Accredited Standards Committee*
X3, Information Processing Systems

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Date: July 22, 1994
Project:
Ref. Doc.:
Reply to: John Lohmeyer

To: Membership of X3T10

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

Subject: Minutes of X3T10 Plenary Meeting #4
           Bedford, NH -- July 21-22, 1994

Agenda

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

Results of Meeting

1.   Opening Remarks

John Lohmeyer, the Acting 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.

2.   Approval of Agenda

The draft agenda was approved with the following additions:

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.

John introduced Janet Burnham-Sauter from Global Engineering Documents. Global is developing a hypertext representation of the SCSI, IPI, HIPPI, and ATA documents. The documents will be distributed electronically by Global on CDs. Global will be charging a subscription fee. Ed Gardner asked about copyright restrictions.

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.,
Samsung Semiconductor.

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

The X3T10 membership is now at 60 organizations equal to 60 organizations. 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 SCSI Reflector E-mail list. To be added 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 Schieble 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 reported that the published SCSI-2 document 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 rework 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 authorized professional work on the AT
document. Eric 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 accept 2b as working draft for 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 a letter ballot 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, eventhough 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 Hannon 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 that revision of the 14 of the 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 SIP to SAM.

Gary Stephens moved that in the process of editing the SIP dual port documents to SAM the two ports 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 last mailing, or the mailing before that. The major difficulty with revision 13 is incorporating SCAM.   Larry could not guaranteed that 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 a $2,000 quotation for converting SIP from WordPerfect 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]

Gerry 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 $R = (I + N/D)$.
    (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 project was acceptance of the comments resolutions and forwarding of FCP to public review.

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 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]

Eric reported that revision 1 is the draft of record for the SMC. Eric 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 that absence of an editor. He said that someone called him to say that them might want to be the editor.

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)

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- 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.

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

X3 approved adopting ISO 9315:1989 as an American National Standard (X3 LB 2347) by a vote of 24-0-2-4. ANSI BSR approval was expected in June. The standard will be designated: ANSI/ISO/IEC 9315:1989[1994]. Essentially, ANSI has adopted the ISO equivalent.

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 was approved 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.

John also mentioned a that the working group has approved changing the slew rate from 540 ns to 520 ns. The change makes Fast-20 consistent with SCSI-2.

9.   Old Business

9.1   Technical Information Bulletins

George is working on a revision of the Log Sense TIB. Gary has given a copy of the Tape TIB to Ted. There was some confusion regarding the owner of the Tape TIB.

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 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. After a lengthy discussion, 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-___, 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.

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 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

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 then covered 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. The 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 presented his request for a 3490E density code. Ken also asked for two density codes for himself and one for Storage Tek 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 a New ASC/ASCQ Code (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.

10.13 Differential Sense [Snivley]

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? I.E. 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.

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

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

Ted presented his proposal to enhance the stream command READ POSITION to return all position information in a single Data-In buffer response. George Penokie 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.

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. 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 McGrath/Gardner 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 approved for electronic distribution by Global Engineering Documents:

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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 Hannon 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 ANSI 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 ben 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 establish 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]

12.6 PCMCIA Report [McLean]

12.7 AIIM C21 [Podio]

Acting for Fernando's in his 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. Eric Oetting seconded the motion. The motion was approved 22:0:0:38.

George Penokie has sent comments regarding 94-113 usage of mode pages. George dislikes the variable length mode pages proposed in 94-113. George suggests 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

```
Monday 9/12       9   10  11  12  1   2   3   4   5   6   7   8
                  +========================================+
                  | SCSI CAM Working Group                 |  (25)
                  +============================+===========+
                  | SSA elec. interface WG     | SSA UIG   |  (30)
                  +===============+============+===========+
                  | XOR cmds WG   | MMC WG     |              (20)
                  +===============+============+


Tuesday 9/13      9   10  11  12  1   2   3   4   5   6   7   8
                  +========================================+
                  |    X3T10.1                             |  (40)
                  +==================+=====================+
                                     |       SCSI-3 WG     |  (40)
                  +==================+=====================+
                  | SCC & RAB Joint Meeting    |              (40)
                  +============================+

Wednesday 9/14    9   10  11  12  1   2   3   4   5   6   7   8   9
                  +=========================================+
                  | SCSI-3 WG                               |  (45)
                  +=========================================+

Thursday 9/15     9   10  11  12  1   2   3   4   5   6   7   8   9
                  +=============+===========================+
                  | 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
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)
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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
SIP Contact	Larry Lamers	(408) 432-4776 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 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 Eric 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.

Meeting Attenders -- Enclosure (1)

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          Name           S      Organization        Electronic Mail Address
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__ People Present

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