

Accredited Standards Committee*
X3, Information Processing Systems

Doc. No.: X3T10/94-150r1

Date: August 1, 1994

Project:

Ref. Doc.:

Reply to: John Lohmeyer

To: Membership of X3T10

From: Ralph Weber, Secretary X3T10
John Lohmeyer, Chair X3T10

Subject: Minutes of X3T10 Plenary Meeting #4
Bedford, NH -- July 21, 1994

Agenda

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 - 8.15 SCSI-3 Stream Commands (SSC) Status {Project 997-D} [Lappin]
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 - 8.18 Directly-Addressable Device Interface (DADI) Status {Project 964-D} [open]

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- 8.19 SCSI Common Access Method -2 (CAM-2) Status {Project 990-D} [Dallas]
 - 8.20 SCSI-3 Controller Commands (SCC) Status {Project 1047-D} [Penokie]
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 - 10.10 Request for New Density Codes for Sequential Access Medium (94-147r1) [Cummings]
 - 10.11 Request for New ASC/ASCQ Codes (94-148r1) [Cummings]
 - 10.12 Annual Publication of Documents [Milligan]
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 - 10.16 Message Handling Chart for SIP (94-032) [Houlder]
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 - 12.4 IT8 [Lohmeyer]
 - 12.5 IEEE P1285 Status [Pak]
 - 12.6 PCMCIA Report [McLean]
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14. Meeting Schedule
- 14.1 Authorization of Working Group Meetings
15. Adjournment
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Results of Meeting

1. Opening Remarks

John Lohmeyer, the newly-appointed X3T10 Chair, called the meeting to order at 1:04 p.m., Thursday July 21, 1994. He thanked Ralph Weber and Charles Monia of Digital Equipment Corp. for arranging and hosting the meeting.

John said that X3 Subgroup Membership forms and the X3T10 Mailing Subscription form 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. 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.

John introduced Janet Burnham-Sauter from Global Engineering Documents. Global is developing a hypertext representation of the SCSI, Fibre Channel, IPI, HIPPI, and ATA documents. Janet had given a demo of the prototype product that morning. The documents will be distributed electronically by Global on CD-ROMs. Global will be charging a subscription fee. Ed Gardner asked about copyright restrictions, but no definitive answer was yet available. For more information, contact Kathi Kankis, also with Global Engineering Documents, at 303-397-2296.

2. Approval of Agenda

The draft agenda was approved with the following additions:

- 10.8 Transfer Period tolerance in SIP/SPI (94-142r0) [Galloway]
- 10.9 SCSI-3 SPI Issues (94-038r4) [Aloisi]
- 10.10 Request for New Density Codes for Sequential Access Medium (94-147r1) [Cummings]
- 10.11 Request for New ASC/ASCQ Codes (94-148r1) [Cummings]
- 10.12 Annual Publication of Documents [Milligan]
- 10.13 Differential Sense [Snively]
- 10.14 READ POSITION command for SSC (94-137) [Lappin]
- 10.15 XOR Commands Study Group (94-111) [Houlder]
- 10.16 Message Handling Chart for SIP (94-032) [Houlder]
- 10.17 SCAM Annex Proposal (94-133) [Gardner/Lamers/Lohmeyer]
- 10.18 Acceptance motion(s) for other documents [Lohmeyer]

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. This year, the International Program fee (\$300) will be billed separately directly from ANSI.

The Chair said he had sent letter to 8 people from 5 organizations informing them that their membership was in jeopardy due to failure to return two consecutive letter ballots and that their membership would be terminated if they failed to return the next letter ballot. All organizations except Samsung

Semiconductor returned the GPP ballot. Samsung was changed to observer status.

The Chair said he had sent letters to 19 people from 9 organizations informing them that their membership was in jeopardy due to non-attendance (see 94-009r0) and that their membership would be terminated if they did not attend this meeting. All organizations were represented except: JAE, P. E. Logic Corp., and Samsung Semiconductor. Principal members from these organizations were changed to observers.

The following organizations joined X3T10 at the meeting: Amphenol Interconnect, Congruent Software, Inc., Iomega, and Zadian Technologies.

The X3T10 membership is now at 61 organizations up from 60 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 - May Meeting Harrisburg, PA (X3T10/94-123r0)

The minutes were approved as written.

5. Document Distribution

Members who have any problems with their mailing subscription should deal directly with Katrina Gray or Dan Arnold 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 Thursday, August 4, 1994. 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 X3T10 meets its document archiving requirements by including the X3 Secretariat 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 ATA and SCSI Reflectors. To be added to the ATA Reflector, send an email to majordomo@dt.wdc.com with the line 'subscribe ata your-email-address' in the message body. To subscribe to the SCSI Reflector, send an electronic message to: scsi-request@WichitaKS.NCR.COM.

The current document register is enclosure (3).

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. Annex I contains the ANSI patent policy.

7. Review of Old Action Items

10) John Lohmeyer will contact Lynn Barra regarding the LOG SENSE TIB (X3T9.2/90-165) which is on hold. **Carry over.**

15) Bob Snively will investigate liaison with IEEE P1244.5. **Dropped.**

- 16) Ralph Weber will contact Tetsuro Motoyama regarding his desired disposition of X3T9.2/93-036r1. **Complete.**
- 17) John Lohmeyer will revise the SCSI-3 Fast-20 project proposal (94-060r1) based on the comments accepted at the Plenary meeting. **Complete.**
- 18) John Lohmeyer will forward the revised SCSI-3 Fast-20 project proposal (94-060r2) to Lynn Barra with appropriate documentation. **Complete.**
- 19) John Lohmeyer will send Lynn Barra the results of the SCSI-2 vote. **Complete.**
- 20) John Lohmeyer conduct a letter ballot on the GPP project proposal (94-099r0). **Complete.**
- 21) George Penokie will prepare a revision of the LOG SENSE TIB. **Carry over.**

8. Subgroup and/or Project Status Reports

8.1 Project Status Summary [Lohmeyer]

John Lohmeyer said that the current X3T10 project status summary was included on the backs of the meeting agendas.

8.2 X3T10.1 Task Group Report

John Scheible reported on the current activities of X3T10.1:

July X3T10.1 Liaison report to X3T10
 =====

- * Continue SSA Electrical Interface working group
- * Entire July meeting dedicated to SSA-PH
- * Approved the following items
 - Letter ballot on SSA-SCSI2 technical report to be issued
 - Include SSA Electrical Interface working group notes in informative annex of SSA-PH pending inclusion in the appropriate sections.
 - Approved clarification for inclusion:
 - Clarify Acknowledge time-outs
 - Clarify Response message is generated for Async_alert
 - Clarify which port issues Async Alert
 - Clarify Alert_port field in Master_alert
 - Clarify when SAT character is forwarded.
- * Meeting schedule is as follows
 - Aug 17, 9:00- 5:00 in Keystone CO, Electrical Interface WG
 - Aug 18, 9:00- 8:00 in Keystone CO, SSA-PH working group
 - Aug 19, 8:00-12:00 in Keystone CO, SSA-PH Working group
 - Sept 12, 9:00- 5:00 in Houston, TX, Electrical Interface WG
 - Sept 13, 9:00- 8:00 in Houston, TX, X3T10.1 Plenary
to review SSA-PH
 - Oct 18-19 in Havant England Electrical Interface WG
- * Mailing schedule (Primary and one alternate)
 - By 7/29 (cutoff 7/25) for July meeting mailing and SSA-PH rev 1A (Word version, no technical changes)
 - By 8/26 for proposed modifications of SSA-PH from the Aug 18/19 meeting for review next plenary
- * Next plenary meeting (Sept 13) will review the work done by the SSA-PH working group

8.3 SCSI-2 Status {Project 375-M} [Lamers]

John Lohmeyer reported that the published ANSI SCSI-2 standard is expected to be available in August.

8.4 SCSI Common Access Method (CAM) {Project 792-D} [Dallas]

Bill Dallas reported that the CAM working group reviewed the changes between revision 7 and 8. Bill has been directed to re-work the soft reset handling text substantially. There were many editorial comments made during the phase-cognizant mode review. The host target mode has been reviewed several times and is in good shape.

8.5 AT Attachment (ATA) Status {Project 791-D} [Lamers]

BSR approved AT Attachment on May 12, 1994. It is now in the publication phase. Steve Finch moved that we authorize the quotation (94-157) for professional editing work on the AT document in the amount of \$350.00. Erich Oetting seconded the motion. The motion passed 30:0:0:30.

8.6 ATA Extensions (ATA-2) Status {Project 948-D} [Finch]

Steve Finch reported that the ATA working group has met three times since the last plenary meeting. The working group has a goal of accepting ATA-2 Rev 2b as working draft for the project.

Gene Milligan moved that X3T10 accept ATA Extensions (ATA-2) revision 2e as the committee working draft for project 948-D. Richard Kalish seconded the motion. The motion passed 39:0:0:21.

Gene Milligan moved that in response to the negative comments on the ATA letter ballots that X3T10 cancel the four previous project proposals, 94-019r2, 94-020r2, 94-021r2, and 94-022r2 and conduct letter ballots for forwarding the replacement project proposals 94-019r4 and 94-022r4 to X3 for further processing. Steve Finch seconded the motion.

During the discussion, John noted that, even though all the previous proposals passed, each proposal received about six negative comments. We are required to address negative comments. Deleting two of the project proposals is our response. Tom Hanan raised concerns about the delays introduced by the letter ballot. John said that letter ballots are the most expeditious mechanism for handling the negative review comments. Selection of editors for the proposed documents also was discussed.

Gene's motion was approved 31:1:0:29.

8.7 SCSI-3 Architecture Model (SAM) Status {Project 994-D} [Monia]

Charles Monia reported on revision 14 of SAM. All changes were in response to letter ballot comments. The major changes were in the queuing model and the reserved field handling. During the working group review, additional queuing model changes were identified. The working group also noted that approved dual port documents need to be incorporated in the SAM, with wording revised as necessary to change from SIP terminology to SAM terminology.

Gary Stephens moved that in the process of editing the SIP dual port documents to SAM the two port concepts be changed to multiple ports. The motion failed for lack of a second.

Charles agreed to prepare revision 15 of SAM for the August mailing. Revision 15 will include the changes noted by the working group.

8.8 SCSI-3 Parallel Interface (SPI) Status {Project 855-D} [Lamers]

Revision 12c was in the April mailing. The major difficulty with revision 13 is editing SCAM terminology to be consistent with the rest of SPI. Larry could not guaranteed revision 13 availability for the next mailing.

Gene Milligan expressed concern about the delays in SPI completion caused by the incorporation of SCAM.

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

Duncan Penman has volunteered to edit SIP. Gary Stephens moved that X3T10 accept the \$2,000 quotation (94-158) for converting SIP from Word Perfect to Framemaker. Duncan Penman seconded the motion. Gene Milligan questioned the choice of Framemaker. The motion passed 33:1:0:26. Gene's objection was to the use of text editing software that is not widely used.

8.10 SCSI-3 Generic Packetized Protocol (GPP) Status {Project 991-D} [Stephens]

Gary reported that the only activity on GPP is the transition from standard to technical report. John asked Larry to determine the style rules for a X3 technical report.

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

Jerry reported that SBP letter ballot comments received by the May 1994 deadline are recorded in a proposed disposition document dated June 9, 1994. The changes resulting to the SBP document (X3T10 document 992D) are reflected in Revision 17 also dated June 9, 1994. Both documents above were included in the X3T10 June mailing. A limited number of each document were made available at both the July 20, 1994 Working Group meeting and the July 21, 1994 Plenary session. Submitters of the original comments have indicated satisfaction with the disposition appearing in Revision 17.

Subsequently, on July 15, a new proposal involving limited technical changes to SBP has been submitted by Apple Computer. This proposal (which is summarized below) represents a significant simplification in that there is now assurance that within SBP, no isochronous application data unit is split across two consecutive IEEE P1394 isochronous data block packets. Also, additional editorial comments to Revision 17 have been submitted by IBM. The combination of technical changes submitted by Apple and editorial changes submitted by IBM now requires publication of a new revision of SBP, Revision 18. This new version of SBP will be requested for inclusion in the August mailing and for discussion / consideration at the September meeting.

The technical proposal from Apple is a continuation of their isochronous topic comments submitted originally in May. The new proposal was developed with significant collaboration involving active members of the Digital VCR committee. Additionally, the proposal has been reviewed by certain major companies in the consumer electronics market.

Key elements of the Apple proposal are as follows:

- (a) The IEEE 1394 isochronous data block packet is characterized as carrying an integer number of isochronous data payload packets. These isochronous data payload packets are specified by some isochronous application, such as a digital VCR using isochronous data. The key idea resulting in a significant simplification is that SBP now requires there to be an integer number of these payload packets within an isochronous data block packet.
- (b) There is introduced in the isochronous login CDS a new parameter, L, which is the number of bytes within an isochronous data payload packet.
- (c) The isochronous data rate parameter R is now expressed in units of isochronous data payload packets per second rather than its former characterization of bytes per second. The formula for rate R continues to be the same, namely $R = (L + N/D)$.
- (d) Since an isochronous data payload packet no longer spans two consecutive isochronous data block packets, there is no longer a need for the byte offset field in bytes 50 and 51 of the Stream Control CDS. Consequently, the byte offset parameter is removed and the associated field becomes reserved.

As stated, the plan for SBP is to incorporate the new comments from Apple and from IBM into Revision 18 which is to be distributed in the August X3T10 mailing. A copy of the Apple technical proposal also will be included within the August mailing so as to provide a clear indication of areas of SBP having been changed technically. A meeting vote will be requested at the September Plenary session for the purpose of accepting Revision 18 as a satisfactory resolution of all comments submitted relative to SBP as a part of its letter ballot in May. Authorization will be requested for forwarding Revision 18 to X3 for review and vote.

8.12 SCSI-3 Fiber Channel Protocol (FCP) Status {Project 993-D} [Snively]

Bob reported that two FCP review meetings have been held since the last plenary meeting. All but one of the letter ballot comments have been resolved. That one comment will be discussed later at this meeting. Additional comments have been received since the letter ballot. Those comments have resulted in non-substantive technical and editorial changes.

Revision 9 is being prepared to address final resolutions. Bob said that the plan is to get acceptance of the comments resolutions and forwarding of FCP to public review at the September meeting.

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

Ralph Weber reported that a detailed review of the SPC was held earlier this week. He is ready to prepare revision 2 to address the comments received so far and to complete inclusion of the medium changer commands. Ralph intends to have SPC revision 2 in the August mailing.

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

Thomas "Rick" Tewell has volunteered to edit SBC. While he is not a current member of X3T10, he plans to join. He previously participated on the CAM Committee.

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

Ted requested a lengthy review of the SSC document during the September meeting week.

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

There was a discussion of possible sources of an editor. No reliable sources of editors could be found. Larry noted that, if no editor can be found, he will be moving for cancellation of the project (and elimination of the Graphic Commands standard).

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

Erich reported that revision 0 is the draft of record for the SMC. Erich is trying to create his editor copy of the SMC document. His starting point is a text file supplied to him by Gary Stephens.

8.18 Directly-Addressable Device Interface (DADI) Status {Project 964-D} [open]

John noted the absence of an editor and that this is another project that should be cancelled if no editor is forthcoming. He said that he had received a request that the project be kept open as the requestor's company may have a proposal to submit against this project.

8.19 SCSI Common Access Method -2 (CAM-2) Status {Project 990-D} [Dallas]

This project is in hibernation pending completion of the resolution work for CAM public review comments.

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

George reported that revision 0 of the SSC is available. Revision 0 contains four documents, formerly known as:

- SDA Model (94-040)
- SDA States and Types (94-041)

- SDA Commands and Mode Pages (94-042)
- SCSI-2 Logical Unit Addressing (94-031)

The working group approved several changes to SCC revision 0, specifically:

- Added vendor specific bit to target base device states
- Added device type to states descriptor
- Removed DACL states from component state
- Added an automatic LUN assignment bit to several service actions
- Added a Break Peripheral Device service action

George described plans for an overview presentation of the SSC during the September meeting week.

Jim McGrath asked about the state of the RAID 5 proposal from Seagate. George and Gene Milligan said that the proposal more properly applies to the SBC, not the SCC.

George moved that X3T10 accept SCSI-3 Controller Commands revision 0 as the committee working draft for project 1047-D. Charles Monia seconded the motion. The motion passed unanimously.

8.21 Multimedia Command Set (MMC) Status {Project 1048-D} [Harris]

Norm Harris was not available to report. Larry reported that Norm has asked for a MMC working group meeting during the September meeting week. The meeting was assigned to Monday afternoon.

8.22 Replacement of ANSI X3.80-1988, Interfaces Between Flexible Disk Cartridges and Their Host Controllers, with ISO 9315:1989. {Project 52-M}

ANSI BSR approved adopting ISO 9315:1989 as an American National Standard. The standard will be designated: ANSI/ISO/IEC 9315:1989[1994]. Essentially, ANSI has adopted the ISO equivalent standard.

8.23 Fast-20 Study Group [Ham]

Bill Ham led a discussion of the 25 pF vs 20 pF capacitance issues in SPI. (See the working group minutes, 94-149, for more information on this.) Bill presented four options:

- Accept 25 pF and proceed with forwarding the Fast-20 document
- Accept 20 pF but change nothing else and proceed with forwarding Fast-20
- Accept 20 pF and develop new configuration rules for pure Fast-20 systems
- Accept 20 pF and develop new configuration rules for mixed Fast-20 and SCSI-2 systems

Bill Galloway moved that the 20 pF value remain in the document until the next plenary meeting, at which point the value will be considered again. Larry Lamers seconded the motion. The motion passed 25:9:0:26.

Jim McGrath proposed scheduling another meeting to review the Adaptec testing results. Jim believed that the meeting should be held between now and the September meeting week. Larry promised to provide the testing results out in electronic mail as soon as possible, but could not commit to a date prior to the September meeting week.

John also mentioned the working group had recommended changing the slew rate from 540 mv/ns to 520 mv/ns. The change makes Fast-20 consistent with SPI. There was no disagreement at the plenary meeting with this recommendation.

9. Old Business

9.1 Technical Information Bulletins

George Penokie is working on a revision of the Log Sense TIB for SCSI-2. Gary Stephens has given a copy of the Sequential Access TIB for SCSI-2 to Ted Lappin. There was some confusion regarding the owner of the Sequential Access TIB. Ted plans to discuss the issue with Gary.

9.2 ASC Codes for Scanner Window Descriptor Bytes Proposal (94-110r1) [Weber]

Ralph presented a graphics proposal from Ricoh that was almost approved in 1993. The only problem last time was the ASC value, which should have been 66h not 65h. Ralph moved that 94-110r1 be approved for inclusion in the SGC with the new ASC/ASCQ values being included in the SPC. Jeff Williams seconded the motion. The motion was approved unanimously.

9.3 Checking of Reserved Fields (94-130) [Lohmeyer]

John presented a definition for a new Control mode page bit that manages target checking of reserved fields and bits. The proposal had been recommended for acceptance by the working group. There was a lengthy discussion. While the proposal made it possible for initiators to discover the device server behavior on reserved bit checking, it could require device servers to have even more firmware to support both checking and not checking reserved bits.

Gerry Houlder moved that 94-130r0 be accepted for inclusion in the SPC. Larry Lamers seconded the motion. The motion was defeated 7:26:0:27.

10. New Business

10.1 Revised GPP Project Proposal Letter Ballot Results [Lohmeyer]

GPP Revised Project Proposal Letter Ballot Results: 45:3:0:12 = 60

No: ENDL, Exabyte, FSI

Did not respond: Amdahl, Circuit Assembly Corp, CMD Technology, Interphase, Molex, National Semiconductor, Oak Technology, Quantum, Samsung Semiconductor, Sony, Sun Microsystems, Thomas & Betts

Comments:

ENDL:

GPP has been a project for several years, with the purpose of supporting SCSI in a variety of generic applications.

There has been no observable market confusion. What there has been is irritation within the committee over comments made by the GPP editor in promoting GPP as an alternative to SSP and SBP and FCP. These are internal committee issues which would have been more properly addressed by rewriting the scope.

There have been several opportunities to review GPP but those who recently took a stand opposing

it as a standard were not active in the process of review. Despite the lack of broad participation, it was agreed that the content of GPP is technically sound and complete.

This action sets the unwelcome precedent of tacitly encouraging members in the minority to contribute significant time and effort and then denying them the purpose of their work, a standard.

Either the value of GPP should have been questioned long ago, or the document should have been allowed to continue as a dpANS.

Exabyte:

The procedure of approving a project and waiting until it is almost complete to remove its project status seems to be a bad way of doing business. I object to this procedure. Therefore, I must vote NO.

My voting NO on forwarding this converted proposal for GPP is not indicative of a position on the content, validity, or usefulness of GPP.

FSI:

Please see document, X3T10/94-167, for this comment. It consists of a presentation detailing the relative performance of FCP, GPP, and SIP and it concludes that GPP is faster than FCP and SIP.

The comments were such that no resolution is possible. John Lohmeyer took an action item to forward the revised GPP project proposal 94-099r1 and negative letter ballot comments to X3 for further processing.

10.2 SCSI-3 Download Microcode (94-104r3) [Cummings]

Ken Cummings presented a revision of his proposal to enhance the WRITE BUFFER command. Questions were raised regarding the management of drive state before a microcode download. Jim McGrath moved that 94-104r3 be accepted as revised for inclusion in the SPC. Ted Lappin seconded the motion. The motion passed 26:0:0:34.

10.3 Resolution of FCP Letter Ballot Comments

Bob reported that many editorial comments have been received and resolved. A normative annex has been added to include the PRLI definition, which is not yet a standard, itself. Several ISO fixes have been made to FCP. Two remaining technical comments were resolved at the working group meeting. The comments resolved concern the handling of overlaid data and definition of residual counts.

Bob undertook resolving the last outstanding issue, handling of optional fields by FCP transports, at the plenary. Bob proposed a specific rewording of the optional fields rules in FCP.

Gene Milligan moved that X3T10 accept the resolution of the letter ballot comments as shown in the several minutes documents. Gary Stephens seconded the motion. The motion passed 32:0:0:28.

10.4 Resolution of SAM Letter Ballot Comments

Charles has prepared a document listing the proposed resolutions for letter ballot comments. The persons who voted negatively on the letter ballot acknowledged the adequacy of the proposed resolutions. However, they reserved judgement of the revised document pending their ability to review it.

10.5 Resolution of SBP Letter Ballot Comments

See agenda item 8.11.

10.6 CAM Forwarding for Second Public Review

The CAM working group has generated sufficient work to prevent a forwarding vote at this time.

10.7 X3T10 Procedures [Lamers]

Larry described a procedures package that he is preparing for the August mailing. Larry offered defining "final action" as an example of information that would go in the procedures document. When asked, Larry said that the document probably will contain eight to ten pages. Gene and Larry discussed specific examples of ideas for the procedures document.

10.8 Transfer Period tolerance in SIP/SPI (94-142r0) [Galloway]

Bill Galloway moved that 94-142r0 be accepted for inclusion in the next revision of SPI. Ed Gardner seconded the motion. Bill noted that the working group recommended approval of the proposal by a vote of 17:3.

During the discussion Bill accepted some minor changes to his proposal. So, the motion was amended to '94-142r0 as revised'. The motion to accept 94-142r0 as revised was approved by a vote of 29:2:0:29.

10.9 SCSI-3 SPI Issues (94-038r4) [Aloisi]

Paul presented his proposed changes to SPI for hot plugging of devices. During a lengthy discussion, Paul received several corrections for the second page of his proposal. Dean Wallace moved that the revised 94-038r4 be accepted for inclusion in the SPI. Paul Aloisi seconded the motion. The motion was approved 22:2:0:36.

10.10 Request for New Density Codes for Sequential Access Medium (94-147r1) [Cummings]

Ken Cummings presented his request for a 3490E density code. Ken also asked for two density codes for IBM and one for Storage Technology Corp. for products in design.

Jeff William moved that 94-147r1 be accepted for inclusion in the SSC. Ted Lappin seconded the motion. 20:0:0:40:

10.11 Request for New ASC/ASCQ Codes (94-148r1) [Cummings]

Jeff Williams moved that 94-148r1 be accepted for inclusion in the SPC. Ralph Weber seconded. The motion passed 21:0:0:39.

10.12 Annual Publication of Documents [Milligan]

Gene Milligan asked that the technical committee adopt procedures that favor timely delivery of standards documents. Gene proposed yearly publication of documents. Several committee members complained about the tendency to add one more late-breaking feature just as the standard should be going to publication.

Larry noted that we will hear lots of motherhood and apple pie statements tonight. Then, more revisions will be thrown in at the next meeting.

Gene Milligan took an action item to draft proposed procedures for periodic/timely publication of documents until a standard becomes dormant.

10.13 Differential Sense [Snively]

Bob described a problem where the differential sense line was omitted from the SCA connector. Bob asked whether the SCA connector needs a differential sense line? That is, do SCSI devices at the end of a wire need to know that they are running differential? Bob asked the committee to consider the issue and prepare to discuss it at the next meeting.

Gene Milligan described a new issue from SFF, also regarding differential sense. The area of concern is a backplane definition for SFF. The backplane currently has a pin for the differential sense line. Gene wants the location of the pin moved. Gene's proposal generated lots of discussion and a specific recommendation was not forwarded to SFF (where it was resolved the next day).

10.14 READ POSITION command for SSC (94-137) [Lappin]

Ted Lappin presented his proposal to enhance the stream command READ POSITION to return all position information in a single data-In buffer response. George Penokie moved to accept 94-137r0 for inclusion in the SSC. Jeff Williams seconded the motion. The motion passed 26:0:0:34.

10.15 XOR Commands Study Group (94-111) [Houlder]

Gerry Houlder requested authorization for a study group for the XOR commands proposal. John said that a study group meeting will be scheduled during the September meeting week.

10.16 Message Handling Chart for SIP (94-032) [Houlder]

Gerry asked if the concept of a recommended message handling was acceptable to anyone present. Gerry Houlder moved that 94-032r0 be accepted for inclusion in SIP. Jim McGrath seconded the motion. The motion was defeated 2:25:0:0.

10.17 SCAM Annex Proposal (94-133) [Gardner/Lamers/Lohmeyer]

John presented a document (94-133r0) describing changes in the SCAM annex that currently appears in SPI. John noted that most of the changes affect hosts.

Jim McGrath moved that X3T10 approve technical items 1, 3, 4, 5, and 6 94-133r0 (the entire document, except technical item 2) be approved for incorporation in SPI. Ed Gardner seconded the motion.

The motion passed 24:0:0:36.

Jim McGrath moved that X3T10 approved technical item 2 in 94-133r0 be accepted for inclusion in SPI

with the change that "go offline" becomes "may go offline." Ed Gardner seconded the motion.

Peter Johansson moved that the motion be amended to change "may" to "should." Gene Milligan seconded the motion. The motion to amend passed 15:2:1:42. The amended main motion passed 20:1:1:38.

10.18 Acceptance motion(s) for other documents [Lohmeyer]

Gene Milligan moved that the following documents be accepted as current working drafts for the associated projects of the X3T10 committee and be approved for electronic distribution by Global Engineering Documents:

X3T10/0792D	r07	working draft	Common Access Method Transport an	Dallas
X3T10/0855D	r12c	working draft	SCSI-3 Parallel Interface	Lamers
X3T10/0948D	r02	working draft	AT Attachment Extensions-2	Finch
X3T10/0992D	r17	working draft	SCSI-3 Serial Bus Protocol	Roberts
X3T10/0993D	r08	working draft	SCSI-3 Fibre Channel Protocol	Snively
X3T10/0994D	r13	working draft	SCSI-3 Architecture Model	Monia

Bill Galloway seconded the motion. The motion was approved 23:0:0:37.

11. ISO [Milligan]

Gene Milligan, the acting X3T10 International Representative, waived giving his oral report in lieu of the following electronic report:

ISO Report July 1994

ISO/IEC JTC 1/SC 25/WG4 met 4-7 July. The meeting was chaired by Prof. Popovic with experts from Denmark, Germany, Japan, and the United States. Positive NWI ballots were reviewed for five new projects: FDDI Station Management (SMT) Abstract Test Suite (ATS), FDDI Physical (PHY) Abstract Test Suite (ATS), FDDI Physical Medium Dependent (PMD) Abstract Test Suite (ATS), FDDI Media Access Control (MAC) Abstract Test Suite (ATS), FDDI Low Cost Fibre Physical Medium Dependent (LCF-PMD), and agreed to draft resolutions to authorize a CD letter ballot upon receipt of the relevant contributions.

CD letter ballot results were reviewed for nine projects concerning FDDI SMF-PMD, FDDI Station Management (SMT), FDDI Physical Layer Protocol - 2 (PHY-2), FDDI Media Access Control - 2 (MAC-2), FDDI CT-PICS, IPI Enhanced PHY, HIPPI Framing Protocol (FP), HIPPI Encapsulation of ISO 8802-2 Logical Link Control Protocol Data Units (LE), and HIPPI Physical Switch Control (SC).

DIS letter ballots are in progress for two projects SCSI-2 and HIPPI-PH.

Publication of two additional International Standards are in progress for IPI Device-specific tape commands and FDDI Hybrid Ring Control (HRC).

The working group is seeking guidance on the preferred course of action for the FDDI to Synchronous Optical Network (SONET) Physical Layer Mapping Function (FDDI SPM).

WG 4 encourages the continued processing of the HIPPI-FP, HIPPI-LE,

HIPPI-SC and FC-PH projects by other means in the event that the results of re-evaluation of the New Work Item project ballots contained in JTC 1 N 2439-2442 are negative.

It was recommended that four International Standards ISO/IEC 9314-3, 9318-2, 9318-3 and 9318-4 be confirmed.

Concerning the division of work between SC 6 and SC 25, WG 4 discussed the fact of the experience accumulated for Telecommunications and information exchange between systems in SC 6 and for Interconnection of Information Technology Equipment in SC 25. The standards published and the projects prepared within the two subcommittees were also considered. WG 4 concluded that projects already started and in progress should be completed by the subcommittee presently in charge of the work. Future proposed new projects should be allocated to the body having the appropriate expertise and resources for the specific subject applying the evaluation diagram given in JTC 1 N 818.

WG 4 further concluded that FDDI is unambiguously within the scope of SC 25/ WG 4 and underdevelopment since the inception of the original proposal.

The Enhanced Small Device Interface (ESDI) (ISO/IEC DIS 10 222) camera-ready copy of the document was provided to the ITTF by the ANSI publisher in February 1992. The ITTF did not receive the copy and the IR will ask ANSI to send it again.

Concerning Fibre Channel (FC) Physical and Signaling Interface (PH) (ISO/IEC CD 14165-1) France voted no perhaps on a misunderstanding that the proposal was for fast track. Prof. They also asked to replace EIA/TIA and other US standards by IEC standards. Mr. Milligan confirmed that IEC standards will be used where possible. He also noted that the US is willing to cooperate with the IEC to investigate if some existing requirements can be replaced with IEC new standards. Mr. Cummings noted that the experts in the US have reported that IEC standards are not yet available in some areas. Mr. Cummings noted that French comments on changing the terminology of baud and Mb/s may be difficult to incorporate.

Mr. Milligan suggested that a note be added to the next revision of the document to the effect that any remaining EIA/TIA standards are referenced because no equivalent IEC standards exist, and that IEC standards to cover the remaining items will be initiated to be in place by the time of the five year review of the document.

On the (FDDI) CT-PICS, FDDI Conformance Testing (ISO/IEC CD 9314-13) the vote from Germany was negative at the request of ECMA since they felt that the lack of a normative reference to the formal description language ISO/IEC 9646-1 was a technical issue. It was surprising that the comment generated a negative since ISO/IEC 9646-1 was referenced in all of the related ATS drafts.

Concerning the failed ATA project proposal the other countries indicated that there was no need for international standards for interfaces internal to a cabinet. WG 4 decided not to request Fast Track.

CAM is different since it impacts operating systems and in that sense is beyond the cabinet in scope. It was agreed to discuss CAM at the next meeting after the members have had an opportunity to discuss the desired course of action regarding CAM.

WG 4 discussed the recommendations from Geneva concerning the ISO Patent Policy and agreed to be guided by the recommendations to include one of two specific patent notices in each standard.

Numerous other agenda items were completed as reflected in the twenty five resolutions offered on behalf of WG 4 for consideration by SC 25. Further reference to the work is contained in the WG 4 minutes and its registry of 18 Hoersholm documents.

WG 4 reiterated their concern that a key issue continues to be support of the WG 4 programme of work since the interface standards developed by this group through a very broad spectrum of international participants are focused down to fairly few participants at SC 25/ WG 4. These standards account for well over 35 million equipment shipments per year and more than tens of billions of industry revenue stated in the currencies with lower numerators. It would be a shame if this productive international activity were to be impeded by it being accomplished with too few direct participants to garner the minimum authorization requirement from JTC 1 even on projects which are essentially un-opposed and based upon fairly mature definitions. Participation may be accomplished by correspondence such as CD review.

Mr. Milligan raised the issue of the conflict in the JTC 1 directives between the passing rule of two-thirds; the failing impact of 25% negative (translates to 75% to pass); and the rule that abstentions do not count. The ITTF responded that more than P-Member votes are counted when calculating two-thirds (O-Member votes are counted) and only P-Members for the 25%. Mr. Milligan noted that this then was in conflict with the membership rules in the directives which states that O-Members are not allowed to vote.

The following resolutions were approved by SC 25 at its meeting on 8 July 1994.

Resolution WG 4/1

SC 25 instructs its Secretariat to determine from the ITTF the publication status of ISO/IEC DIS 9314-5 FDDI-HRC.

Resolution WG 4/2

SC 25 instructs its Secretariat to inform JTC 1 that it has determined that the level of active support from National Bodies for ISO/IEC DIS 9324 Storage Module Interface has fallen below that required by the ISO/IEC Procedures for Technical Work of ISO/IEC JTC 1 on Information Technology - Clause 2.1.3.11.

SC 25 further instructs its Secretariat to take the appropriate action to remove project 25.13.10.03 Storage Module Interface from the SC 25 programme of Work and to inform the ITTF that the registration of this project and its associated documents should be canceled.

Resolution WG 4/3

SC 25 authorizes the project editor to prepare the final text of ISO/IEC 9318-5 IPI-2 Tape, along with the Disposition of Comments report in SC 25 N 154, for submission to the SC 25 Secretariat and instructs the SC 25 Secretariat to forward the documents, upon receipt from the project editor, to the ITTF for publication of the IS.

Resolution WG 4/4

SC 25 authorizes the project editor to prepare the final text of ISO/IEC 9316-1 SCSI-2, along with the Disposition of Comments report, for submission to the SC 25 Secretariat and instructs the SC 25 Secretariat to forward the documents, upon receipt from the project editor, to the ITTF for publication of the IS.

Resolution WG 4/5

SC 25 authorizes the project editor to submit IPI Enhanced Physical to the SC 25 Secretariat as ISO/IEC DIS 9318-6 for circulation, along with the Disposition of Comments Report, to SC 25 and ITTF for registration as a DIS for a four-month ballot.

Resolution WG 4/6

SC 25 authorizes the project editor to submit FDDI-SMT to the SC 25 Secretariat as ISO/IEC DIS 9314-6 for circulation, along with the Disposition of Comments Report, to SC 25 and ITTF for registration as a DIS for a four-month ballot.

Resolution WG 4/7

SC 25 authorizes the project editor to submit FDDI-PHY-2 to the SC 25 Secretariat as ISO/IEC DIS 9314-7 for circulation, along with the Disposition of Comments Report, to SC 25 and ITTF for registration as a DIS for a four-month ballot.

Resolution WG 4/8

SC 25 authorizes the project editor to submit FDDI-MAC-2 to the SC 25 Secretariat as ISO/IEC DIS 9314-8 for circulation, along with the Disposition of Comments Report, to SC 25 and ITTF for registration as a DIS for a four-month ballot.

Resolution WG 4/9

SC 25 instructs its Secretariat to issue a survey among its national bodies requesting input on the following topic:

* Is there a continued interest in developing standards for interfacing between FDDI and SONET/SDH (reserved project 25.13.01.14)?

The secretariat is instructed to initiate this survey as soon as practical.

Resolution WG 4/10

SC 25 instructs its Secretariat to submit FDDI-SMT-ATS to the SC 25 Secretariat for registration as a CD and circulation for a three month letter ballot, upon receipt of a contribution from the US National Body.

Resolution WG 4/11

SC 25 instructs its Secretariat to submit FDDI-PHY-ATS to the SC 25 Secretariat for registration as a CD and circulation for a three month letter ballot, upon receipt of a contribution from the US National Body.

Resolution WG 4/12

SC 25 instructs its Secretariat to submit FDDI-PMD-ATS to the SC 25 Secretariat for registration as a CD and circulation for a three month letter ballot, upon receipt of a contribution from the US National Body.

Resolution WG 4/13

SC 25 instructs its Secretariat to submit FDDI-LCF-PMD to the SC 25 Secretariat for registration as a CD and circulation for a three month letter ballot, upon receipt of LCF-PMD Revision 2.0 as a contribution from the US National Body.

Resolution WG 4/14

SC 25 authorizes the project editor to submit FDDI-CT-PICS to the SC 25 Secretariat as ISO/IEC DIS 9314-13 for circulation, along with the Disposition of Comments Report, to SC 25 and ITTF for registration as a DIS for a four-month ballot.

Resolution WG 4/15

SC 25 authorizes the project editor to submit FDDI-MAC-ATS to the SC 25 Secretariat as ISO/IEC DIS 9314-26 for circulation, along with the Disposition of Comments Report, to SC 25 and ITTF for registration as a DIS for a four-month ballot.

Resolution WG 4/16

SC 25 authorizes the project editor to prepare the final text of ISO/IEC DIS 11 518-1 HIPPI-PH, along with the Disposition of Comments report in SC 25 N 154, for submission to the SC 25 Secretariat and instructs the SC 25 Secretariat to forward the documents, upon receipt from the project editor, to the ITTF for publication of the IS.

Resolution WG 4/17

SC 25 authorizes the project editor to submit HIPPI-FP Revision 4.3 to the SC 25 Secretariat as ISO/IEC DIS 11 518-2 for circulation, along with the Disposition of Comments Report, to SC 25 and to the ITTF, upon registration of the new project, for registration as a DIS for a four-month ballot.

Resolution WG 4/18

SC 25 authorizes the project editor to submit HIPPI-LE Revision 3.4 to the SC 25 Secretariat as ISO/IEC DIS 11 518-3 for circulation, along with the Disposition of Comments Report, to SC 25 and to the ITTF, upon registration of the new project, for registration as a DIS for a four-month ballot.

Resolution WG 4/19

SC 25 authorizes the project editor to submit HIPPI-SC Revision 2.6 to the SC 25 Secretariat as ISO/IEC DIS 11 518-6 for circulation, along with the Disposition of Comments Report, to SC 25 and to the ITTF, upon registration of the new project, for registration as a DIS for a four-month ballot.

Resolution WG 4/20

SC 25 authorizes the project editor to submit FC-PH Revision 4.4 to the SC 25 Secretariat as ISO/IEC DIS 14 165-1 for circulation, along with the Disposition of Comments Report, to SC 25 and to the ITTF, upon registration of the new project, for registration as a DIS for a four-month ballot.

Resolution WG 4/21

SC 25 directs its Secretariat to pursue the reevaluation of the results of the New Work Item project ballots for HIPPI-FP, HIPPI-LE, HIPPI-SC and FC-PH contained in JTC 1 N 2439-2442.

Resolution WG 4/22

SC 25 encourages WG 4 to continue the processing of the HIPPI-FP, HIPPI-LE, HIPPI-SC and FC-PH projects by other means in the event that the results of the re-evaluation of the New Work Item project ballots contained in JTC 1 N 2439-2442 are negative.

Resolution WG 4/23

SC 25 recommends to JTC 1 the following action with respect to the periodical review of standards:

- IS 9314-3: Confirm.
- IS 9318-2: Confirm.
- IS 9318-3: Revise.
- IS 9318-4: Revise.

Resolution WG 4/24

SC 25 resolves to instruct its Secretariat to request modification of the programme of work for IPI, HIPPI and FC (with suggested standard numbers and project numbers) as follows:

Project Number	Status	Standard #	Editor	Title
25.13.12.TBD		11 518-8	Truestedt	Reserved for HIPPI-ATM, HIPPI Mapping to ATM
25.13.13.TBD		14 165-X	Truestedt	Reserved for FC-ATM, Fibre Channel Mapping to ATM
25.13.13.TBD		14 165-X	Truestedt	Reserved for FC-EP, Fibre Channel Enhanced Physical

Resolution WG 4/25

SC 25 resolves to recommend to JTC 1 that the work on FDDI continue within SC 25, according to the Scope of SC 25, and that JTC 1 allocate new projects according to the present responsibilities of SC 6 and SC 25:

SC 6 for the exchange of information primarily between systems by means of WAN, MAN,, and LAN (e.g. CSMA/CD, Token Ring, Token Bus).

SC 25 for interfaces and for protocols required for the interconnection primarily within information systems (e.g. SCSI, HIPPI, FDDI, Fibre Channel).

This recommendation provides for the most efficient use of scarce, available resources.

11.1 Alternative ISO process [Allan]

Dal reported that X3T11 will send FC-SB to ECMA to try his proposal (see the minutes of the May Plenary). Gene reported that, relative to ATA, that Germany, Japan, and one other country are no longer interested in working on standards that are internal to a cabinet due to resource limitations. Gene noted that there are no legal requirements for ISO standards for interfaces that are internal to the cabinet; ANSI standards are sufficient.

Gene stated his opposition to sending our standards through ECMA because it prohibits small companies from participating in the international standards approval process. Tom Hanan raised an ISO 9001 concern that standards like ATA must be recognized by ISO. Gene said that ANSI standards are sufficient for ISO 9001. John said that ISO 9001 does not prevent the use of national standards.

12. Liaison Reports

12.1 X3T11 Liaison Report [Cummings]

Neil Wanamaker reported on X3T11 activities for Roger Cummings:

X3T11 met on June 22, 1994 with 78 persons attending. Three organizations were added as members, bringing the total membership of X3T11 to 51.

A letter has been received from the IBM X3 representative indicating acceptance of the X3T11-approved responses to the Second Public Review comments on the Fibre Channel (FC) Physical and Signaling Interface (FC-PH). Therefore FC-PH Revision 4.3, which includes changes corresponding to the comment responses, will shortly be forwarded for a BSR Review and publication.

The first Public Review of the FC Mapping to HIPPI Framing Protocol (FC-FP) closed with the only comments submitted coming from the ISO editor. The requested changes have been incorporated in the ISO version of the FC-FP, and do not affect the ANSI version. After some further editorial review, FC-FP will also be forwarded for a BSR Review and publication.

Comments from X3T11 Letter Ballots on the FC Arbitrated Loop (FC-AL) Revision 4.2 and FC Mapping of Single-byte Command Code Sets (FC-SB) Revision 3.0 are still being resolved, and the draft responses were reviewed and edited at the meeting. The new revisions are suitable for forwarding for the first Public Review are expected at or before the August X3T11 Plenary.

It was agreed to change the name of Project 959-D from FC Crosspoint Switch (FC-XS) to FC Switch Topology and Switch Control (FC-SW), to better reflect the independence of the draft from the specific crosspoint method of operation.

The June X3T11 meeting week had been previously established as the cutoff for technical proposals on items to be included in the next-generation FC Enhanced Physical (FC-EP). Items meeting this target date are:

. 2 and 4 gigabaud shortwave laser optical variants

- . Twinax-based variant @ 133, 266, 531, and 1062.5 megabaud
- . Hunt groups, striping and unacknowledged multicast features
- . Fractional bandwidth controls
- . Isochronous operation
- . Support for many levels of frame priority
- . Support for accepted security mechanisms

The FC Static Switch Project Proposal, which was included in the mailing, was not forwarded due to lack of a committed technical editor.

A considerable discussion took place on the subject of forwarding documents to ISO via the European Computer Manufacturers Association (ECMA). It was agreed to forward the FC-SB draft via this process as a test case.

12.2 SFF Industry Group [Allan]

SFF-8020 for ATAPI CD-ROM was approved for publication and forwarding to Global Engineering. The form factor documents for 1.3" and 1.8" drives were forwarded to EIA along with power connector pin dimensions.

Confusion has been caused by a PCI group which named itself Small Form Factor.

A new activity was proposed by Bill Ham to work on Very High Density Interconnects to take advantage of recent connector technology.

It was proposed that a library/source of information be established of products which comply/use SSF specifications.

12.3 IEEE P1394 [Marazas]

Formation by the IEEE of the ballot pool for voting upon the P1394 draft standard has just closed as of July 20, 1994. A preliminary report as of early July indicated over 100 persons are in the 1394 ballot pool. I expect the start of the 1394 review period to begin sometime in August. Revision 7.1 of the 1394 document will be mailed to participants in the ballot pool for their review, comment, and vote.

Revision 7.1 differs in very minor respects from revision 7.0 which was distributed to the X3T10 membership in the June mailing. There are no technical changes in revision 7.1 relative to revision 7.0. There are editorial changes in revision 7.1 introduced so as to bring the format of the draft standard into conformity to recent changes in IEEE editorial standards. It is expected that these editorial conformance changes will act so as to minimize style and format comments from various IEEE reviewers during the public review phase.

12.4 IT8 [Lohmeyer]

No report.

12.5 IEEE P1285 Status [Pak]

Dennis Pak provide an electronic report (see 94-155).

12.6 PCMCIA Report [McLean]

Larry Lamers gave the following report:

The PC-Card SCSI work group met briefly in the absence of Larry Barnes. A motion to support including I/O connectors in the PCMCIA specification passed. There was no action taken at the Card Physical meeting on the PC Card SCSI I/O connector.

No work was done on the proposed CIS for SCSI nor the software layering discussed at Gatwick. All the work items in PC Card ATA were completed in Gatwick. The group plans to meet in August only if some action by the Technical Committee needs attention.

There are intellectual property issues surrounding the release of the CARDBUS specification. It is anticipated that these will be resolved in time for the next PCMCIA specification release.

The Technical Committee did not accept the 3v5v proposal for editorial reasons. The committee did not want to vote yes on a document that they had not reviewed given the history of editorial problems with that document.

A new structure has been instituted within the PCMCIA organization called the X86 focus group. This is an outgrowth of earlier work done under ExCA and 'QuickSwap'. The intent of the X86 focus group is to work on compatibility and testing issues for X86 platforms. This group is looking for volunteers to lead efforts on specific card types. Rich Dvorchak of Intel is leading this effort (Rich_Dvorchak@ccm2.hf.intel.com).

12.7 AIIM C21 [Podio]

Acting in Fernando Podio's absence, John Lohmeyer moved that two log page codes be assigned to the C21 AIIM project. Both codes apply to optical memory devices. Page code 08h shall be assigned to the Media Error log page. Page code 09h shall be assigned to the Clear Media Error log page. The definition of these log pages will be delivered to X3T10 in document 94-113. The incomplete revision 1 of 94-113 can be found in the June mailing. Erich Oetting seconded the motion. The motion was approved 22:0:0:38.

George Penokie has sent comments to Fernando Podio regarding 94-113 usage of mode pages. George dislikes the variable length mode pages proposed in 94-113. George also suggested adding new mode pages instead of extending existing mode pages.

13. Review of Action Items

- 10) John Lohmeyer will contact Lynn Barra regarding the LOG SENSE TIB (X3T9.2/90-165) which is on hold.
- 21) George Penokie will prepare a revision of the LOG SENSE TIB.
- 22) Larry Lamers will contact X3 to learn the style requirements for a technical report (for use by Gary Stephens, GPP editor).
- 23) John Lohmeyer will forward the revised GPP project proposal 94-099r0 and negative letter ballot comments to X3 for further processing.
- 24) Gene Milligan will draft proposed procedures for periodic/timely publication of documents until a standard becomes dormant.
- 25) John Lohmeyer will generate letter ballots for the ATA-3 and ATAPI project proposals (94-019r4 and 94-022r4, respectively).

14. Meeting Schedule

The next plenary meeting of X3T10 will be September 15-16, 1994, in Houston, TX, at the Hotel Sofitel (713-445-9000), hosted by Compaq Computer. The meeting will begin at 1:00 pm on Thursday and at 8:30 am on Friday (if necessary).

The meeting list for the next plenary week is:

September '94 Meeting Map

	9	10	11	12	1	2	3	4	5	6	7	8	
Monday 9/12	+=====+												
	SCSI CAM Working Group												(25)
	+-----+												
	SSA electrical interface WG						SSA UIG						(30)
	+-----+												
	XOR commands SG						MMC WG						(20)
	+=====+												
Tuesday 9/13	+=====+												
	X3T10.1												(40)
	+-----+												
							SCSI-3 WG						(40)
	+-----+												
	SCC & RAB Joint Meeting												(40)
	+=====+												
Wednesday 9/14	+=====+												
	SCSI-3 WG												(45)
	+=====+												
Thursday 9/15	+=====+												
	ATA WG						X3T10 Plenary						(40/80)
	+=====+												
Friday 9/16	8	9	10	11	12	1	2						
	+-----+												
	X3T10 (*) / SFF												(80)
	+-----+												

(*) If X3T10 meeting runs until Friday, Small Form Factor will follow the X3T10 meeting; Otherwise, SFF starts at 8:30 am.
 Meetings marked with == are X3T10-authorized meetings.
 Meetings marked with -- are authorized by other groups and may change without notice.

Meeting Map Abbreviation Key:

ATA: AT Attachment (a.k.a. IDE)
 CAM: Common Access Method
 Gen Edit Sess: General Editing Session
 El: Electrical
 I/F: Interface
 LB: Letter Ballot
 MMC: SCSI-3 Multimedia Commands (CD-ROM)
 P1394: IEEE Project on High Performance Serial Bus (not an X3 activity)
 Plenary: Full Committee Meeting
 RAB: RAID Advisory Board (not an X3 activity)
 RAID: Redundant Array of Independent Devices
 SCC: SCSI-3 Controller Commands (RAID)
 SFF: Small Form Factor Industry Group (not an X3 activity)
 SG: Study Group
 SSA: Serial Storage Interface
 SSP: Serial Storage Protocol (Protocol for SSA)
 UIG: User Interest Group (not an X3 activity)
 WG: Working Group (same as Ad Hoc Group)
 X3T10: Lower Level Interfaces Technical Committee (was X3T9.2)
 X3T10.1: SSA Task Group of X3T10 (was X3T9.7)
 XOR: Exclusive OR

Several other X3T10 events are also planned:

Event	Day/Date	Time	Location/contact
ATA Working Group	Wed 8/31		
	9/1	9a - 5p	Bay Area/Finch
ATA Working Group	Thu 9/15	9a - 12p	Houston/Compaq
SCC Working Group	Tue 8/16	9a - 5p	Keystone/Penokie
SCC Working Group	Tue 9/13	9a - 5p	Houston/Penokie

For more information about X3T10 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) 321-1725 6363897@mcimail.com
MMC Study Group	Norm Harris	(408) 945-8600 x2230 nharris@adaptec.com
SSC Contact	Edward Lappin	(303) 447-7718 tedl@exabyte.com
SPC Contact	Ralph Weber	(603) 881-1497 weber@star.enet.dec.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@bcrvmpc2.vnet.ibm.com
SPI Contact	Larry Lamers	(408) 432-4776 71540.2756@compuserve.com
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The long-term X3T10 meeting week schedule is:

Date	Location	Host/Comments
Sep 12-16, 1994	Houston, TX	Compaq
Nov 7-11, 1994	Palm Springs, CA	Western Digital
Jan 8-13, 1995	Lake Tahoe, NV	SSI
Mar 5-10, 1995	Newport Beach, CA	QLogic
May 7-12, 1995	Harrisburg, PA	AMP
Jul 9-14, 1995	Colorado Springs, CO	AT&T/NCR Microelectronics
Sep 10-15, 1995	Manchester, NH	Digital
Nov 5-10, 1995	Southern CA	Western Digital

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 is automatically deferred to the plenary group.

Steve Finch moved and Erich Oetting seconded that X3T10 authorize the X3T10-related meetings and events in the list above. The motion passed unanimously.

15. Adjournment

The meeting was adjourned at 9:04 p.m. on Thursday July 21, 1994.

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72 People Present

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

Minutes of X3T10 Plenary Meeting #4 in Bedford, NH

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Minutes of X3T10 Plenary Meeting #4 in Bedford, NH

X3T10/94-150r1

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Minutes of X3T10 Plenary Meeting #4 in Bedford, NH

X3T10/94-150r1

Jul 26, 1994 - X3T10 Document Register - Enclosure (3)

X3T10/94-001R0 Date: 3/31/94 Author: J. Lohmeyer [4/15/94]
 Desc: Annual Report for X3T10
 Res:

X3T10/94-002R0 Date: 1/25/94 Author: J. Lohmeyer [2/15/94]
 Desc: X3T10 Project Status Summary
 Res:

X3T10/94-002R1 Date: 3/31/94 Author: J. Lohmeyer [4/15/94]
 Desc: X3T10 Project Status Summary
 Res:

X3T10/94-002R2 Date: 6/1/94 Author: J. Lohmeyer [6/15/94]
 Desc: X3T10 Project Status Summary
 Res:

X3T10/94-003R0 Date: 1/24/94 Author: J. Lohmeyer [2/15/94]
 Desc: Draft Agenda for X3T10 Meeting - Mar '94
 Res:

X3T10/94-004R0 Date: 1/1/94 Author: J. Lohmeyer [4/15/94]
 Desc: Draft Agenda for X3T10 Meeting - May '94
 Res:

X3T10/94-005R0 Date: 6/1/94 Author: J. Lohmeyer [6/15/94]
 Desc: Draft Agenda for X3T10 Meeting - July '94
 Res:

X3T10/94-006R0 Date: Author: J. Lohmeyer []
 Desc: Draft Agenda for X3T10 Meeting - September '94
 Res:

X3T10/94-007R0 Date: Author: J. Lohmeyer []
 Desc: Draft Agenda for X3T10 Meeting - November '94
 Res:

X3T10/94-008R0 Date: Author: J. Lohmeyer []
 Desc: Draft Agenda for X3T10 Meeting - January '95
 Res:

X3T10/94-009R0 Date: 5/25/94 Author: J. Lohmeyer [6/15/94]
 Desc: Jeopardy Letter - Attendance
 Res:

X3T10/94-009R1 Date: 5/25/94 Author: J. Lohmeyer [6/15/94]
 Desc: Jeopardy Letter - Letter Ballots
 Res:

X3T10/94-010R0 Date: 12/7/93 Author: G. Penokie [2/15/94]
 Desc: Minutes of Raid Study Group -12/93
 Res:

X3T10/94-011R0 Date: 1/11/94 Author: G. Penokie [2/15/94]
 Desc: Minutes of Raid Study Group - 1/94
 Res:

X3T10/94-012R0 Date: 1/21/93 Author: Lamers/Finch [2/15/94]
 Desc: Minutes of ATA Working Group - Jan '94
 Res:

X3T10/94-013R0 Date: 1/21/94 Author: Lamers/Lohmeyer [2/15/94]
 Desc: Minutes of General Working Group - Jan '94
 Res:

X3T10/94-013R1 Date: 1/28/94 Author: Lamers/Lohmeyer []
 Desc: Minutes of General Working Group - Jan '94
 Res:

X3T10/94-014R0 Date: 11/22/94 Author: R. Snively [2/15/94]
 Desc: Response to Comments for FCP
 Res:

X3T10/94-015R0 Date: 1/12/94 Author: R. Weber [2/15/94]
 Desc: Minutes of CAM Working Group -1/'94
 Res:

X3T10/94-016R0 Date: 1/21/94 Author: Lamers/Lohmeyer []
 Desc: Minutes of X3T10 Meeting #1 - Jan '94
 Res:

X3T10/94-016R1 Date: 1/25/94 Author: Lamers/Lohmeyer [2/15/94]
 Desc: Minutes of X3T10 Meeting #1 - Jan '94
 Res:

X3T10/94-016R2 Date: 1/30/94 Author: Lamers/Lohmeyer []
 Desc: Minutes of X3T10 Meeting #1 - Jan '94
 Res:

X3T10/94-017R0 Date: 1/13/94 Author: J. Scheible [2/15/94]
 Desc: Minutes of X3T10.1 Meeting #1 - Jan '94
 Res:

X3T10/94-018R0 Date: Author: R. Weber [2/15/94]
 Desc: Processor Commands for SPC
 Res:

X3T10/94-019R0 Date: 1/14/94 Author: S. Finch [2/15/94]
 Desc: Project Proposal ATA3-PH Standard
 Res:

X3T10/94-019R1 Date: 2/11/94 Author: S. Finch []
 Desc: Project Proposal ATA3-PH Standard
 Res:

Minutes of X3T10 Plenary Meeting #4 in Bedford, NH

X3T10/94-150r1

X3T10/94-019R2 Date: 3/30/94 Author: S. Finch [4/15/94]
 Desc: Project Proposal ATA3-PH Standard
 Res:

X3T10/94-020R0 Date: 1/14/94 Author: S. Finch [2/15/94]
 Desc: Project Proposal for ATA3-XPT Standard
 Res:

X3T10/94-020R1 Date: 2/11/94 Author: S. Finch []
 Desc: Project Proposal for ATA3-XPT Standard
 Res:

X3T10/94-020R2 Date: 3/30/94 Author: S. Finch [4/15/94]
 Desc: Project Proposal for ATA3-XPT Standard
 Res:

X3T10/94-021R0 Date: 1/14/94 Author: S. Finch [2/15/94]
 Desc: Project Proposal for ATA3-PI Standard
 Res:

X3T10/94-021R1 Date: 2/11/94 Author: S. Finch []
 Desc: Project Proposal for ATA3-PI Standard
 Res:

X3T10/94-021R2 Date: 3/30/94 Author: S. Finch [4/15/94]
 Desc: Project Proposal for ATA3-PI Standard
 Res:

X3T10/94-022R0 Date: Author: S. Finch [2/15/94]
 Desc: Project Proposal for ATA3-BC Standard
 Res:

X3T10/94-022R1 Date: 3/30/94 Author: S. Finch [4/15/94]
 Desc: Project Proposal for ATA3-BC Standard
 Res:

X3T10/94-022R1 Date: 2/11/94 Author: S. Finch []
 Desc: Project Proposal for ATA3-BC Standard
 Res:

X3T10/94-023R0 Date: 1/12/94 Author: B. Ham [2/15/94]
 Desc: Ultra-SCSI Update 1
 Res:

X3T10/94-024R0 Date: 1/5/94 Author: D. Hagerman [2/15/94]
 Desc: Error Handling for SCSI Controllers
 Res:

X3T10/94-025R0 Date: 1/5/94 Author: D. Hagerman [2/15/94]
 Desc: Additional Device Models
 Res:

X3T10/94-026R0 Date: 1/5/94 Author: D. Hagerman [2/15/94]
 Desc: Comments on SDA States
 Res:

X3T10/94-027R0 Date: 12/6/93 Author: R. Kalish [2/15/94]
 Desc: Proposal for Data CRC across the Cable
 Res:

X3T10/94-027R2 Date: 1/20/94 Author: R. Kalish [4/15/94]
 Desc: Proposal for Data CRC across the Cable
 Res:

X3T10/94-028R0 Date: Author: C. Monia [2/15/94]
 Desc: Summary of Proposed Responses to Comments on SAM, revision 12
 Res:

X3T10/94-029R0 Date: Author: C. Monia [2/15/94]
 Desc: Summary of Proposed SAM responses for Working Group Discussion
 Res:

X3T10/94-030R0 Date: Author: C. Monia [2/15/94]
 Desc: Key Issues from Review of SAM, Revision 12
 Res:

X3T10/94-031R0 Date: Author: G. Penokie [2/15/94]
 Desc: SCSI Logical Unit Addressing
 Res:

X3T10/94-031R1 Date: 2/8/94 Author: G. Penokie []
 Desc: SCSI Logical Unit Addressing
 Res:

X3T10/94-031R2 Date: 3/1/94 Author: G. Penokie [4/15/94]
 Desc: SCSI Logical Unit Addressing
 Res:

X3T10/94-032R0 Date: Author: G. Houlder [2/15/94]
 Desc: Message Handling
 Res:

X3T10/94-033R0 Date: Author: R. Snively [2/15/94]
 Desc: Fibre Channel Icon Proposal
 Res:

X3T10/94-034R0 Date: Author: OMC [2/15/94]
 Desc: Presentation on X3 Procedures
 Res:

X3T10/94-035R0 Date: Author: D. Hagerman [2/15/94]
 Desc: Project Proposal for SCSI-3 Controller Commands Standard
 Res:

X3T10/94-035R1 Date: 2/4/94 Author: D. Hagerman [4/15/94]
 Desc: Project Proposal for SCSI-3 Controller Commands Standard

Res:

X3T10/94-036R0 Date: Author: Lohmeyer/Harris [2/15/94]
 Desc: Project Proposal for Multi-Media Command Set Standard
 Res:

X3T10/94-036R1 Date: 2/4/94 Author: Lohmeyer/Harris [4/15/94]
 Desc: Project Proposal for Multi-Media Command Set Standard
 Res:

X3T10/94-037R0 Date: 1/14/94 Author: D. Pak [2/15/94]
 Desc: Liaison Report from P1285 - 1/94
 Res:

X3T10/94-038R0 Date: 1/20/94 Author: P. Aloisi [2/15/94]
 Desc: Proposed changes to SPI
 Res:

X3T10/94-038R2 Date: 5/1/94 Author: P. Aloisi [6/15/94]
 Desc: SCSI-3 SPI Issues
 Res:

X3T10/94-039R0 Date: 1/13/94 Author: D. Arnold [2/15/94]
 Desc: Call for Volunteers - X3T10
 Res:

X3T10/94-040R0 Date: 12/10/93 Author: G. Penokie [2/15/94]
 Desc: SCSI Disk Array Model
 Res:

X3T10/94-040R1 Date: 2/8/94 Author: G. Penokie []
 Desc: SCSI Disk Array Model
 Res:

X3T10/94-040R2 Date: 3/5/94 Author: G. Penokie []
 Desc: SCSI Disk Array Model
 Res:

X3T10/94-040R3 Date: 3/17/94 Author: G. Penokie [4/15/94]
 Desc: SCSI Disk Array Model
 Res:

X3T10/94-040R4 Date: 5/6/94 Author: G. Penokie []
 Desc: SCSI Disk Array Model
 Res:

X3T10/94-040R5 Date: 5/22/94 Author: G. Penokie [6/15/94]
 Desc: SCSI Disk Array Model
 Res:

X3T10/94-041R0 Date: 12/12/93 Author: G. Penokie [2/15/94]
 Desc: SDA States and Types
 Res:

X3T10/94-041R1 Date: 2/8/94 Author: G. Penokie []
 Desc: SDA States and Types
 Res:

X3T10/94-041R2 Date: 3/5/94 Author: G. Penokie []
 Desc: SDA States and Types
 Res:

X3T10/94-041R3 Date: 3/16/94 Author: G. Penokie [4/15/94]
 Desc: SDA States and Types
 Res:

X3T10/94-041R4 Date: 5/6/94 Author: G. Penokie []
 Desc: SDA States and Types
 Res:

X3T10/94-041R5 Date: 5/22/94 Author: G. Penokie [6/15/94]
 Desc: SDA States and Types
 Res:

X3T10/94-042R0 Date: 1/21/94 Author: G. Penokie [2/15/94]
 Desc: SDA Commands & Mode Pages
 Res:

X3T10/94-042R1 Date: 3/5/94 Author: G. Penokie []
 Desc: SDA Commands & Mode Pages
 Res:

X3T10/94-042R1 Date: 2/8/94 Author: G. Penokie []
 Desc: SDA Commands & Mode Pages
 Res:

X3T10/94-042R2 Date: 3/1/94 Author: G. Penokie []
 Desc: SDA Commands & Mode Pages
 Res:

X3T10/94-042R3 Date: 3/16/94 Author: G. Penokie [4/15/94]
 Desc: SDA Commands & Mode Pages
 Res:

X3T10/94-042R5 Date: 5/22/94 Author: G. Penokie [6/15/94]
 Desc: SDA Commands & Mode Pages
 Res:

X3T10/94-043R0 Date: 1/24/94 Author: C. Monia [2/15/94]
 Desc: Results of 1/11/94 SAM WG Review
 Res:

X3T10/94-044R0 Date: 1/24/94 Author: J. Lohmeyer [2/15/94]
 Desc: Letter Ballot on FCP
 Res:

Minutes of X3T10 Plenary Meeting #4 in Bedford, NH

X3T10/94-150r1

X3T10/94-045R0 Date: 1/28/94 Author: T. Hanan []
 Desc: 16.6 MB/Sec Timing
 Res:

X3T10/94-045R1 Date: 1/28/94 Author: T. Hanan []
 Desc: 16.6 MB/Sec Timing
 Res:

X3T10/94-045R2 Date: 1/28/94 Author: T. Hanan []
 Desc: 16.6 MB/Sec Timing
 Res:

X3T10/94-045R2 Date: 3/16/94 Author: T. Hanan []
 Desc: 16.6 MB/Sec Timing
 Res:

X3T10/94-045R3 Date: 3/31/94 Author: T. Hanan [4/15/94]
 Desc: 16.6 MB/Sec Timing
 Res:

X3T10/94-046R0 Date: Author: H. Landis [4/15/94]
 Desc: Master/Slave Issues
 Res:

X3T10/94-047R0 Date: 1/28/94 Author: R. Shergill [4/15/94]
 Desc: Minutes of ATA Working Group - 1/28/94
 Res:

X3T10/94-048R0 Date: Author: T. Hanan []
 Desc: Data Integrity Proposal
 Res: never supplied by tom

X3T10/94-049R0 Date: 2/7/94 Author: J. Lohmeyer [4/15/94]
 Desc: Public review comment on SPI re adding SCAM as normative annex
 Res:

X3T10/94-050R0 Date: 2/4/94 Author: W. Rinehuls [4/15/94]
 Desc: ltr Rinehuls to Lohmeyer re IEEE P1244.5 PINS
 Res:

X3T10/94-051R0 Date: 1/1/94 Author: J. Masiewicz []
 Desc: Comments/Recommendations on ATA-2 working draft
 Res:

X3T10/94-051R1 Date: 1/1/94 Author: J. Masiewicz [4/15/94]
 Desc: Comments/Recommendations on ATA-2 working draft
 Res:

X3T10/94-052R0 Date: 2/12/94 Author: T. Hanan []
 Desc: Proposed Change to Mode 4 T0 definition and diagrams
 Res: never received

X3T10/94-053R0 Date: 2/23/94 Author: R. Kalish []
 Desc: RESET on the Bus - ATA
 Res:

X3T10/94-053R1 Date: 3/31/94 Author: R. Kalish [4/15/94]
 Desc: RESET on the Bus - ATA
 Res:

X3T10/94-054R0 Date: 2/22/94 Author: T. Hanan [4/15/94]
 Desc: New Timing Modes
 Res:

X3T10/94-055R0 Date: 2/25/94 Author: Shergill/Finch [4/15/94]
 Desc: Minutes of ATA WG 23FEB94
 Res:

X3T10/94-056R0 Date: 2/25/94 Author: T. Hanan []
 Desc: DRQ Timing on Last Data Transfer
 Res: never received

X3T10/94-057R0 Date: 3/14/94 Author: N. Harris [4/15/94]
 Desc: Proposal for the working draft on Multit-Media Commands
 Res:

X3T10/94-058R0 Date: 2/25/94 Author: J. Masiewicz [4/15/94]
 Desc: Word 51,52, 64, 66 Revisions for comments
 Res:

X3T10/94-059R0 Date: 2/25/94 Author: G. Penokie [4/15/94]
 Desc: Minutes of RAID Study Group - 2/14/94
 Res:

X3T10/94-060R0 Date: 3/2/94 Author: Ham/Lohmeyer []
 Desc: Project Proposal for Fast-20 SCSI-3 Parallel Interface Standard
 Res:

X3T10/94-060R1 Date: 3/31/94 Author: Ham/Lohmeyer [4/15/94]
 Desc: Project Proposal for Fast-20 SCSI-3 Parallel Interface Standard
 Res:

X3T10/94-060R2 Date: 5/27/94 Author: Ham/Lohmeyer [6/15/94]
 Desc: Project Proposal for Fast-20 SCSI-3 Parallel Interface Standard
 Res:

X3T10/94-061R0 Date: 3/13/94 Author: Lamers/Lohmeyer/Ham []
 Desc: Fast-20 SCSI Proposal
 Res:

X3T10/94-061R1 Date: 3/25/94 Author: Lamers/Lohmeyer/Ham []
 Desc: Fast-20 SCSI Proposal
 Res:

X3T10/94-061R2 Date: 4/1/94 Author: Lamers/Lohmeyer/Ham [4/15/94]
 Desc: Fast-20 SCSI Proposal

Res:

X3T10/94-061R5 Date: 6/8/94 Author: Lamers/Lohmeyer/Ham [6/15/94]
 Desc: Fast-20 SCSI Proposal
 Res:

X3T10/94-062R0 Date: 3/10/94 Author: G. Penokie [4/15/94]
 Desc: Minutes of RAID Study Group - 3/14/94
 Res:

X3T10/94-063R5 Date: 3/10/94 Author: H. Landis [4/15/94]
 Desc: DMA Command Description Cleanup
 Res:

X3T10/94-064R1 Date: 3/10/94 Author: H. Landis [4/15/94]
 Desc: Power Managment Description Cleanup
 Res:

X3T10/94-065R0 Date: 3/10/94 Author: H. Landis [4/15/94]
 Desc: Master/Slave Handshaking
 Res:

X3T10/94-066R0 Date: 3/15/94 Author: Lamers/Finch [4/15/94]
 Desc: Minutes of ATA WG - March 14, 1994
 Res:

X3T10/94-067R0 Date: 2/2/94 Author: G. Houlder [4/15/94]
 Desc: Data Recovery on Deferred Errors
 Res:

X3T10/94-067R1 Date: 4/18/94 Author: G. Houlder [6/15/94]
 Desc: Data Recovery on Deferred Errors
 Res:

X3T10/94-068R0 Date: 3/16/94 Author: B. Ham [4/15/94]
 Desc: Ultra SCSI progress report
 Res:

X3T10/94-069R0 Date: 3/11/94 Author: R. Snively [4/15/94]
 Desc: Proposal for WRITE BUFFER command
 Res:

X3T10/94-070R0 Date: 3/21/94 Author: Lamers/Lohmeyer [4/15/94]
 Desc: Minutes of the X3T10 General Working Group - March 16, 1994
 Res:

X3T10/94-071R0 Date: 5/13/94 Author: R. Gannon [6/15/94]
 Desc: SCSI Cable Variations for SFF Consideration
 Res:

X3T10/94-072R0 Date: 3/21/94 Author: S. Finch [4/15/94]
 Desc: Minor errors in SPI
 Res:

X3T10/94-073R0 Date: 3/21/94 Author: B. Dallas [8/15/94]
 Desc: Minutes of CAM Working Group- 3/94
 Res:

X3T10/94-074R0 Date: 3/24/94 Author: Weber/Lohmeyer [4/15/94]
 Desc: Minutes of X3T10 Plenary Meeting #2
 Res:

X3T10/94-075R0 Date: 3/21/94 Author: E. Gardner [4/15/94]
 Desc: Presentation on ATM
 Res:

X3T10/94-076R0 Date: 3/21/94 Author: D. Pak [4/15/94]
 Desc: Liaison Report from P1285 - 3/95
 Res:

X3T10/94-077R0 Date: 3/21/94 Author: L. Barnes [4/15/94]
 Desc: Liaison Report from PCMCIA - 3/95
 Res:

X3T10/94-078R0 Date: 3/21/94 Author: R. Cummings [4/15/94]
 Desc: Liaison Report from X3T11-3/95
 Res:

X3T10/94-079R0 Date: 3/21/94 Author: J. McGrath []
 Desc: Comments on INQUIRY command
 Res:

X3T10/94-079R1 Date: 3/21/94 Author: J. McGrath [4/15/94]
 Desc: Comments on INQUIRY command
 Res:

X3T10/94-080R0 Date: 3/21/94 Author: J. McGrath []
 Desc: Comments on Download Microcode
 Res:

X3T10/94-080R1 Date: 3/21/94 Author: J. McGrath [4/15/94]
 Desc: Comments on Download Microcode
 Res:

X3T10/94-081R0 Date: 3/21/94 Author: J. McGrath [4/15/94]
 Desc: Comments on optional/mandatory features
 Res:

X3T10/94-082R0 Date: 3/21/94 Author: S. Smith [4/15/94]
 Desc: Quotation on SPI ANSI editing
 Res:

X3T10/94-083R0 Date: 3/21/94 Author: W. Burr [4/15/94]
 Desc: Liaison report from AIIM - 3/94
 Res:

Minutes of X3T10 Plenary Meeting #4 in Bedford, NH

X3T10/94-150r1

X3T10/94-084R0 Date: 3/21/94 Author: F. Podia [4/15/94]
 Desc: Media Error Reporting and Monitoring...
 Res:

X3T10/94-085R0 Date: 3/21/94 Author: G. Marazas [4/15/94]
 Desc: Letter Ballot comment resolution for SBP
 Res:

X3T10/94-086R0 Date: 3/23/94 Author: J. Scheible []
 Desc: Minutes of SSP Study Group - 3/94
 Res: never received

X3T10/94-087R0 Date: 3/30/94 Author: P. McLean [4/15/94]
 Desc: Secure Mode Command
 Res:

X3T10/94-088R0 Date: 3/30/94 Author: R. Shergill [6/15/94]
 Desc: Minutes of SPI-2 Working Group - 3/2/94
 Res:

X3T10/94-089R0 Date: 3/30/94 Author: H. Landis [6/15/94]
 Desc: Handling High Capacity Drives
 Res:

X3T10/94-090R0 Date: 3/31/94 Author: J. Lohmeyer [4/15/94]
 Desc: Letter Ballot for SAM Forwarding
 Res:

X3T10/94-091R0 Date: 3/31/94 Author: J. Lohmeyer [4/15/94]
 Desc: Letter Ballot for SBP Forwarding
 Res:

X3T10/94-092R0 Date: 3/31/94 Author: J. Lohmeyer [4/15/94]
 Desc: Letter Ballot for ATA-3 PH Project Proposal
 Res:

X3T10/94-093R0 Date: 3/31/94 Author: J. Lohmeyer [4/15/94]
 Desc: Letter Ballot for ATA-3 XPT Project Proposal
 Res:

X3T10/94-094R0 Date: 3/31/94 Author: J. Lohmeyer [4/15/94]
 Desc: Letter Ballot for ATA-3 PI Project Proposal
 Res:

X3T10/94-095R0 Date: 3/31/94 Author: J. Lohmeyer [4/15/94]
 Desc: Letter Ballot for ATA-3 BC Project Proposal
 Res:

X3T10/94-096R0 Date: 3/31/94 Author: J. Lohmeyer [4/15/94]
 Desc: Letter Ballot for Fast-20 Project Proposal
 Res:

X3T10/94-097R0 Date: 3/29/94 Author: J. Lohmeyer [4/15/94]
 Desc: Project Proposal for Serial Storage Protocol (SSP) Standard
 Res:

X3T10/94-098R0 Date: 3/31/94 Author: B. Ham [4/15/94]
 Desc: Ultra-SCSI Report to 3/31/94 WG
 Res:

X3T10/94-099R0 Date: 3/31/94 Author: G. Milligan [4/15/94]
 Desc: Project Proposal for GPP Technical Report
 Res:

X3T10/94-100R0 Date: 4/22/94 Author: G. Penokie [6/15/94]
 Desc: Minutes of RAID Study Group - 4/94
 Res:

X3T10/94-101R0 Date: 3/30/94 Author: R. Shergill [6/15/94]
 Desc: Minutes of ATA Working Group - 3/30/94
 Res:

X3T10/94-102R0 Date: 3/30/94 Author: R. Shergill [6/15/94]
 Desc: Minutes of ATA Working Group - 4/30/94
 Res:

X3T10/94-103R0 Date: 5/9/94 Author: V. Novak [6/15/94]
 Desc: Proposed Annex for Ultra Fast SCSI Node Capacitance
 Res:

X3T10/94-103R1 Date: 6/1/94 Author: V. Novak [6/15/94]
 Desc: Proposed Implementor's Note for FAST-20 Node Capacitance
 Res:

X3T10/94-103R2 Date: 6/23/94 Author: V. Novak [8/15/94]
 Desc: Proposed Implementor's Note for FAST-20 Node Capacitance
 Res:

X3T10/94-104R0 Date: 5/17/94 Author: K. Cummings []
 Desc: Downloading Microcode using WRITE BUFFER
 Res:

X3T10/94-104R1 Date: 5/31/94 Author: K. Cummings [6/15/94]
 Desc: Downloading Microcode using WRITE BUFFER
 Res:

X3T10/94-104R3 Date: 5/31/94 Author: K. Cummings [8/15/94]
 Desc: Downloading Microcode using WRITE BUFFER
 Res:

X3T10/94-105R0 Date: 5/13/94 Author: R. Weber [6/15/94]
 Desc: KeyIssues in SPC
 Res:

X3T10/94-106R0 Date: Author: R. Weber [6/15/94]
 Desc: RESERVE & RELEASE issues in SPC

Minutes of X3T10 Plenary Meeting #4 in Bedford, NH

X3T10/94-150r1

Res:
X3T10/94-106R1 Date: 7/9/94 Author: R. Weber [8/15/94]
Desc: RESERVE & RELEASE in SPC
Res:
X3T10/94-107R0 Date: Author: Weber/Lohmeyer [6/15/94]
Desc: Minutes of SCSI General Working Group - May 19, 1994
Res:
X3T10/94-108R0 Date: Author: G. Penokie [6/15/94]
Desc: Minutes of RAID Study Group - 5/94
Res:
X3T10/94-109R0 Date: 5/12/94 Author: R. Snively [6/15/94]
Desc: Response to Comments on FCP Letter Ballot
Res:
X3T10/94-110R0 Date: 5/12/94 Author: Motoyama/Weber [6/15/94]
Desc: Scanner Window Descriptor Bytes Proposal
Res:
X3T10/94-110R1 Date: 6/22/94 Author: Motoyama/Weber [8/15/94]
Desc: Scanner Window Descriptor Bytes Proposal
Res:
X3T10/94-111R0 Date: 5/2/94 Author: G. Houlder [6/15/94]
Desc: RAID 5 Support on SCSI Disk Drives
Res:
X3T10/94-111R2 Date: 7/13/94 Author: G. Houlder [8/15/94]
Desc: RAID 5 Support on SCSI Disk Drives
Res:
X3T10/94-112R0 Date: 5/13/94 Author: C. Monia [6/15/94]
Desc: Proposed Responses to LB comments on SAM rev 13
Res:
X3T10/94-113R0 Date: 5/18/94 Author: F. Podio [6/15/94]
Desc: AIIM C21 Liason Report
Res:
X3T10/94-114R0 Date: 5/19/94 Author: Lamers/Finch [6/15/94]
Desc: Minutes of ATA WG - May 19,1994
Res:
X3T10/94-115R0 Date: 5/17/94 Author: J. Geldman [6/15/94]
Desc: Comments on ATA Revision 2c
Res:
X3T10/94-116R0 Date: 5/5/94 Author: B. Ham [6/15/94]
Desc: Fast 360 SCSI Single Ended
Res:
X3T10/94-117R0 Date: 5/19/94 Author: J. Lohmeyer [6/15/94]
Desc: SBP Forwarding Letter Ballot Comments
Res:
X3T10/94-118R0 Date: 5/19/94 Author: J. Lohmeyer [6/15/94]
Desc: SAM Forwarding Letter Ballot Comments
Res:
X3T10/94-119R0 Date: 5/19/94 Author: J. Lohmeyer [6/15/94]
Desc: FAST-20 Project Proposal Letter Ballot Comments
Res:
X3T10/94-120R0 Date: 5/19/94 Author: J. Lohmeyer [6/15/94]
Desc: ATA-3 Project Proposals Letter Ballot Comments
Res:
X3T10/94-121R0 Date: 5/13/94 Author: D. Allan [6/15/94]
Desc: ISO Standards
Res:
X3T10/94-122R0 Date: 5/8/94 Author: S. Smith [6/15/94]
Desc: Invoice for SPI
Res:
X3T10/94-123R0 Date: 5/22/94 Author: Weber/Lohmeyer [6/15/94]
Desc: Minutes of X3T10 Meeting #3 - 5/94
Res:
X3T10/94-124R0 Date: 5/23/94 Author: J. Lohmeyer [6/15/94]
Desc: Letter Ballot on GPP Project Proposal for Technical Report
Res:
X3T10/94-125R0 Date: 4/13/94 Author: D. Bensimon [6/15/94]
Desc: Security Command Patent Policy Letter from IBM
Res:
X3T10/94-126R0 Date: 5/13/94 Author: J. Lohmeyer [6/15/94]
Desc: Acceptance of Public Review Comment #1 on SPI
Res:
X3T10/94-127R0 Date: 3/28/94 Author: J. Lohmeyer [6/15/94]
Desc: Reaffirmation of ESDI
Res:
X3T10/94-128R0 Date: 5/25/94 Author: T. Lappin [6/15/94]
Desc: Enhanced READ BUFFER Command for Tape
Res:
X3T10/94-129R0 Date: 6/1/94 Author: C. Monia [6/15/94]
Desc: Comment Resolution on SAM
Res:

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X3T10/94-150r1

X3T10/94-130R0 Date: 6/1/94 Author: J. Lohmeyer [6/15/94]
Desc: Proposal for for Control Mechanism for Reserved Handling
Res:

X3T10/94-131R0 Date: 6/2/94 Author: Lamers/Lohmeyer [6/15/94]
Desc: Minutes of FAST-20 Study Group - 6/2/94
Res:

X3T10/94-132R0 Date: 5/24/94 Author: D. Allan [6/15/94]
Desc: Letter to ECMA on processing standards
Res:

X3T10/94-133R0 Date: 6/7/94 Author: Lamers/Lohmeyer [6/15/94]
Desc: SCAM Annex Proposal
Res:

X3T10/94-134R0 Date: 5/18/94 Author: M. Greene [6/15/94]
Desc: P1394 Permission to reproduce for T10 Mailing
Res:

X3T10/94-135R0 Date: 6/8/94 Author: J. Marazas [6/15/94]
Desc: SBP Letter Ballot Comment Resolution
Res:

X3T10/94-136R0 Date: 5/17/94 Author: B. Dallas [6/15/94]
Desc: Minutes of CAM Working Group- 5/94
Res:

X3T10/94-137R0 Date: 5/28/94 Author: E. Lappin [6/15/94]
Desc: READ POSITION Command for SSC
Res:

X3T10/94-138R0 Date: 6/21/94 Author: Lamers/Penokie [8/15/94]
Desc: Minutes of the X3T10 SCC Working Group - 6/21/94
Res:

X3T10/94-139R0 Date: 6/21/94 Author: R. Shergill [8/15/94]
Desc: Minutes of ATA Working Group - 6/1/94
Res:

X3T10/94-140R0 Date: 6/29/94 Author: W. Dallas [8/15/94]
Desc: Public Review Comments on CAM
Res:

X3T10/94-141R0 Date: 6/29/94 Author: R. Shergill [8/15/94]
Desc: Minutes of ATA Working Group - 7/29/94
Res:

X3T10/94-142R0 Date: 7/13/94 Author: B. Galloway []
Desc: Data Transfer Rate Negotiation
Res:

X3T10/94-142R1 Date: 7/21/94 Author: B. Galloway [8/15/94]
Desc: Data Transfer Rate Negotiation
Res:

X3T10/94-143R0 Date: 7/15/94 Author: N. Mori [8/15/94]
Desc: Japanese Comments on CD 9316-1 (SCSI-2)
Res:

X3T10/94-144R0 Date: 7/15/94 Author: ISO [8/15/94]
Desc: Reference to patent rights
Res:

X3T10/94-145R0 Date: 7/20/94 Author: G. Penokie [8/15/94]
Desc: Minutes of SCC Working Group - 7/19/94
Res:

X3T10/94-146R0 Date: 7/7/94 Author: K. Cummings []
Desc: Proposal for FORMAT MEDIUM command for Sequential Access Devices
Res:

X3T10/94-146R1 Date: 7/20/94 Author: K. Cummings [8/15/94]
Desc: Proposal for FORMAT MEDIUM command for Sequential Access Devices
Res:

X3T10/94-147R0 Date: 7/7/94 Author: K. Cummings []
Desc: Request for New Density Codes for Sequential Access Medium
Res:

X3T10/94-147R1 Date: 7/7/94 Author: K. Cummings [8/15/94]
Desc: Request for New Density Codes for Sequential Access Medium
Res:

X3T10/94-148R0 Date: 7/7/94 Author: K. Cummings []
Desc: Request for New ASC/ASCQ Code
Res:

X3T10/94-148R1 Date: 7/20/94 Author: K. Cummings [8/15/94]
Desc: Request for New ASC/ASCQ Code
Res:

X3T10/94-149R0 Date: 7/20/94 Author: Weber/Lohmeyer [8/15/94]
Desc: Minutes of SCSI Working Group - 7/20/94
Res:

X3T10/94-150R0 Date: 7/22/94 Author: Weber/Lohmeyer [8/15/94]
Desc: Minutes of X3T10 Meeting #3 - July, '94
Res:

X3T10/94-151R0 Date: 7/20/94 Author: B. Ham [8/15/94]
Desc: FAST-20 Test Results on 25pf
Res:

X3T10/94-152R0 Date: 7/20/94 Author: T. Lappin [8/15/94]
Desc: Partition Mode Pages for Tape

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X3T10/94-150r1

Res:

X3T10/94-153R0 Date: 7/21/94 Author: Lamers/Finch [8/15/94]
Desc: Minutes of ATA Working Group - July 21, 1994
Res:

X3T10/94-154R0 Date: Author: R. Heineman [8/15/94]
Desc: Power Modes
Res:

X3T10/94-155R0 Date: 7/15/94 Author: D. Pak [8/15/94]
Desc: Liaison Report P1285
Res:

X3T10/94-156R0 Date: 7/21/94 Author: J. Chen [8/15/94]
Desc: Comments on ATA-2d
Res:

X3T10/94-157R0 Date: 7/13/94 Author: S. Smith [8/15/94]
Desc: Quotation on ATA ANSI editing
Res:

X3T10/94-158R0 Date: 7/13/94 Author: K. Shrock [8/15/94]
Desc: Quotation on SIP conversion to Framemaker
Res:

X3T10/94-159R0 Date: 7/20/94 Author: B. Dallas [8/15/94]
Desc: Minutes of CAM Working Group - 7/94
Res:

X3T10/94-160R0 Date: 4/5/94 Author: R. Whiteman [8/15/94]
Desc: Device & Cable 0.8 mm Champ Connectors
Res:

X3T10/94-161R0 Date: 7/15/94 Author: S. Smyers [8/15/94]
Desc: Proposed Changes to SBP Isochronous Data Handling
Res:

X3T10/94-162R0 Date: 7/20/94 Author: B. Ham [8/15/94]
Desc: FAST-XX SCSI new project proposals
Res:

X3T10/94-163R0 Date: 7/21/94 Author: B. Ham [8/15/94]
Desc: Fast-20 SCSI Device Capacitance Value
Res: