (Location may change!) |
| Nov 7-11, 1994 | Southern California | Western Digital |

13.1 Authorization of Working Group Meetings

John noted that the working group meetings are required to operate under the same voting procedures as does X3T9.2 (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 is automatically deferred to the plenary group.

Ralph Weber moved and Skip Jones seconded that X3T9.2 authorize the X3T9.2-related meetings and events in the list under agenda item 12. The motion passed 25:1:2. Ed Gardner voted no because the chairman's stated intent to dedicate Tuesday to letter ballot comment review was not included in the authorized agenda.

14. Adjournment

The meeting was adjourned at 5:15 p.m. on Thursday November 11, 1993.

Meeting Attenders -- Enclosure (1)

| Name | S | Organization | Electronic Mail Address |
|----------------------------|---|-------------------------------|------------------------------|
| Mr. Rick Heidick | A | 3M Company | |
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Minutes of X3T9.2 Plenary Meeting #108 in Colorado Springs, CO

X3T9.2/93-176r1

Nov 24, 1993 - X3T9.2 Document Register - Enclosure (3)

X3T9.2/93-001R0 Date: 3/12/93 Author: J. Lohmeyer [3/15/93]
 Desc: X3T9.2 Annual Report
 Res:

X3T9.2/93-002R0 Date: 1/6/93 Author: G. Penokie [3/15/93]
 Desc: Summary of SCSI Disk Array Items submitted to the RAID Study Group
 Res:

X3T9.2/93-003R0 Date: 2/13/93 Author: G. Penokie []
 Desc: SCSI Disk Array Model
 Res:

X3T9.2/93-003R1 Date: 2/13/93 Author: G. Penokie []
 Desc: SCSI Disk Array Model
 Res:

X3T9.2/93-003R3 Date: 3/21/93 Author: G. Penokie [3/15/93]
 Desc: SCSI Disk Array Model
 Res:

X3T9.2/93-003R4 Date: 4/15/93 Author: G. Penokie []
 Desc: SCSI Disk Array Model
 Res:

X3T9.2/93-003R5 Date: 4/15/93 Author: G. Penokie [6/15/93]
 Desc: SCSI Disk Array Model
 Res:

X3T9.2/93-003R6 Date: 6/13/93 Author: G. Penokie []
 Desc: SCSI Disk Array Model
 Res:

X3T9.2/93-003R7 Date: 7/6/93 Author: G. Penokie [8/15/93]
 Desc: SCSI Disk Array Model
 Res:

X3T9.2/93-003R8 Date: 8/5/93 Author: G. Penokie []
 Desc: SCSI Disk Array Model
 Res:

X3T9.2/93-003R9 Date: 8/28/93 Author: G. Penokie [10/15/93]
 Desc: SCSI Disk Array Model
 Res:

X3T9.2/93-004R0 Date: 1/11/93 Author: S. Finch [3/15/93]
 Desc: Minutes of ATA Extensions Working Group - Jan '93
 Res:

X3T9.2/93-005R0 Date: Author: G. Penokie [3/15/93]
 Desc: Minutes of RAID Study Group - Jan '93
 Res:

X3T9.2/93-006R0 Date: 1/12/93 Author: J. Lohmeyer [3/15/93]
 Desc: Minutes of X3T9.2 General Working Group - Jan '93
 Res:

X3T9.2/93-007R0 Date: 1/11/93 Author: J. McGrath [3/15/93]
 Desc: Support of Local Bus in ATA
 Res:

X3T9.2/93-008R0 Date: 10/21/92 Author: D. Kummer [3/15/93]
 Desc: Local Bus IDE Modes
 Res:

X3T9.2/93-009R0 Date: Author: S. Finch []
 Desc: ATA Extensions draft document
 Res:

X3T9.2/93-010R0 Date: 1/11/93 Author: R. Roberts [3/15/93]
 Desc: "What does the Customer Want???" presentation
 Res:

X3T9.2/93-011R0 Date: 1/4/93 Author: S. Todd [3/15/93]
 Desc: Dual Array Controller issues
 Res:

X3T9.2/93-012R0 Date: 1/5/93 Author: G. Houlder [3/15/93]
 Desc: Clarification of TTD, CIOP
 Res:

X3T9.2/93-013R0 Date: 1/4/93 Author: P. Entzel [3/15/93]
 Desc: Request for two SCSI-3 (SSC) Density Codes
 Res: Gary Stephens to assign codes

X3T9.2/93-014R0 Date: 1/12/93 Author: G. Marazas [3/15/93]
 Desc: Serial Bus Protocol Fundamentals
 Res:

X3T9.2/93-015R0 Date: Author: B. Dallas [3/15/93]
 Desc: Minutes of CAM-2 Study Group - Jan '93
 Res:

X3T9.2/93-016R0 Date: 1/21/93 Author: R. Weber [3/15/93]
 Desc: Why SCSI-3 needs ABORT (all initiator tasks)
 Res:

X3T9.2/93-017R0 Date: 1/21/93 Author: J. Lohmeyer [3/15/93]
 Desc: X3T9.2 Meeting Schedule
 Res:

X3T9.2/93-018R0 Date: 1/25/93 Author: S. Finch [3/15/93]
 Desc: ATA Extensions-Specifications of Electrical Characteristics
 Res:

X3T9.2/93-019R0 Date: 2/15/93 Author: L. Lamers [3/15/93]
 Desc: X3T9.2 Procedure on Electronic Notification
 Res:

X3T9.2/93-020R0 Date: 2/15/93 Author: J. Williams [3/15/93]
 Desc: New Optical Memory Density Codes
 Res:

X3T9.2/93-020R1 Date: 2/22/93 Author: J. Williams [3/15/93]
 Desc: New Optical Memory Density Codes
 Res: Accepted for SCSI-3 in 4/93.

X3T9.2/93-021R0 Date: 2/11/93 Author: R. Jesup [3/15/93]
 Desc: Response to Public Review Comment on CAM
 Res:

X3T9.2/93-022R0 Date: 1/28/93 Author: T. Hanan [3/15/93]
 Desc: Minutes of SFF SSWG on Local Bus ATA
 Res:

X3T9.2/93-023R0 Date: 2/8/93 Author: L. Barnes [3/15/93]
 Desc: Report on PCMCIA SCSI
 Res:

X3T9.2/93-024R0 Date: 2/8/93 Author: J. Scheible [3/15/93]
 Desc: SSA Liason Report
 Res:

X3T9.2/93-025R0 Date: 2/10/93 Author: V. Novak [3/15/93]
 Desc: Status of FCP Revision 003
 Res:

X3T9.2/93-026R0 Date: 2/15/93 Author: D. Pak [3/15/93]
 Desc: P1285 Liason Report
 Res:

X3T9.2/93-027R0 Date: 1/28/93 Author: G. Leonhardt [3/15/93]
 Desc: Explanation of No Vote on ATA
 Res:

X3T9.2/93-028R0 Date: 2/12/93 Author: J. Chen [3/15/93]
 Desc: Comment on ATA letter ballot
 Res:

X3T9.2/93-029R0 Date: 2/15/93 Author: Lamers/Penokie []
 Desc: Minutes of RAID Study Group - Feb '93
 Res:

X3T9.2/93-029R1 Date: 2/25/93 Author: Lamers/Penokie [3/15/93]
 Desc: Minutes of RAID Study Group - Feb '93
 Res:

X3T9.2/93-030R0 Date: 2/12/93 Author: B. Dallas [3/15/93]
 Desc: SCSI RAID Problems Presented to the Software Developer
 Res:

X3T9.2/93-031R1 Date: 2/16/93 Author: B. Spence [3/15/93]
 Desc: Corrections and Additions in SPI Timing
 Res:

X3T9.2/93-032R0 Date: 2/16/93 Author: G. Penokie []
 Desc: Number of Blocks Field Size Limitation
 Res:

X3T9.2/93-032R1 Date: 3/22/93 Author: G. Penokie [3/15/93]
 Desc: Number of Blocks Field Size Limitation
 Res: Accepted for SCSI-3 in 4/93.

X3T9.2/93-033R0 Date: 2/16/93 Author: Lamers/Lohmeyer [3/15/93]
 Desc: Minutes of X3T9.2 Plenary Meeting #104
 Res:

X3T9.2/93-034R0 Date: 2/17/93 Author: J. Lohmeyer [3/15/93]
 Desc: SDP Message Clarification
 Res:

X3T9.2/93-035R0 Date: 2/21/93 Author: S. Smyers [3/15/93]
 Desc: Minutes of SBP Working Group - Feb '93
 Res:

X3T9.2/93-036R0 Date: 2/17/93 Author: T. Motoyama [3/15/93]
 Desc: Scanner Window Descriptor Bytes Proposal
 Res:

X3T9.2/93-036R1 Date: 7/22/93 Author: T. Motoyama [8/15/93]
 Desc: Scanner Window Descriptor Bytes Proposal
 Res:

X3T9.2/93-037R0 Date: 2/27/93 Author: G. Penokie []
 Desc: When to issue SDTR after WDTR
 Res:

X3T9.2/93-037R1 Date: 3/22/93 Author: G. Penokie [3/15/93]
 Desc: When to issue SDTR after WDTR
 Res:

X3T9.2/93-037R2 Date: 5/5/93 Author: G. Penokie [6/15/93]
 Desc: When to issue SDTR after WDTR
 Res:

X3T9.2/93-037R3 Date: 6/13/93 Author: G. Penokie [8/15/93]
 Desc: When to issue SDTR after WDTR
 Res:

X3T9.2/93-038R0 Date: 3/20/93 Author: R. Weber [3/15/93]
 Desc: Third-party Commands in SCSI-3 SPC
 Res:

X3T9.2/93-038R1 Date: 4/15/93 Author: R. Weber [6/15/93]
 Desc: Third-party Commands in SCSI-3 SPC
 Res:

X3T9.2/93-039R0 Date: 3/16/93 Author: Lamers/Lohmeyer [3/15/93]
 Desc: Minutes of X3T9.2 General Working Group - Mar '93
 Res:

X3T9.2/93-039R1 Date: 3/25/93 Author: Lamers/Lohmeyer [5/15/93]
 Desc: Minutes of X3T9.2 General Working Group - Mar '93
 Res:

X3T9.2/93-040R0 Date: 3/2/93 Author: E. Gardner [3/15/93]
 Desc: Minutes of SBP Working Group - Mar '93
 Res:

X3T9.2/93-041R0 Date: Author: G. Houlder [3/15/93]
 Desc: SCSI-3 Changes for Dual Port Feature
 Res:

X3T9.2/93-041R1 Date: Author: G. Houlder [3/15/93]
 Desc: SCSI-3 Changes for Dual Port Feature
 Res:

X3T9.2/93-041R2 Date: 4/20/93 Author: G. Houlder [6/15/93]
 Desc: SCSI-3 Changes for Dual Port Feature
 Res: Accepted for SCSI-3 in 4/93.

X3T9.2/93-042R0 Date: 3/17/93 Author: E. Gardner []
 Desc: SBP Command Block CDB Alignment
 Res:

X3T9.2/93-042R1 Date: 3/17/93 Author: E. Gardner [3/15/93]
 Desc: SBP Command Block CDB Alignment
 Res:

X3T9.2/93-043R0 Date: 3/17/93 Author: N. Hayes [3/15/93]
 Desc: SQRL SCSI Queued Reference List
 Res:

X3T9.2/93-044R0 Date: 3/18/93 Author: R. Roberts [3/15/93]
 Desc: Presentation on BASE-1
 Res:

X3T9.2/93-045R0 Date: 3/18/93 Author: S. Finch [3/15/93]
 Desc: Minutes of the Disk Drive Working Group - Mar '93
 Res:

X3T9.2/93-046R0 Date: 2/24/93 Author: T. Hanan [3/15/93]
 Desc: Minutes of SFF SSWG on Local Bus ATA
 Res:

X3T9.2/93-047R0 Date: 3/19/93 Author: J. Lohmeyer [3/15/93]
 Desc: Minutes of CAM Working Group - Mar '93
 Res:

X3T9.2/93-048R0 Date: 3/21/93 Author: J. Lohmeyer [3/15/93]
 Desc: Jeopardy Letter for 1993
 Res:

X3T9.2/93-048R1 Date: 6/17/93 Author: J. Lohmeyer [8/15/93]
 Desc: Jeopardy Letter for 1993
 Res:

X3T9.2/93-048R2 Date: 7/30/93 Author: J. Lohmeyer [8/15/93]
 Desc: Jeopardy Letter for 1993
 Res:

X3T9.2/93-048R3 Date: 9/24/93 Author: J. Lohmeyer [10/15/93]
 Desc: Jeopardy Letter for 1993
 Res:

X3T9.2/93-049R0 Date: 3/22/93 Author: L. Lamers [3/15/93]
 Desc: Minutes of the RAID Study Group - Mar '93
 Res:

X3T9.2/93-050R0 Date: 3/22/93 Author: Finch/Allan [3/15/93]
 Desc: Project Proposal for ATA-2
 Res:

X3T9.2/93-051R0 Date: 1/6/93 Author: I. Larsen [3/15/93]
 Desc: Asynch transfer question & reply
 Res:

X3T9.2/93-052R0 Date: 1/14/93 Author: K. Gingerich [3/15/93]
 Desc: Suggested Changes to Fig 8 in SPI
 Res:

X3T9.2/93-053R0 Date: 1/31/93 Author: J. Cohen [3/15/93]
 Desc: Quotation on SCSI-2 edit
 Res:

X3T9.2/93-054R0 Date: 1/31/93 Author: J. Cohen [3/15/93]
 Desc: Quotation on ATA edit
 Res:

X3T9.2/93-055R0 Date: 1/31/93 Author: J. Cohen [3/15/93]
 Desc: Quotation on CAM edit
 Res:

X3T9.2/93-056R0 Date: 3/12/93 Author: C. Wozniak [3/15/93]
 Desc: Copyright fo Single Connector Attachment Document
 Res:

X3T9.2/93-057R0 Date: 11/9/92 Author: R. Snively [3/15/93]
 Desc: Single Connector Attachment for Small SCSI Disk Drives
 Res:

X3T9.2/93-058R0 Date: 1/28/93 Author: R. Whalen [3/15/93]
 Desc: SIMport Specification
 Res:

X3T9.2/93-059R0 Date: 4/21/93 Author: L. Lamers [6/15/93]
 Desc: ATA Rev 4 Errata
 Res:

X3T9.2/93-060R0 Date: 4/22/93 Author: E. Gardner [6/15/93]
 Desc: Minutes of SBP Working Group - Apr '93
 Res:

X3T9.2/93-061R0 Date: 4/22/93 Author: J. Scheible [6/15/93]
 Desc: Project Proposal for SCSI-3 Serial Storage Protocol (SSP)
 Res:

X3T9.2/93-061R1 Date: 8/19/93 Author: J. Scheible [10/15/93]
 Desc: Project Proposal for SCSI-3 Serial Storage Protocol (SSP)
 Res:

X3T9.2/93-062R0 Date: 3/29/93 Author: S. Washburn [10/15/93]
 Desc: New Code for QIC 555 Tape - mini cartridge
 Res:

X3T9.2/93-063R0 Date: 3/29/93 Author: R. Weber []
 Desc: Disposition of COPY Function Codes in 90-048r7
 Res:

X3T9.2/93-063R1 Date: 4/20/93 Author: R. Weber [6/15/93]
 Desc: Disposition of COPY Function Codes in 90-048r7
 Res: Accepted for SCSI-3 in 4/93

X3T9.2/93-064R0 Date: 3/30/93 Author: R. Weber [6/15/93]
 Desc: Disposition of ASC/ASCQ tag number in X3T9.2/92-141R5
 Res:

X3T9.2/93-065R0 Date: 4/19/93 Author: J. Frazier [6/15/93]
 Desc: CLearing an ACA in SIP
 Res:

X3T9.2/93-066R0 Date: 4/9/93 Author: R. Weber [6/15/93]
 Desc: ASC ASCQ Sense Codes for SCSI-3
 Res:

X3T9.2/93-067R0 Date: 3/22/93 Author: Lynn Barra [6/15/93]
 Desc: Follow-Up to X3LB 2189
 Res: CAM-2 LB results 21-0-1-9; 990D

X3T9.2/93-068R0 Date: 3/22/93 Author: Lynn Barra [6/15/93]
 Desc: Follow-up to X3LB 2190
 Res:

X3T9.2/93-069R0 Date: 3/22/93 Author: Lynn Barra [6/15/93]
 Desc: Follow-up to X3LB 2191
 Res:

X3T9.2/93-070R0 Date: 4/13/93 Author: G. Anjargoli [6/15/93]
 Desc: Revision to Description of Partion Size in SCSI-2
 Res:

X3T9.2/93-071R0 Date: 4/16/93 Author: G. Penokie []
 Desc: Isochronous Queue Tagsk
 Res:

X3T9.2/93-071R1 Date: 5/5/93 Author: G. Penokie [6/15/93]
 Desc: Isochronous Queue Tagsk
 Res:

X3T9.2/93-071R2 Date: 6/13/93 Author: G. Penokie [8/15/93]
 Desc: Isochronous Queue Tag
 Res:

X3T9.2/93-072R0 Date: 4/21/93 Author: Lamers/Lohmeyer [6/15/93]
 Desc: Minutes of X3T9.2 Plenary Meeting #105
 Res:

X3T9.2/93-072R1 Date: 7/23/93 Author: Lamers/Lohmeyer [6/15/93]
 Desc: Minutes of X3T9.2 Plenary Meeting #105
 Res: changed Motoyama to Satwinder Mangat

X3T9.2/93-073R0 Date: 4/13/93 Author: J. Scheible [6/15/93]
 Desc: SSA Liason Report
 Res:

X3T9.2/93-074R0 Date: 4/19/93 Author: J. Lohmeyer [6/15/93]
 Desc: Letter to PCMCIA RE Schedules
 Res:

X3T9.2/93-075R0 Date: 4/19/93 Author: Penokie/Lamers [6/15/93]
 Desc: Minutes of the X3T9.2 RAID Study Group - Apr '93
 Res:

X3T9.2/93-076R0 Date: 5/20/93 Author: Lamers/Penokie [6/15/93]
 Desc: Minutes of RAID Study Group - May '93
 Res:

X3T9.2/93-077R0 Date: 4/20/93 Author: G. Milligan [6/15/93]
 Desc: Conflict between CORRECT and DCR bits
 Res:

X3T9.2/93-078R0 Date: 4/20/93 Author: J. Lohmeyer [6/15/93]
 Desc: Letter to Authorize Edit Expenditures
 Res:

X3T9.2/93-079R0 Date: 4/19/93 Author: D. Pak [6/15/93]
 Desc: P1285 Liaison Report for April 1993
 Res:

X3T9.2/93-080R0 Date: 4/13/93 Author: R. Snively [6/15/93]
 Desc: SCSI-3 FCP Change Report
 Res:

X3T9.2/93-081R0 Date: 4/22/93 Author: J. Stai [6/15/93]
 Desc: Comments on SPI Rev 12
 Res:

X3T9.2/93-082R0 Date: 4/23/93 Author: B. Dallas [6/15/93]
 Desc: Minutes of CAM Working Group - Apr '93
 Res:

X3T9.2/93-083R0 Date: 4/26/93 Author: D. Allan [6/15/93]
 Desc: Information on Email
 Res:

X3T9.2/93-084R0 Date: 4/26/93 Author: S. Smyers [6/15/93]
 Desc: Minutes of SBP Working Group - Apr '93
 Res:

X3T9.2/93-085R0 Date: 4/28/93 Author: J. Lohmeyer [6/15/93]
 Desc: Letter to George Anjargoli on Tape Issues
 Res:

X3T9.2/93-086R0 Date: 4/30/93 Author: L. Lamers [6/15/93]
 Desc: Minutes of ATA Working Group - Apr '93
 Res:

X3T9.2/93-087R0 Date: 5/3/93 Author: G. Watson [6/15/93]
 Desc: RAID Issues from TRIMM's Perspective
 Res:

X3T9.2/93-088R0 Date: 5/10/93 Author: E. Gardner [6/15/93]
 Desc: Dealing with SBP Target Resets
 Res:

X3T9.2/93-089R0 Date: 5/14/93 Author: N. Harris [6/15/93]
 Desc: SCSI-3 Wide Bus Parity Handling Considerations
 Res:

X3T9.2/93-090R0 Date: 5/17/93 Author: B. Spence [6/15/93]
 Desc: Proposal for Recouping Seemingly Lost Ground
 Res:

X3T9.2/93-091R0 Date: 5/18/93 Author: D. Allan [6/15/93]
 Desc: 1994 Calendar
 Res:

X3T9.2/93-092R0 Date: 5/18/93 Author: Lamers/Lohmeyer [6/15/93]
 Desc: Minutes of X3T9.2 General Working Group - May '93
 Res:

X3T9.2/93-093R0 Date: 5/4/93 Author: R. Bellino [6/15/93]
 Desc: Cable for PCMCIA-SCSI Applications
 Res:

X3T9.2/93-094R0 Date: 5/12/93 Author: G. Frazier [6/15/93]
 Desc: Setup and hold timings in SPI
 Res:

X3T9.2/93-095R0 Date: 5/19/93 Author: J. McGrath [6/15/93]
 Desc: Son of SPASTIC
 Res:

X3T9.2/93-096R0 Date: 5/18/93 Author: M. Freeman [6/15/93]
 Desc: Liason Report on P1285
 Res:

X3T9.2/93-097R0 Date: 5/17/93 Author: R. Snively [6/15/93]
 Desc: Presentation on FCP rev 4 changes
 Res:

X3T9.2/93-098R0 Date: 5/17/93 Author: S. Smyers [6/15/93]
 Desc: Minutes of SBP Working Group - May 6-7, '93
 Res:

X3T9.2/93-099R0 Date: 5/20/93 Author: S. Smyers [6/15/93]
 Desc: Minutes of SBP Working Group - May 20, '93
 Res:

X3T9.2/93-100R0 Date: Author: L. Lamers [6/15/93]
 Desc: Minutes of Disk Drive Working Group - May '93
 Res:

X3T9.2/93-101R0 Date: 5/26/93 Author: J. Lohmeyer [6/15/93]
 Desc: X3T9 Letter Ballot comments on SPI
 Res:

X3T9.2/93-102R0 Date: 6/6/93 Author: J. Williams [6/15/93]
 Desc: Queue Full Handling
 Res:

X3T9.2/93-103R0 Date: 5/31/93 Author: G. Milligan [6/15/93]
 Desc: SCSI-3 Parallel Interface Letter Ballot Comments
 Res:

X3T9.2/93-104R0 Date: 5/24/93 Author: J. Cannon [6/15/93]
 Desc: Comment on SPI letter ballot
 Res:

X3T9.2/93-105R0 Date: 6/8/93 Author: J. Lohmeyer [6/15/93]
 Desc: Response to J. Cannon Letter
 Res:

X3T9.2/93-106R0 Date: 6/8/93 Author: J. Lohmeyer [6/15/93]
 Desc: Response to G. Milligan comments on SPI
 Res:

X3T9.2/93-107R0 Date: 5/27/93 Author: F. Podio [6/15/93]
 Desc: Letter & draft of AIIM error monitoring & reporting
 Res:

X3T9.2/93-108R0 Date: 7/9/93 Author: G. Penokie [8/15/93]
 Desc: SCSI Disk Array Questions and Answers
 Res:

X3T9.2/93-109R0 Date: 6/7/93 Author: E. Gardner []
 Desc: SCSI Configured Automagically (SCAM)
 Res:

X3T9.2/93-109R1 Date: 6/30/93 Author: E. Gardner []
 Desc: SCSI Configured Automagically (SCAM)
 Res:

X3T9.2/93-109R2 Date: 7/20/93 Author: E. Gardner [8/15/93]
 Desc: SCSI Configured Automagically (SCAM)
 Res:

X3T9.2/93-109R3 Date: 8/9/93 Author: E. Gardner [8/15/93]
 Desc: SCSI Configured Automagically (SCAM)
 Res:

X3T9.2/93-109R4 Date: 9/14/93 Author: E. Gardner []
 Desc: SCSI Configured Automagically (SCAM)
 Res:

X3T9.2/93-109R5 Date: 9/14/93 Author: E. Gardner [10/15/93]
 Desc: SCSI Configured Automagically (SCAM)
 Res:

X3T9.2/93-110R0 Date: 6/21/93 Author: H. Landis [8/15/93]
 Desc: Comments on ATA DMA definitions
 Res:

X3T9.2/93-110R1 Date: 11/4/93 Author: H. Landis [12/15/93]
 Desc: DMA Definitions
 Res:

X3T9.2/93-111R0 Date: 7/16/93 Author: J. Lohmeyer [8/15/93]
 Desc: Letter to J. Stai
 Res:

X3T9.2/93-112R0 Date: 7/8/93 Author: R. Whiteman [8/15/93]
 Desc: Unitized Connector 12-pin Assignment
 Res:

X3T9.2/93-112R1 Date: 7/28/93 Author: R. Whiteman/L. Lamers [8/15/93]
 Desc: Unitized Connector 12-pin Assignment
 Res:

X3T9.2/93-113R0 Date: 6/9/93 Author: G. Houlder [8/15/93]
 Desc: SPI rev 12 comments
 Res:

X3T9.2/93-114R0 Date: 6/28/93 Author: G. Houlder [8/15/93]
 Desc: SPI Clarification of REQ/ACK pulse width
 Res:

X3T9.2/93-115R0 Date: 8/20/93 Author: R. Liu [10/15/93]
 Desc: Request for Clarification re: Table 161 rev 10k
 Res:

X3T9.2/93-116R0 Date: 7/12/93 Author: J. McGrath [8/15/93]
 Desc: ATA Power Mode Timer
 Res:

X3T9.2/93-117R0 Date: 8/19/93 Author: J. Lohmeyer [10/15/93]
 Desc: Transmittal letter for SCSI-2
 Res:

X3T9.2/93-118R0 Date: 9/2/93 Author: J. Lohmeyer [10/15/93]
 Desc: Request for Clarification from E. Lappin
 Res:

X3T9.2/93-119R0 Date: Author: Lamers/Lohmeyer [8/15/93]
 Desc: Minutes of X3T9.2 Working Group - JUL '93
 Res:

X3T9.2/93-120R0 Date: 6/23/93 Author: G. Penokie [8/15/93]
 Desc: Minutes of RAID Study Group - JUN '93
 Res:

X3T9.2/93-121R0 Date: 7/19/93 Author: R. Bellino [8/15/93]
 Desc: PCMCIA Cable Family
 Res:

X3T9.2/93-122R0 Date: 7/15/93 Author: G. Frazier [8/15/93]
 Desc: Automatic SCSI ID Acquistion
 Res:

X3T9.2/93-123R0 Date: 9/17/93 Author: J. Lohmeyer [10/15/93]
 Desc: Letter to Jean-Paul Emard re: TC reorg
 Res:

X3T9.2/93-124R0 Date: 7/21/93 Author: C. Monia [8/15/93]
 Desc: SAM status report
 Res:

X3T9.2/93-125R0 Date: 7/22/93 Author: Lamers/Lohmeyer [8/15/93]
 Desc: Minutes of X3T9.2 Meeting #106
 Res:

X3T9.2/93-126R0 Date: 7/16/93 Author: R. Snively [8/15/93]
 Desc: Proposed Architecturee for Configuring External RAID devices
 Res:

X3T9.2/93-127R0 Date: 7/20/93 Author: J. Scheible [8/15/93]
 Desc: Liason Report - X3T9.7 for JUL '93
 Res:

X3T9.2/93-128R0 Date: 7/23/93 Author: D. Pak [8/15/93]
 Desc: Liason Report - P1285 for JUL '93
 Res:

X3T9.2/93-129R0 Date: 7/22/93 Author: G. Penokie [8/15/93]
 Desc: Minutes of the RAID Study Group - JUL '93
 Res:

X3T9.2/93-130R0 Date: 7/23/93 Author: D. Hagerman [8/15/93]
 Desc: Project Proposal for SCSI-3 Controller Commands
 Res:

X3T9.2/93-131R0 Date: 7/26/93 Author: J. Lohmeyer [8/15/93]
 Desc: Letter to CBEMA on payment for Editorial services
 Res:

X3T9.2/93-132R0 Date: Author: J. Stai [8/15/93]
 Desc: Response to JBL Letter
 Res:

X3T9.2/93-133R0 Date: 8/31/93 Author: S. Finch [10/15/93]
 Desc: Is ATA-2 a bus standard or a device standard
 Res:

X3T9.2/93-134R0 Date: 8/31/93 Author: S. Finch [10/15/93]
 Desc: Should the power Connectors be part of the ATA-2 Standard
 Res:

X3T9.2/93-135R0 Date: 8/31/93 Author: S. Finch [10/15/93]
 Desc: How should the ATA-2 Standard Bus Cabling be handled
 Res:

X3T9.2/93-136R0 Date: 8/31/93 Author: S. Finch [10/15/93]
 Desc: Bus Definitions, Driver Specifications and Backward Compatibility
 Res:

X3T9.2/93-137R0 Date: 9/7/93 Author: C. Monia []
 Desc: Queuing Model Definitions & Task States
 Res:

X3T9.2/93-137R1 Date: 9/15/93 Author: C. Monia [10/15/93]
 Desc: Queuing Model Definitions & Task States
 Res:

X3T9.2/93-138R0 Date: 9/7/93 Author: C. Monia []
 Desc: Proposal for SCSI Service Interface
 Res:

X3T9.2/93-138R2 Date: 9/15/93 Author: C. Monia [10/15/93]
 Desc: Proposal for SCSI Service Interface
 Res:

X3T9.2/93-139R0 Date: 9/7/93 Author: L. Lamers [10/15/93]
 Desc: SCSI-2 Revision 101 Corrections
 Res:

X3T9.2/93-140R0 Date: 9/15/93 Author: G. Penokie [12/15/93]
 Desc: SCSI-3 Queuing Model
 Res:

X3T9.2/93-140R1 Date: 11/10/93 Author: G. Penokie [12/15/93]
 Desc: SCSI-3 Queuing Model
 Res:

X3T9.2/93-141R0 Date: Author: G. Penokie [10/15/93]
 Desc: Minutes of RAID Study Group
 Res:

X3T9.2/93-142R0 Date: Author: L. Lamers [10/15/93]
 Desc: Minutes of X3T9.2 Working Group - SEP '93
 Res:

X3T9.2/93-143R0 Date: Author: Lamers/Lohemyer [10/15/93]
 Desc: Minutes of X3T9.2 Meeting #107
 Res:

X3T9.2/93-144R0 Date: 9/16/93 Author: L. Lamers [10/15/93]
 Desc: 16-Byte Multimedia Commands
 Res:

X3T9.2/93-145R0 Date: 9/12/93 Author: R. Weber []
 Desc: COPY Command definition for SCSI-3
 Res:

X3T9.2/93-145R1 Date: 9/12/93 Author: R. Weber [10/15/93]
 Desc: COPY Command definition for SCSI-3
 Res:

X3T9.2/93-146R0 Date: 9/16/93 Author: J. McGrath [10/15/93]
 Desc: Power Management Modes in ATA
 Res:

X3T9.2/93-147R0 Date: 9/16/93 Author: G. Stephens [10/15/93]
 Desc: TIB on tape partitions
 Res:

X3T9.2/93-148R0 Date: 9/21/93 Author: L. Lamers [10/15/93]
 Desc: Minutes of the Disk Drive Working Group - Sep '93
 Res:

X3T9.2/93-149R0 Date: 9/21/93 Author: Paul D. Aloisi [10/15/93]
 Desc: RAID Issues for SPI
 Res:

X3T9.2/93-149R1 Date: 9/21/93 Author: Paul D. Aloisi [12/15/93]
 Desc: RAID Issues for SPI
 Res:

X3T9.2/93-150R0 Date: 9/22/93 Author: P. Dougherty [12/15/93]
 Desc: Software Write Protect
 Res:

X3T9.2/93-151R0 Date: 9/23/93 Author: L. Lamers [10/15/93]
 Desc: X3T9.2 Letter Ballot Procedure
 Res:

X3T9.2/93-152R0 Date: Author: J. Lohmeyer [10/15/93]
 Desc: SAM Letter Ballot
 Res:

X3T9.2/93-153R0 Date: Author: J. Lohmeyer [10/15/93]
 Desc: SBP Letter Ballot
 Res:

X3T9.2/93-154R0 Date: Author: J. Lohmeyer [10/15/93]
 Desc: FCP Letter Ballot
 Res:

X3T9.2/93-155R0 Date: Author: J. Lohmeyer [10/15/93]
 Desc: GPP Letter Ballot
 Res:

X3T9.2/93-156R0 Date: 9/23/93 Author: B. Dallas [10/15/93]
 Desc: Minutes of the CAM Working Group - 9/93
 Res:

X3T9.2/93-157R0 Date: Author: J. Geldman [10/15/93]
 Desc: ATA Fast Timing Enhancements
 Res:

X3T9.2/93-157R2 Date: 11/5/93 Author: J. Geldman [12/15/93]
 Desc: Proposed 20 MB/s ATA Timing Extension
 Res:

X3T9.2/93-158R0 Date: Author: G. Stephens [10/15/93]
 Desc: SCSI-3 Queuing Comments
 Res:

X3T9.2/93-159R0 Date: 10/5/93 Author: L. Lamers [12/15/93]
 Desc: Memorandum to Alternates on Letter Ballot
 Res:

X3T9.2/93-160R0 Date: 10/15/93 Author: G. Penokie [12/15/93]
 Desc: Minutes of RAID study group - 10/13/93
 Res:

X3T9.2/93-161R0 Date: 10/15/93 Author: G. Penokie [12/15/93]
 Desc: Extended SCSI Addressing
 Res:

X3T9.2/93-162R0 Date: 10/18/93 Author: J. Geldman [12/15/93]
 Desc: PIO Mode 4 REQ/ACK Handshake Control
 Res:

X3T9.2/93-163R0 Date: 11/2/93 Author: E. Lappin [12/15/93]
 Desc: Sequential-access density code
 Res: Accepted for SCSI-3.

X3T9.2/93-164R0 Date: 11/2/93 Author: G. Penokie [12/15/93]
 Desc: Comments on SAM
 Res:

X3T9.2/93-165R0 Date: Author: D. Wallace [12/15/93]
 Desc: Simulation Results ATA @ 20 MB/s
 Res:

X3T9.2/93-166R0 Date: Author: Lamers/Finch [12/15/93]
 Desc: Minutes of the ATA Working Group - Nov '93
 Res:

X3T9.2/93-167R0 Date: 11/3/93 Author: H. Landis [12/15/93]
 Desc: ATA-2 Power Management
 Res:

X3T9.2/93-168R0 Date: 11/2/93 Author: J. Masiewicz [12/15/93]
 Desc: ATA-2 Draft Comments
 Res:

X3T9.2/93-169R0 Date: Author: J. Geldman [12/15/93]
 Desc: Fast ATA - Commands
 Res:

X3T9.2/93-170R0 Date: Author: J. Geldman [12/15/93]
 Desc: Fast ATA - Protocol
 Res:

X3T9.2/93-171R0 Date: Author: J. Geldman [12/15/93]
 Desc: Fast ATA - Physical
 Res:

X3T9.2/93-172R0 Date: 11/9/93 Author: Lamers/Lohmeyer [12/15/93]
 Desc: Minutes of X3T9.2 Working Group - Nov '93
 Res:

X3T9.2/93-173R0 Date: 11/10/93 Author: E. Gardner [12/15/93]
 Desc: Clarifications to SCAM
 Res:

X3T9.2/93-174R0 Date: 11/5/93 Author: Hagerman/Ham [12/15/93]
 Desc: Ultra-SCSI Proposal Presentation
 Res:

X3T9.2/93-175R0 Date: 11/10/93 Author: B. Ham [12/15/93]
 Desc: Relationship of SCSI-2 to SPI
 Res:

X3T9.2/93-176R0 Date: Author: Lamers/Lohmeyer [12/15/93]
 Desc: Minutes of X3T9.2 Meeting #108
 Res:

X3T9.2/93-177R0 Date: 11/8/93 Author: J. Lohmeyer [12/15/93]
 Desc: Letter ballots comments
 Res:

X3T9.2/93-178R0 Date: 11/10/93 Author: Lohmeyer/Harris [12/15/93]
 Desc: Project Proposal for Multi-Media Command Set
 Res:

X3T9.2/93-179R0 Date: 11/10/93 Author: Lohmeyer/Harris [12/15/93]
 Desc: Project Proposal for AT Protocol
 Res:

X3T9.2/93-180R0 Date: 11/10/93 Author: D. Hagerman [12/15/93]
 Desc: Ultra-SCSI Timing Proposal
 Res:

X3T9.2/93-181R0 Date: 11/10/93 Author: J. Scheilbe [12/15/93]
 Desc: proposal for a working draft of SSA-SSP
 Res:

X3T9.2/93-182R0 Date: 10/27/93 Author: R. Shergill [12/15/93]
 Desc: Minutes of the ATA-Extensions Working Group Meeting
 Res:

X3T9.2/93-183R0 Date: 11/11/93 Author: G. Penokie [12/15/93]
 Desc: Minutes of the RAID Study Group - Nov '93
 Res:

X3T9.2/93-184R0 Date: 11/11/93 Author: G. Houlder [12/15/93]
 Desc: Message processing
 Res:

X3T9.2/93-185R0 Date: Author: B. Snively [12/15/93]
 Desc: FCP letter ballot response
 Res:

X3T9.2/93-186R0 Date: Author: E. Lappin [12/15/93]
 Desc: Proposal for LOCATE Command
 Res:

X3T9.2/93-187R0 Date: Author: E. Lappin [12/15/93]
 Desc: Proposal on the READ POSITION command
 Res: