Accredited Standards Committee*
National Committee for Information Technology Standards (NCITS)

To: Membership of T10

From: Ralph Weber, Secretary T10
                John Lohmeyer, Chair T10

Subject: Minutes of T10 Plenary Meeting #21
                Natick, MA -- May 8, 1997

Agenda

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Results of Meeting

1. Opening Remarks

John Lohmeyer, the T10 Chair, called the meeting to order at 1:03 p.m., Thursday May 8, 1997. He thanked Charles Monia of Digital Equipment Corp. for hosting the meeting.

John said that NCITS Subgroup Membership forms and the T10 Mailing Subscription form were available from Larry Lamers or himself at the head table. He said that people should use the NCITS forms to insure the NCITS Secretariat has the latest membership information. These forms should be mailed directly to the NCITS 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 T10 were made available to those attending.

2. Approval of Agenda

The draft agenda was approved with the following additions:

> 9.2 Deletion of SCAM from SPI-2 and HAP [Milligan]
> 10.2.1 Bus Set Delay Reduction (97-116) [Ham]
> 10.2.2 Additional ASC/ASCQs for SCC-2 (97-170 r1) [Penokie]
> 10.6 Accept ANSI Editor Comments on SPIamend [Lamers]
> 10.7 Accept ANSI Editor Comments on SES [Snively]

3. Attendance and Membership

The membership requirements were reviewed. NCITS rules permit one vote per organization. An individual from a new organization must attend two out of three consecutive plenary meetings. He/she may apply for voting membership the second meeting via a letter to the Chair of T10. The individual may vote at the second plenary meeting. Working group meetings do not count toward attendance requirements.

Organizations must also pay the NCITS Service Fee ($300) to maintain membership. The ANSI International Program Fee (also $300) is billed at the same time. On April 2nd, 29 individuals were terminated for non-payment of fees. This resulted in Amdahl Corp. being dropped from the T10 voting membership. John noted that most of the other people dropped for failure to pay the NCITS fees were people who had not been attending T10 meetings for sometime.

The Chair said he had sent letters to 12 people from 4 organizations informing them that their membership was in jeopardy due to non-attendance (see 97-010r0) and that their membership would be terminated if they did not attend this meeting. One organization, Amdahl, was already dropped for nonpayment of fees. The other organizations in jeopardy were:

Fujitsu
Iomega Corp., and
Oak Technology, Inc.

All of the organizations were present except:

Iomega Corp.

They were terminated due to lack of attendance (i.e., the principal member was changed to observer status and the alternate member was dropped).

No organizations applied for and received membership or a reinstated membership at this meeting.

The T10 membership during the meeting was 51 organizations down from 53 organizations last time. Enclosure (1) is the list of the people present at the meeting and enclosure (2) is the current T10 membership list.

4. Approval of Minutes - March Meeting San Diego, CA (T10/97-139r1)

The minutes were approved as written.

Upon request from Ed Gardner, the International Representative reported that the recommendations described in the ISO electronic report during the March meeting were recommendations made by T11 and acted upon by the T11 International Representative.

5. Document Distribution

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

Larry Lamers requested that all documents for the next mailing be in his hands in electronic format by 10:30 a.m. on Thursday May 15, 1997. Documents received after this time will go into a subsequent mailing.

Larry Lamers reminded the committee of the requirements for document submission to be included in the committee mailing. Since T10 meets its document archiving requirements by including the NCITS Secretariat on the mailing list, documents included in the mailing must be suitable for archiving. This means that native-format electronic originals with proper identification must be submitted. Document T10/95-147 contains the list of requirements for submissions. Document T10/95-361r0 contains instructions for expeditious delivery of documents to Larry.

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

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

John described recent efforts to provide access to all committee documents on the T10 web site. He noted that all 1996 and 1997 documents should be available on the T10 web site and all committee draft standards should be on the web site. John noted that the committee leadership is working to add an HTML file that points to mailing files in the root directory on the mailing CD.

To be added to the SCSI Reflector, send an email to majordomo@symbios.com with the line 'subscribe scsi' in the message body. The NCITS Secretariat maintains a World Wide Web page at http://www.ncits.org/. Symbios Logic maintains a World Wide Web page on behalf of T10 at http://www.symbios.com/x3t10/.

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. This document is also on the WWW at http://www.ncits.org/help/ansi_sdo.html. Annex I contains the ANSI patent policy. Amy Marasco manages patent issues for ANSI and can be contacted at amarasco@ansi.org or 212-642-4954.

Charles Monia reported that the terms and conditions for licensing the Digital 'SCAM patent' have been announced publicly. He further reported that terms and conditions will be a one-time license fee of $7,500 for a non-exclusive license.

7. Review of Old Action Items

208)   Bob Snively will forward 97-101r2 to IEEE under cover of a letter authorized by the T10 chair, and copy
            the chair and the committee document archive. *Carryover*
209)   Larry Lamers will update the SPI Amendment patent statement based on the declaration by Digital.
            Complete
210)   John Lohmeyer will forward MMC rev 10 NCITS for processing toward second public review.
            Complete.
211)   John Lohmeyer will respond to those who commented during the first public review of MMC. *Complete.*

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212)   John Lohmeyer will forward SSA-PH2 rev 5 to NCITS for further processing toward first public review. *Complete.*
213)   John Lohmeyer will forward SSA-TL2 rev 5a to NCITS for further processing toward first public review. *Complete.*
214)   John Lohmeyer will forward SSA-S3P rev 5 to NCITS for further processing toward first public review. *Complete.*
215)   John Lohmeyer will forward 97-129r2 (the SSS project proposal) to NCITS for further processing. *Complete.*
216)   Ralph Weber will prepare SPC rev 11a. *Complete.*
217)   John Lohmeyer will forward SPC rev 11a to NCITS as a replacement for SPC rev 11. *Complete.*
218)   John Lohmeyer will inform NCITS that T10 recommends the withdrawal ANSI X3.268-1997 (Serial Bus Protocol). *Complete.*
219)   Gene Milligan will submit MMC to ISO. *Carryover*
220)   Gene Milligan will submit SPIamend to ISO. *Carryover*
221)   Gene Milligan will submit SPC rev 11a to ISO. *Carryover*
222)   Gene Milligan will submit SBC to ISO. *Carryover*
223)   Gene Milligan will submit the SCAM patent letter through the proper channels to ISO/IEC and supply a replacement patent statement for SPI to ISO/IEC. *Carryover*
224)   Gene Milligan will take the necessary actions at SC25 to withdraw the international version of ANSI X3.268-1997 (Serial Bus Protocol). *Complete*

8. Subgroup and/or Project Status Reports

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

John Lohmeyer said that the current T10 project status summary was included in the T10 Information Packages and will be included in the mailing as usual.

The OMC committee met this week in Scottsdale, AZ. John and Gene Milligan attended via telephone and Roger Cummings attended in person to give the T10, T11, T12, and T13 annual reports. OMC took the following actions on T10 topics:

1. SSA-PH2, SSA-TL2, and SSA-S3P were on the consent agenda for compliance review. They all passed. These draft standards are at first public review, which closes June 24, 1997.
2. The project proposal for the SCSI Socket/SSL Services (SSS) Command Set was accepted with some minor changes to the liaison organizations. Most notably, IEEE/CS/PASC (Portable Application Standards Committee) was added to the list of other related domestic standards efforts.
3. The management review on X3.301 (SPC) passed.

OMC also re-assured the T10 chair that they have no intention to limit electronic availability of committee documents and working drafts. In fact, they are investigating free electronic web access of all NCITS standards.

8.2 T10.1 Task Group Report [Lamers]

Larry Lamers reported that the public review of the T10.1 second-generation SSA documents will close on 24 June. He had no other report.

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

John Lohmeyer reported that the SPI Amendment #1 completed first public review on April 29,1997. No comments were received. ANSI pre-edit information was received during the public review. The amendment is now ready for NCITS letter ballot.

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

George Penokie announced that he has not yet received the editor's copy of SIP.

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

Bill Dallas announced that the revision 2 of CAM-3 is almost complete. He noted that CAM-3 allows for other protocol types, automatic recognition of configuration, automatic recognition of configuration changes, and provides for auto-sense data. Bill also described the plans for revision 3 of CAM-3. Bill reported that CAM-3 should be ready for forwarding in January 1998.

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

In March, T10 recommended that SBP be withdrawn. OMC addressed this recommendation at their Scottsdale meeting this week and has recommended that NCITS withdraw the standard. Press releases have been circulated regarding the withdrawal, and attempts have been made to contact anyone who ever purchased a copy of SBP from Global Engineering. The next step is a public review on this recommendation.

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

Ralph Weber reported that SPC has received management approval from OMC and a NCITS letter ballot closes around 20 May. Forwarding to BSR is a matter of weeks away.

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

Gene Milligan announced that the SBC first public review closes on May 27, 1997. He noted that the cover page included two dates for the completion of the public review. Gene and John stated a belief that the latter date will be honored by NCITS. [Note: The earlier date, 29 April 1997, was left over from a previous press release.] Gene reported that the ANSI pre-edit mark-up has been completed. He plans to incorporate the ANSI changes by the next meeting.

Gene Milligan moved that the ANSI pre-edits be accepted as non-substantive and that the technical editor be authorized to prepare SBC revision 8a including only the ANSI pre-edit comments to send for further NCITS processing if no public review comments are received. Paul Aloisi seconded the motion. The motion passed 28:0:0:23=51.

Gene Milligan took an action item to prepare SBC revision 8a. John Lohmeyer took an action item to forward SBC revision 8a to NCITS for further processing, if no public review comments are received.

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

In the absence of Ted Lappin, John Lohmeyer reported that numerous comments have been received in response to the letter ballot vote on forwarding SSC to first public review (see 10.1). John said that review of the responses to the letter ballot comments should occur on the SCSI Reflector and at the July meeting.

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

Erich Oetting reported on the activities of the SMC/SSC working group (minutes in 97-188). He reported that one issue still needs to be resolved in SMC prior to the T10 forwarding letter ballot. The goal for the letter ballot is after the July meeting.

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

George Penokie reported that SCC has been published – as Project Editor, he had received a complimentary copy of the published SCC. (Since this project is now complete, SCC will be removed from the next agenda.)

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

Ron Roberts gave an oral report to the committee and provided the following written report for the minutes.

⇒ Document revision 10 was forwarded for further processing as of the March meeting.
⇒ Received mark-up from ANSI editors. Editing was done against revision 09. The working group reviewed all of the mark-ups and accepted all as editorial in nature. A revision 10a has been generated and will be in the next mailing.
⇒ No meeting specific to MMC is scheduled.

John Lohmeyer reported that the second public review of MMC closes on 22 July 1997.

Ron Roberts moved that the ANSI pre-edit changes in MMC revision 10a be accepted as non-substantive. Rob Reisch seconded the motion. The motion passed 33:0:0:18=51.

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

Bill Ham reported that the working group has been spending most of its energy on the next generation of parallel SCSI (minutes in 97-175). He noted that work is continuing on specifying the single-ended termination.

John Lohmeyer reported that Larry Lamers will be unable to finish the integration work on SPI-2. John indicated that another person has been asked to take-over the technical editor work on SPI-2.

John also noted that Adaptec has brought to the committee's many issues related to parallel SCSI transfer rates beyond 40 Mega transfers per second. He described briefly the effect of this work on the meeting schedule. This work (beyond Fast-40 transfer rates) will be investigated as a study group. If there is merit to standardizing this work, then a separate project proposal will be in order.

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

Bill Ham complemented those who participated in the EPI review (minutes in 97-176). He stated that revision 9 of EPI is ready for distribution. He described the grounding and REQ/ACK counting topics discussed during the EPI review. He noted that future topics will be bridging expanders and initialization of segments.

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

Bob Snively reported no progress on FCP-2. He described his concerns regarding the wording about service interfaces in FCP-2. He requested time during the next working group meeting to consider the requirements around service interface descriptions. Bob reported that his planned forwarding date for FCP-2 is May 1998.

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

John reported that the Boot Considerations Technical Report was withdrawn and this item will be removed from future agendas.

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

Subsequent to the T10 plenary meeting in San Diego, the SBP-2 ad hoc working group met in San Jose, CA, on Thursday, April 10, and also on May 5 - 6 in Natick, MA. Changes to the stabilized sections of SBP-2, approved by the March plenary, were incorporated into Revision 2c.

Microsoft brought in a proposal to add new page table capabilities that are more like a scatter/gather list. The working group endorsed the proposal; it will be brought to the plenary meeting in July.

Discussion continues on the isochronous clauses of SBP-2. Principal topics are error recovery, interchange format for recorded isochronous data, and the model for isochronous SBP-2 devices. The group believes that the model is disk-centric and may require enhancement before it applies to other devices such as printers, scanners, DVD, etc.

As a consequence of the reexamination of the isochronous model, the working group may delay the SBP-2 schedule to permit advice from other groups, notably consumer electronic vendors. This does not affect the stabilized, asynchronous portions of SBP-2.

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

Charles Monia reported that a new revision of SAM-2 was made available at this meeting. Charles and George Penokie reported on attempts to draft a hierarchical logical unit addressing model for inclusion in SAM-2.

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

John Lohmeyer reported that the SES completed first public review on April 29,1997. No comments were received. Pre-edit comments were received from the ANSI editor. The draft standard is now ready for NCITS letter ballot. Concerns were raised about the inclusion of the X3.305-199x number in the SES dpANS.

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

Doug Hagerman reported that a new revision of HAP was posted on the FTP site. He noted that a major action item for the project is to make the document align better with EPI. He noted that work on the next revision will begin soon, but will not be completed in time for this mailing.

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

George Penokie reported on the activities of the SCC-2 working group meeting (minutes in 97-171). George noted that he expects revision 1 to be in the next committee mailing, but he is working on revision 2. George stated a belief that the SCC-2 forwarding letter ballot will be processed in July, or more likely September.

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

Ron Roberts gave an oral report to the committee and provided the following written report for the minutes.

⇒ A draft revision 1.0 has not been generated at this time. Editing activity is continuing to develop documents by clause number and to incorporate as many items from SFF8090 as appropriate. The intent is to have a draft revision 1.0 by the July meeting.
⇒ Next meeting is scheduled for July during the T10 week (Tuesday and Wednesday).

Ron stated that the minutes of the MMC working group can be found in document 97-190.

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

Ralph Weber reported that he has not made any progress converting SPC to FrameMaker. He said that he expects to be able to report progress at the next meeting.

8.24 SCSI-3 Transport *via* SBP-2 Status (STS) {Project 1240-D} [Johansson]

The first review of the SCSI Transport via SBP-2 draft, STS-r01.pdf, was conducted within the SCSI working group meeting on May 7 in Natick, MA. Most participants had not yet read the draft and more discussion was deferred to the reflector and subsequent working group sessions.

8.25 SCSI Socket/SSL Services Command Set (SSS) {Project xxxx-D} [Parker]

John Lohmeyer reported that OMC approved the SSS project proposal, and that an NCITS letter ballot for approving the project will probably close around the time of the next T10 meeting.

9. Old Business

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

Erich Oetting asked that this item be dropped from future agendas.

9.2 Deletion of SCAM from SPI-2 and HAP [Milligan]

Gene Milligan moved that the motion concerning SCAM be removed from the table. Mark Evans seconded the motion. The motion to remove from the table passed 20:1.

The motion removed from the table was: "Gene Milligan moved that T10 retain SCAM as it is defined in the Amended SPI and not include SCAM as it is defined in the Amended SPI in any T10 projects subsequent to SPI."

Gene Milligan expressed an intent to vote against the motion after reflecting on the discussion of the prior meeting. The group discussed the procedural aspects of the previously tabled motion. Then, the group discussed the usefulness of SCAM, and whether it should be included in any T10 standards.

The motion failed 9:14:4:23=51.

10. New Business

10.1 Letter Ballot Results on Forwarding SSC to First Public Review (97-020) [Lohmeyer]

John reported that every T10 member organization voted on the letter ballot forwarding SSC to first public review, a first for T10. The letter ballot passed 49:3:0:0=52. John noted that comments were received from IBM, Ralph Weber (Symbios Logic), Ed Gardner (Ophidian Designs), Gene Milligan (Seagate), and Storage Technology. The full letter ballot results are documented in 97-020 r1 (on the T10 web and ftp sites). The process by which the technical comments were to be resolved was discussed. Resolution of the technical comments is expected to proceed on the SCSI Reflector (please reference specific comment numbers) and at the July committee meetings.

10.2 Actions on Working Group Recommendations

10.2.1 Bus Set Delay Reduction (97-116) [Ham]

Bill Ham presented the proposal that Bus Set Delay be reduced from 1800 ns to 1600 ns. He reviewed the proposal (97-116) for the committee.

John Lohmeyer said that some older devices would not be able to call themselves SPI-2 compliant and that such devices would not be able to participate in multi-segment busses unless the timing budget is reduced for the multi-segment configuration. John listed the devices that would fail to meet the new requirement as old devices such as NCR/Symbios 53C80 (maybe), and the 53C85 and 53C90 family devices (running with a slow clock) and Skip Jones of QLogic included their ESP devices (which have reached end-of-life). Bill described the failure mode of putting an old device on a maximum length EPI configuration would be that two devices could think they both won arbitration. Bill also described how EPI had been worded to restrict configurations with these older devices. The benefit of the proposed change would be that EPI environments containing only SPI-2 compliant devices could be larger (by 100 ns propagation time).

The committee was not satisfied that all the consequences of the proposed change had been investigated and characterized thoroughly. The committee recommended that issue be returned to the working group.

10.2.2 Additional ASC/ASCQs for SCC-2 (97-170 r1) [Penokie]

George Penokie presented a request for additional ASC/ASCQ codes to deal with SCC-2 Unit Attention conditions. George Penokie moved that 97-170r1 be accepted for inclusion in SPC-2. Jeff Williams seconded the motion. The motion passed unanimously.

10.3 Clarification to Figure 24 in SPI-2 (97-115r1) [Lohmeyer]

John Lohmeyer described a request to add "may be detected" and "shall be detected" identifications to SPI-2 Figure 24. He noted that an outstanding issue is the use of 30 mV verses 60 mV still exists and needs discussion between Bill Ham and Richard Moore.

John Lohmeyer moved that the "may be detected" and "shall be detected" additions to Figure 24 as documented in 97-115r1 be approved for inclusion in the stabilized portion of SPI-2. Bill Ham seconded the motion. The motion passed 28:1:0:22=51. The revised version of Figure 24 (97-115r1) will be included in the next mailing.

10.4 Project proposal for command definition for mass storage on 1394 (97-162r0) [McLean]

Pete McLean presented a review of the status of the project proposal recommended for T10 consideration by MMC working group. He noted the working group has been asked to consider combining the new project proposal with the STS project (see agenda item 8.24), currently under development.

Pete led a discussion of the planned work and its relationship to STS. T10 took no formal action on the project proposal at this meeting.

10.5 Request for Interpretation of "multiple-byte field" [Monia]

Charles Monia requested that action on this item be deferred to the next meeting.

10.6 Accept ANSI Editor Comments on SPI amendment #1 [Lamers]

Bob Snively moved that the ANSI pre-edit comments on SPI amendment #1 be accepted as non-substantive. Peter Johansson seconded the motion. The pre-edit comments were described as the usual editorial comments. The motion passed 29:0:0:22=51. Larry Lamers will incorporate the pre-edit comments into SPI Amendment #1, creating revision 3a, and John Lohmeyer will forwarded the revised SPI Amendment #1 to NCITS for management review.

10.7 Accept ANSI Editor Comments on SES [Snively]

Bob Snively moved that the ANSI pre-edit comments on SES be accepted as non-substantive. Larry Lamers seconded the motion. The motion passed 29:0:0:22=51. The mechanics of getting the pre-edit comments incorporated in SES were discussed. In any case, the revised SES will be at rev 8b. Once the comments are incorporated, John Lohmeyer will forward the revised SES to NCITS for management review.

11. ISO

11.1 ISO Report [Milligan]

Gene Milligan, the T10 International Representative, provided the following electronic report:

Intel and Microsoft, two major players in the US information technology industry, have joined the 38 other participants who develop the US positions on voluntary international standards in ISO/IEC JTC 1, Information Technology.

Intel will be represented by Mr. Roger Golliver who noted the importance of the JTC 1 TAG in developing US consensus on international standards issues, including the recent application submitted by Sun Microsystems for acceptance as a PAS Submitter. Intel also participates in J11 (C Language), J16 (C++), and L3.1 (MPEG).

Microsoft will be represented by Mr. George Spix, Chief Architect-Consumer Products as the principal member. Microsoft has been a long-standing participant in H2 (Database), J16 (C++), L2 (Codes and Character Sets) and L3.1 (MPEG).

Both organizations have also joined the US TAG to the Java Study Group (US-JSG).

Other members of the JTC 1 TAG are: AIIM, AIM USA, AMERICAN TRUCKING ASSOCIATIONS, AMP INC, APPLE COMPUTER INC, ASC T1, AT&T, BOEING COMPANY, BULL HN INFORMATION SYSTEMS, COMPAQ COMPUTER CORP, DATA INTERCHANGE STDS ASSN, DIGITAL EQUIPMENT CORP, EASTMAN KODAK CO, ELECTRONIC INDUSTRIES ASSN, HEWLETT-PACKARD CO, HITACHI AMERICA LTD, HUGHES AIRCRAFT CO, IBM CORPORATION, ICCP, IEEE, IMATION, LUCENT TECHNOLOGIES, NATL COMMUNICATIONS SYSTEM, NCITS, NEVILLE AND ASSOCIATES, NIST, PANASONIC TECHNOLOGIES INC, SHARE INC, SONY CORP, STORAGE TECHNOLOGY CORP, SUN MICROSYSTEMS INC, SYBASE INC, TEXAS INSTRUMENTS INC, UNIFORM CODE COUNCIL INC, UNISYS CORP, US DEPT OF DEFENSE/DISA, US DEPT OF ENERGY, and XEROX CORP.

NCITS has approved submission of X3.232-1996, Information technology - SCSI-2 Common access method transport and SCSI interface module for fast tracking and requested that ANSI complete the submission.

Scott Jameson, Chair JTC 1 TAG Ad Hoc on JTC 1 Reengineering provided a report of the April 7-11, 1997 Meeting of the JTC 1 Ad Hoc on Reengineering in Berlin, Germany. The Reengineering ad hoc concluded the review of the SCs' Program of Work. All projects whose status was contested by the SC were considered and a final disposition was agreed. The ad hoc used the same criteria as applied in earlier ad hoc and JTC 1 Plenary meetings: a minimum of 5 National Bodies must be participating in the work or, if the project is being done in collaboration with the ITU, publication must occur this year. Document JTC 1 N4633 contains the final list of canceled projects.

The Reengineering ad hoc continued its consideration of JTC 1 Technical Directions. Document JTC 1 N4627 contains the latest set of Technical Directions and their descriptions. JTC 1 NBs are asked to approve these via letter ballot, closing June 9th. The JTC 1 TAG will determine the US vote and ballot comments during its June meeting.

The ad hoc also examined JTC 1's current work activities and proposed a mapping of today's SC, WG, and projects to the new Technical Directions. This is contained in document JTC 1 N 4631, and was sent, along with a questionnaire, to the SCs for comment, closing on May 15th. The ad hoc recognized that, given the short time frame, it is unlikely a SC will be able to establish a formal position on the responses to the questions and the proposed mapping. SC Chairs and Secretariats need to innovate ways to reply to JTC 1 by the middle of May. US SC TAGS should review N 4631 and send their comments to the SC as soon as possible to ensure their comments are reflected in the SC positions.

The Reengineering ad hoc recommended establishing a pilot project for a Business Team in the area of electronic commerce. The proposal is based on the US contribution, and is largely consistent with the contribution. It is contained in document JTC 1 N 4626, and is out for NB ballot, closing on June 9th. The JTC 1 TAG will determine the US position on the proposal at the June meeting.

The Reengineering ad hoc took other actions which are reflected in the Ad Hoc Recommendations in document JTC 1 N 4628. The actions include conducting a JTC 1 ballot on a revision to the 5 Year Review ballot.

Directions were given to the SCs for the maintenance of the standards related to canceled projects, and input was sought from SGFS and NBs for the June meeting of the ad hoc.

The following Technical Directions have been identified by the JTC 1 Ad Hoc on JTC 1 Re-engineering:

Technical Directions

Data capture

Distributed application services
Enabling technologies for use in a distributed environment in order to achieve concrete distributed application services. They constitute:
¤ Data management functions including definition of data structures and semantics for a complete range of data types, together with services and protocols for storage, access and update of such data;
¤ Specification of application functions independently of the details of their distribution (through the use of object technology); together with the configuration and management of those functions across enterprises.

Identification Cards and Related Devices

Information Interchange Media
Physical characteristics of storage media using optical, magnetic or other technologies and structure of data for storage and interchange, including algorithms for the loss-less compression of data.

IT terminology

Multimedia and Representation
Coding of hypermedia and multimedia and coded representation of picture, audio and character information, including
- sets of compression and control functions for use with such information,
- interchange of such information.

Networking & Interconnects

Office Equipment

Programming Languages & Software Interfaces

Security

Software Engineering

User Interfaces

COMMON STRATEGIC CHARACTERISTICS FOR JTC 1 STANDARDS
A purpose of IT standardization is to ensure that products available in the marketplace have characteristics of interoperability, portability and that can easily be adopted in different cultural environments. Standards which are developed within the context of the JTC 1 Technology Directions shall reflect the requirements of the following common strategic characteristics:

Interoperability
The ability of two or more systems or applications to exchange information and to mutually use the information that has been exchanged.

Portability
The ease with which entities such as software and data can be transferred from one system to another.

Cultural Adaptability
The special characteristics of natural languages and the commonly accepted rules for their use (especially in written form) which are particular to a society or geographic area. Examples are: national characters and associated elements (such as hyphens, dashes, and punctuation marks), correct transformation of characters, dates and measures, sorting and searching rules, coding of national entities (such as country and currency codes), presentation of telephone numbers, and keyboard layouts.

The requirement for JTC 1 standards to enhance and ensure Interoperability is consistent with the approved JTC 1 Policy on Interoperability.

The applicability of these three requirements will vary across the Technology Directions. Work in each of the technology directions must properly take in account these requirements.

Electronic Commerce Business Team
The JTC 1 Secretariat circulate document JTC 1 N 4626, Proposal for a JTC 1 Business Team Pilot Project on Electronic Commerce, to JTC 1 National Bodies for a 60-day letter ballot. Comments received on this ballot will be considered at the June 1997 Ad Hoc meeting on JTC 1 Re-engineering in London.

The Ad Hoc appointed Ulrich Hartmann (Germany) as the Business Team Leader of this pilot project pending approval of the JTC 1 letter ballot on the pilot.

The Electronic Commerce Business Team will assess the electronic commerce sector standardization needs and propose necessary steps to satisfy them through the facilitated communication and interactions between interested parties. It will focus on electronic transactions among individuals, businesses, and governments. The Team will choose, if necessary, to limit its scope in order to meet the pilot timelines.

Proposed Revision of the Five-Year Review Letter Ballot
The JTC 1 Secretariat circulate document JTC 1 N 4629, Proposed Revision of the Five-Year Review Letter Ballot, to JTC 1 for a 60-day letter ballot. If approved, the results of the letter ballot will be forwarded to ISO TMB for endorsement.

Because JTC 1 deals with very fast moving technologies, it needs to carefully keep its catalogue of standards as accurate and up to date as possible. When appropriate, it needs to rapidly undertake necessary revisions of its standards. The additional questions will help JTC 1 assess its standards and determine the need for any revision.

Question 1
Are you in favor of
        -confirmation of the International Standard for a further period of five years?
        -revision of the International Standard? If YES, please give reasons.
        -withdrawal of the International Standard? If YES, please give reasons.

Question 2
If the voting results show a need to revise the standard, are you prepared to participate in the development of the project?

FOR ADDITIONAL INFORMATION

Question 3
Has this ISO standard been implemented as a national standard or is it used per se by your national industry?

Question 4

If the response to question 3 is affirmative, is the standard implemented or used without change? In case of modifications, please identify the changes on a separate sheet.

Question 5 (optional)
Please indicate the number of the corresponding national standard:

LETTER BALLOT on Document ISO/IEC JTC 1 N 4627, Proposed JTC 1 Technical Directions and Common Strategic Characteristics closes June 6, 1997.

COMMON STRATEGIC CHARACTERISTICS FOR JTC 1 STANDARDS
A purpose of IT standardization is to ensure that products available in the marketplace have characteristics of interoperability, portability and that can easily be adopted in different cultural environments. Standards which are developed within the context of the JTC 1 Technology Directions shall reflect the requirements of the following common strategic characteristics:

Interoperability
The ability of two or more systems or applications to exchange information and to mutually use the information that has been exchanged.

Portability
The ease with which entities such as software and data can be transferred from one system to another.

Cultural Adaptability
The special characteristics of natural languages and the commonly accepted rules for their use (especially in written form) which are particular to a society or geographic area. Examples are: national characters and associated elements (such as hyphens, dashes, and punctuation marks), correct transformation of characters, dates and measures, sorting and searching rules, coding of national entities (such as country and currency codes), presentation of telephone numbers, and keyboard layouts.

ISO/IEC JTC 1 N 4631 provides Rationale and Questions to JTC 1 National Bodies and Subcommittees Regarding JTC 1 Technical Directions and Organization Source: JTC 1 Ad Hoc on JTC 1 Reengineering Subcommittees are asked to respond by 15 May 1997. The Subcommittee responses will be considered at the June Re-engineering Ad Hoc meeting.

A NEW APPROACH FOR JTC1
Continuing technological and market developments require JTC 1 to adapt itself to satisfy the changing requirements. The resulting approach is expected to attract new resources and areas of work for JTC 1. As a first stage in responding to these developments, JTC 1 has, with help from the subcommittees, eliminated a number of projects which had inadequate support. JTC 1 has also revised its working procedures to improve efficiency and market relevance.

We wish to maintain JTC1's existing strengths such as the open, world wide consensus process and a stable structure to ensure ongoing maintenance of its published standards.

JTC 1 standards provide the platform for world trade and endeavor to limit the effect of national differences causing barriers to trade. In essence we need to provide market relevant standards in a timely manner.

As part of the re-engineering process we have adopted a business team concept (subject to a 60 day letter ballot) to help with selecting market relevant projects and getting them off to a flying start. We are proposing to adopt a pilot project which is documented in JTC 1 Nxxxx and your cooperation will help us to ensure the success of the project.

As a further part of the process, we have identified twelve technical directions which we believe are of strategic market relevance. These twelve directions are based on the situation today. See attachment 1. The list of directions will be re-aligned as external circumstances demand. By focusing on these technology directions, JTC 1's standards will be more efficient, effective and market oriented. We expect that these technical

directions will provide a focus for new technologies as they arise; for example, if market requirements dictate the a new distributed application service standard needs to be developed, our technical direction in this area would give JTC 1 a ready home for the standard to be developed.

Having attempted to map the existing structure onto these new directions we observe some consequential changes to JTC 1 and its subcommittees may be required. This mapping is displayed in the table in Attachment 2. Any changes to the existing JTC 1 structure will be handled in phased increments in order not to adversely affect the ongoing work.

While we have made every attempt to create the mapping with the greatest accuracy, we would appreciate any comments which would enable us to improve it. We have scheduled that we conclude the plan at the June re-engineering meeting for final agreement at the JTC 1 Plenary in September. Your response to these proposals by 15 May 1997 is required to help us meet our objectives.

We have prepared a draft recommendation to JTC 1, on how we believe the present work program of each SC or in some cases, a WG or a project of a SC maps to the technical directions. Please comment on the completeness and consistency of these Technical Directions.

In addition please comment on the following questions.

1. Do you consider that your present projects or project grouping align with the proposed recommendation?
If not please provide rationale for a different alignment within the overall set of technical directions.

2. Do you believe your current projects or project grouping within the proposed technical direction will benefit from a synergistic fit with other projects, (if any) in your technical direction?

3. Do you believe any of your current projects or project grouping require significant interactions with projects in other technical directions?
If so which ones?

4a. Do you believe supplementary standardization activity should be undertaken to sufficiently address the technical direction and which adds value to the work of JTC 1?
For example there appears to be added standardization needs in the technical direction "Security" beyond the present work program of SC27.

4b. Do you consider that the resources to address these areas will be available?

Attachment 2
Technical Directions Currently Involved
Working Entities

Data Capture SC 31

Distributed Application Services SC 21 (except ASN.1), SC 18/WG 4, SC 30, SC 14

Identification Cards and Related Devices SC 17

Information Interchange Media SC 11, SC 23

IT Terminology SC 1

Multimedia and Representation SC 29, SC 2, SC 24, ASN.1, SC 18/WG 8

Networking & Interconnects SC 6, SC 25, SC 26

Office Equipment SC 28

Programming Languages & Software Interfaces SC 22

Security SC 27

Software Engineering SC 7

User Interfaces SC 18/WG 9

On the assumption that above SC 6, SC 25, SC 26 alignment will be approved and in any case for SC 6 Jean-Paul Emard on behalf of the EIA and Donald Loughry on behalf of the IEEE have submitted competing applications to serve as the SC 6 TAG Secretariat.

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Since the last meeting FC-FP, FC-AL, and FC-SB picked up a fifth national body and should not be canceled.

ISO/IEC JTC 1 N 4633 List of JTC 1 Canceled Projects
This document is circulated to JTC 1 National Bodies for information and to JTC 1 Subcommittees for immediate action as indicated. National Bodies and Subcommittees are reminded that work can be brought into JTC 1 via either the NP or Fast Track process. The Fast Track process was viewed as a viable alternative for several of the canceled projects, in particular for 1.24.02.09 and many of the SC 25 items.

JTC 1/SC 25/WG 4 Projects for Cancellation

1.24.10.10	COMPLETE PUBLICATION/ CANCEL	ISO/IEC 12087-2/DAM 1, IPI PIKS/AMD 1
I.25.01.04.05	COMPLETE PUBLICATION/ CANCEL	DTR 10 192-8, Information Technology Home Electronic Systems - Architecture Part 8: Simple Interface
1.25.13.01.25	COMPLETE PUBLICATION/ CANCEL	DIS 9314-25, FDDI SMT-ATS
1.25.13.01.27-1	STOP/CANCEL	CD 9314-27, FDDI-SMT-2-CS
1.25.13,01,27-2	STOP/CANCEL	CD 9314-28, FDDI-SMT-2-IS
1.25.13.01.27-3	STOP/CANCEL	CD 9314-29, FDDI-SMT-2-PS
1.25.13.07.03	STOP/CANCEL	IS 6951:86-12, Eurobus A (under consideration for revision)
1-25.13.10.08	STOP/CANCEL	CD 9318-3:90, IPI-3 Disk
1.25.13.10.09	STOP/CANCEL	CD 9318-4:90, IPI-3 Tape
1.25.13.10.14	STOP/CANCEL	CD 9818-6, IPI Enhanced PHY
1.25.13.12.08	STOP/CANCEL	CD11518-8,IHPPI-ATM (Mapping to ATM)
1.25.13.12.09	STOP/CANCEL	CD 11518-9, HIPPI-SE
1.,25.13.13.01	STOP/CANCEL	CD 14165-1 1 1, FC-PH
1.26.14576	STOP/CANCEL	Project 14576, Synchronous Split Transfer System Bus - stbus, Logical Layer
1.26.14575-1	STOP/CANCEL	Project 14575-1, ISO/IEC 14575 Protocols on Unshielded Twisted Pair Cable
1.26	STOP/CANCEL	Higher-level Abstractions for Software Distribution and Portability (e.g., ANDF/Virtual Binary Interface
ALL PROJECTS	STOP/CANCEL	Picture Coding Methods
ALL PROJECTS	STOP/CANCEL	Coded Representation of Computer Graphic Images

In view of the cancellation of projects with less than five national bodies indicating development contributors, the last T11 plenary voted that the X3T11 decision to not stop or cancel IPI-3 Disk, IPI-3 Tape, HIPPI-ATM, HIPPI Serial, FC-PH, FC-FP, FC-AL, FC-SB, be interpreted as authorization for the IR to request Fast Tracking of IPI-3 Disk, IPI-3 Tape, HIPPI-ATM, HIPPI Serial, and FC-PH.

A 60 day letter ballot was issued on the JTC 1 IT Transition Plan (see N4557), the Revised Policy on Electronic Document Distribution (see N4054), and the Strategy and Requirements for the Implementation of the IT Policy (see N3721). Among other things JTC 1 is requesting that checks be made to determine if electronic distribution is resulting in distribution acceleration, increased member satisfaction, and that document distribution effort is reduced.

The Call for Comments on JT/97-0125, Request for Comments on JTC 1 N 4615 - Application from Sun Microsystems, Inc. for Recognition as a PAS Submitter, closed Tuesday, May 6, 1997. Comments received have been posted on the JTC 1 TAG web site: <http://www.jtc1tag.org/sun_pas.htm>.

The Call for Comments on JT/97-0142, Request for Comments on JTC 1 N 4616 - Application from the Infrared Data Association (IrDA) for Recognition as a PAS Submitter, closes Friday, May 9, 1997. Comments received to date have been posted on the JTC 1 TAG web site: <http://www.jtc1tag.org/irda_pas.htm>.

End ISO Report

The committee discussed the effects of the reorganization on T10 activities. As a result of the discussion, STA was asked to investigate the requirements of being a PAS Submitter. Some present considered having STA function as a PAS Submitter to be an efficient way for T10 to participate in international standards development while maintaining control over the development process.

11.2 ISO Business [Milligan]

Gene reported that the delegation for the upcoming ISO meeting is planned to include Gene Milligan and Horst Truestedt. Gaining visas for Brazil and Horst's meeting reservations were cited as yet to be completed requirements for the delegation members.

12. Liaison Reports

12.1 T11 Liaison Report [Cummings]

Roger Cummings, T11 Chair, was unable to attend but provided the following electronic report:

T11 LIAISON REPORT to T10, T12 & T13

T11 met on April 6, 1997 with 106 people in attendance.

Lawrence Livermore Labs. resigned their membership, SGS-Thomsen was added as a new member organization. The membership of T11 remains 79 organizations.

It was reported that Project 956-D, the Fibre Channel Implementation Guide (FC-IG) had been withdrawn, and that a project had been approved for a revision to X3.210-1992, HIPPI-FP.

It was also reported that final approval of HIPPI-SC Revised, (X3.222-1997), SBCON (X3.296-1997), FC-PH-2 (X3.297-1997), HIPPI-ATM (X3.299-1997) and HIPPI Serial (X3.300-1997) took place on 3/12/97.

A First Public Review on X3.303-199x, FC-PH-3,closed on 2/18/97 with four comments received. A revised draft which addresses the comments is expected at the June T11 Plenary.

A T11 LB on FC-PLDA Rev 1.10 had closed on 4/3/97, and the result was reported as F69-O04-DNV06. After discussion, the T11 Plenary agreed to go forward with Rev 1.10 for a first Public Review.

The T11 Plenary also forwarded FC-FLA Rev 2.6 for a first Public Review (& accepted responses to T11 LB comments) by F58-O01-DNV20.

T11 also recommended withdrawal of Project 1214-D, HIPPI-MP by F58-O00-DNV21.

A T11 LB on an Reorganization proposal had closed on 4/3/97, and the result was reported as F55- O12-A05-DNV7 (13 ballots included comments). The comments were discussed at some length, and it appeared that there were no problems with some parts of the proposal, and that an incremental approach would be preferred. Therefore motions were made to request the formation of Task Groups T11.1, HIPPI, and T11.2, Physical Variants, and those motions were approved by F52-O00-DNV27, and F53-O00-DNV26 respectively. Requests for the formation of other TGs are expected to follow.

The next meeting of T11 is being hosted by by Michael Foster of Boeing during week of June 9, 1997 @ the Red Lion Hotel at Seattle Airport, WA. The phone number is 1-800-RED-LION, and the fax number is (206)431-8687. The T11 Plenary meeting will take place on Wednesday, June 11.

Interim study and ad hoc meetings have been approved for:

HIPPI   5/13-15   Mountain View, CA
FCW Study Group 5/5-6   Natick, MA
FC-AV   5/13&14   Minnetonka, MN

as well as the usual meetings during the T11 Plenary week. Advance notice is given that the August T11 Plenary meeting will take place on Thursday, August 7.

12.2 T13 Liaison Report [Milligan]

Gene Milligan made an oral report to the committee.

Devon Worrell suggested that a scenario may exist whereby a company might claim that patents need not be infringed to implement one standard, but would need to be infringed to implement a required combination of two standards. Thus, a company could claim to comply with the ANSI policy, but in fact, no one could implement products without infringing their patent. Gene Milligan and Pete McLean were not convinced that the scenario is possible given that one of the standards would have a normative reference to the other standard.

12.3 SFF Industry Group [Allan]

Dal Allan provided the following electronic report:

The issues raised by IBM and Intel on the SCA-2 connector turned out to be a tempest in a teacup and neither company bothered to attend the SSWG convened to address the issues they had raised. The subsystem relied on an SCA-2/SCA blind mate, which is not a valid configuration. No changes were made by the SSWG but action items from the SSWG did result in explanatory comments being added to the specification, and there is a possibility of adding explanatory dimensions as well.

The colors on the Ultra ATA cable have changed. The bodies of the three connectors will be different rather than relying on distinguishing by caps.

Both forms of the over-under footprint have been incorporated in the latest revision of VHDCI.

The 2 1/2", 3 1/2" and 5 1/4" form factors will be balloted at first public review by the EIA this month and the 3 1/2" drive power connector is about to published as a standard.

18

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

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

12.4 IEEE 1394 [Johansson]

Peter Johansson made an oral report to the committee and provided the following electronic report:

Additional information on IEEE 1394 activities may be obtained by contacting Peter Johansson at pjohansson@aol.com.

P1394a (Bandwidth utilization enhancements to 1394-1995)

The most recent P1394a meeting was held in Eindhoven, Netherlands, on April 16. One goal of the meeting was to freeze the scope of the document. "Scope" is broadly defined to mean the introduction of proposals, not necessarily their inclusion in the draft itself. Meeting time limits caused the working group to defer this action to the next meeting, May 20 - 21 in Phoenix, AZ.

Draft copies of the standard, as well as working documents, are available from ftp://ftp.symbios.com/pub/standards/io/1394/P1394a.

P1394b (Gigabit extensions to 1394-1995)

This working group is chaired by Michael Teener, who may be contacted at mike@fireflyinc.com. Many of the P1394b meetings are co-located with P1394a meetings. The working group has recently added home network considerations and the use of optical fiber to its scope.

P1394.1 (Bridges)

Contact Dick Scheel at dicks@lsi.sel.sony.com for information on this working group. In a related activity, the Internet Engineering Task Force (IETF) is expected to approve a project to develop a standard for the transport of IP over 1394-1995.

Draft copies of the standard, as well as working documents, are available from ftp://ftp.symbios.com/pub/standards/io/1394/P1394.1.

12.5 IEEE P1285 Status

No report was available.

12.6 IEEE P1596.8 Status

Bob Snively had no report.

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

Skip Jones, Qlogic, and Louis Grantham, Linfinity Microelectronics, made an oral report to the committee and Louis provided the following electronic report:

STA Liaison Report 5/08/97 to T10
STA Objectives:
• Promote Increased Usage of Parallel SCSI
• Promote Better Understanding of Parallel SCSI

- Shape the Evolution of Parallel SCSI

STA meetings have been moved to Fridays of the T10 week so the next meeting is tomorrow at this hotel. Articles are written for each Computer Technology Review issue and other publications on SCSI technologies and applications.

The *STA* Technical Liaison Committee met this morning and received input from T10 members on Ultra3 and beyond, e.g. define crisp connection on low end, use both edges of clock to achieve Fast-80 or Fast-100. There is a nice segmentation happening between narrow on low-end peripherals and wide SCSI on the high end which will be drafted by STA for the next meeting. An Ultra3, Ultra4, Ultra5 road-map will be drafted for the next meeting which will occur on the Thursday morning before the T10 plenary in July.

STA 3/14/97 meeting highlights
President . . . . . Harry Mason   (Symbios Logic)
Vice President . . Skip Jones   (QLogic)
Secretary . . . . . Ian Morell   (Circuit Assembly)
Treasurer . . . . . Tom Martin   (Adaptec)
Other board members include:
At-large . . . . . .Jerry Humphrey (Seagate)
At-large . . . . . .Louis Granthum (Linfinity)

ULTRA3 MARKETING GOALS (input to SPI-2 working group)
o Provide an upgrade path from Ultra2 SCSI that:
  - takes throughput to at least 80 mega-transfers/sec
  - preserves Ultra2 cable length and connectivity characteristics
  - provides seamless backward and forward compatible upgrade paths between Ultra2 and Ultra3
o Create LVD interface that allows each peripheral to run at its maximum speed, up to the maximum speed of
    the host adapter.
  - preserve SPI-2 as is
o Ultra3 provides compatibility backwards to Ultra2 transparent to the user
  - Resolve to have Ultra3 specified so Ultra2 products can be launched by FallCOMDEX'97.

STA marketing communication events:
o InfoStor -- March 18 - 20 at San Jose Convention Center
o Storage Track '97, a Dataquest event in Monterey, CA., June 4-5
o Storage Solutions 1997, a Dataquest sponsored event in 4 locations across the US. Seminar Titles: "SCSI
    and the Enterprise" and "SCSI and the Desktop"
  April 3rd - San Jose, CA
  April 14th - Costa Mesa, CA
  May 14th - Nashua, NH
  September 17th - Marlborough, MA
o Comdex - November

John Lohmeyer complemented the productivity of STA-Tech meeting.

13. Review of Action Items

208)   Bob Snively will forward 97-101r2 to IEEE under cover of a letter authorized by the T10 chair, and copy
        the chair and the committee document archive.
219)   Gene Milligan will submit MMC to ISO.
220)   Gene Milligan will submit SPIamend to ISO.
221)   Gene Milligan will submit SPC rev 11a to ISO.
222)   Gene Milligan will submit SBC to ISO.
223)   Gene Milligan will submit the SCAM patent letter through the proper channels to ISO/IEC and supply a
        replacement patent statement for SPI to ISO/IEC.
225)   Larry Lamers will prepare a list of accepted proposals for integration in SPI-2.

226)   Gene Milligan will prepare SBC revision 8a.
227)   John Lohmeyer will forward SBC revision 8a to NCITS for further processing, if no public review
        comments are received.
228)   Larry Lamers will incorporate the pre-edit comments into SPI Amendment #1.
229)   John Lohmeyer will forwarded the revised SPI Amendment #1 to NCITS for management review.
230)   John Lohmeyer will forward the revised SES to NCITS for management review.

14. Meeting Schedule

The next plenary meeting of T10 will be July 17, 1997 in Colorado Springs, CO at the Double Tree World Arena
Hotel (was the Red Lion Hotel) (719-576-8900), hosted by Symbios Logic. The meeting will begin at 1:30 p.m.
on Thursday.

The meeting list for the next plenary week is:

```
                         July '97 Meeting Map
                          (5/8/97 Version)

Monday 7/14     8   9    10   11   12   1    2    3    4    5    6    7    8    9
                    +============+    +========================+
                    | Fast-xx SG |    | SPI-2 Working Group    |        (30)
                    +============+----+========================+
                    | Fibre Channel WG                         |        (40)
                    +------------------------------------------+

Tuesday 7/15        9    10   11   12   1    2    3    4    5    6    7    8    9
                    +============+    +====================+
                    | EPI WG     |    | SCSI Protocol SG   |             (40)
                    +============+====+================+===+
                    | MMC WG                           |                (20)
                    +==============================+===+----------+
                                                   |FC Hub Profile |    (25)
                    +---------------+              +---------------+
                    |Fibre Channel WG|                                  (40)
                    +---------------+

Wednesday 7/16      9    10   11   12   1    2    3    4    5    6    7    8
                    +============+    +====================+
                    |Encl Profile|    | SCSI WG            |            (40)
                    +============+====+================+===+
                    | MMC Working Group                 |               (20)
                    +==============+====================+---+
                                   | SFF SSWGs      | SFF  |            (40)
                                   +---------------+-------+

Thursday 7/17       9    10   11   12   1    2    3    4    5    6    7    8
                    +-----------+    +========================+
                    | STA Tech   |    | T10 Plenary Meeting   |         (25/70)
                    +============+==+=========================+
                    | SSC/SMC WG   |                                    (25)
                    +==============+

Friday 7/18     8   9    10   11   12   1    2    3    4    5
                      +-------------------------------+
                      | SCSI Trade Association (STA)   |               (30)
                      +-------------------------------+

    Meetings marked with == are T10-authorized meetings.
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Meetings marked with -- are authorized by other groups and may change without notice.

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Meeting Map Abbreviation Key:
Amnd:          Amendment
CAM:           Common Access Method
CAM-3:         Next generation CAM for SCSI-3
Diskboys:      Industry group studying disk attachment via IEEE 1394
EPI:           SCSI Enhanced Parallel Interface (Technical Report)
Encl Profile Enclosure Profile Study Group
Fast-20:       Data Transfer at 20 Mega-transfers/second (a.k.a., Ultra)
Fast-40:       Data Transfer at 40 Mega-transfers/second (a.k.a., Ultra2)
FC:            Fibre Channel
FC-AL:         Fibre Channel - Arbitrated Loop (a T11 project)
FCLC:          Fibre Channel Loop Community (not an NCITS activity)
I/F:           Interface
HAP:           High Availability Profile (Technical Report)
LB:            Letter Ballot
MMC:           SCSI-3 Multimedia Commands (CD-ROM)
PH:            Physical (Connectors, Cables, Transceivers, etc.)
Plenary:       Full Committee Meeting
RAID:          Redundant Array of Independent Devices
SBC:           SCSI-3 Block Commands
SBP-2:         Serial Bus Protocol for IEEE 1394 (2nd generation)
SCC:           SCSI-3 Controller Commands (RAID)
SCSI:          Small Computer System Interface
SES:           SCSI Enclosure Services
SFF:           SFF Industry Group (not an NCITS activity)
SG:            Study Group
SMC:           SCSI-3 Medium Changer Commands
SPC:           SCSI-3 Primary Commands
SPI-2:         Second Generation SCSI-3 Parallel Interface
SSA:           Serial Storage Interface
SSC:           SCSI-3 Stream Commands (includes Tape)
SSWGs:         Specific-Subject Working Groups
STA:           SCSI Trade Association (not an NCITS activity)
STA Tech:      STA Technical Meeting (T10 members invited)
STS:           SCSI Transport via SBP-2
T10:           Lower Level Interfaces Technical Committee
T10.1:         SSA Task Group of T10
VHDCI          Very High Density Cabled Interconnect
WG:            Working Group (same as Ad Hoc Group)
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A request for a meeting to discuss protocol proposals on 24 June in Irvine, CA met with some opposition. Consequently, a straw poll was taken on whether to have the meeting. The straw poll (8:7:12) indicated that a bare majority were in favor of the meeting.

Planned T10 events outside of the plenary week are:

```
Event                Date(s)               Location/contact
-------------------- --------------------- --------------------------------
SBP-2 Working Group  June 16, 1997         Irvine, CA / Western Digital
SBP-2 Working Group  July 21-22, 1997      San Jose, CA / Seagate
SCSI Protocol SG     June 24, 1997         Irvine, CA / Adaptec *
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* Larry Lamers indicated that this meeting would be canceled if proposals are not distributed on the SCSI Reflector by the end of May.

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Other Activities              John Lohmeyer    (719) 533-7560
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The long-term T10 meeting week schedule is:

Date	Location	Host/Comments
Jan 6-10, 1997	Dallas, TX	Quantum
Mar 10-14, 1997	San Diego, CA	QLogic
May 5-9, 1997	Natick, MA (near Boston)	Digital
Jul 14-18, 1997	Colorado Springs, CO	Symbios Logic
Sep 8-12, 1997	Nashua, NH	Unitrode
Nov 3-7, 1997	Palm Springs, CA	Adaptec
Jan 5-9, 1998		**meeting canceled**
Mar 16-20, 1998	San Diego, CA	QLogic/**dates changed**
May 4-8, 1998	Colorado Springs, CO	Symbios Logic
Jul 13-17, 1998	Portland, ME	Digital
Sep 14-18, 1998	St. Petersburg Beach, FL	AMP
Nov 2-6, 1998	Palm Springs, CA	Adaptec/**dates changed**
Jan 11-15, 1999		**meeting canceled**
Mar 8-12, 1999	Sarasota, FL	AMP
May 3-7, 1999	Manchester, NH	Hitachi Cable
Jul 12-16, 1999	Colorado Springs, CO	Symbios Logic
Sep 13-17, 1999	San Diego, CA	QLogic
Nov 8-12, 1999	Palm Springs, CA	Adaptec

George Penokie moved that T10 cancel the January 1998 meeting. Mark Evans seconded the motion. The motion passed 19:3.

Gene Milligan moved that T10 cancel the January 1999 plenary meeting. John Lohmeyer seconded the motion. The motion passed 20:4.

Gene Milligan moved that commencing in 1999, T10 reduce the number of plenary meetings from 6 to 4. John Lohmeyer seconded the motion. The motion failed 3:17.

Charles Monia moved that T10 accept the locations and hosts for 1999. Peter Johansson seconded the motion. The motion passed 24:2.

14.1 Authorization of Working Group Meetings

John noted that the working group meetings are required to operate under the same voting procedures as does T10 (that is, one vote per organization) and the results of a working group are not binding on the parent committee. This later requirement is why we have traditionally only used non-binding straw polls in working group meetings. Any issue where the voting rules would make a difference should be deferred to the plenary group. Nonetheless, task groups and ad hoc groups should strive to achieve consensus prior to bringing issues to T10.

Erich Oetting moved that T10 authorize the T10-related meetings and events in the list above. Mark Evans seconded the motion. The motion passed 25:4.

15. Adjournment

The meeting was adjourned at 6:00 p.m. on Thursday May 8, 1997.

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Status Key:  P    -  Principal
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             O    -  Observer
             L    -  Liaison
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          May 13, 1997 - T10 Document Register - Enclosure (3)

T10/97-001R0   Date: 11/22/96 Author: J. Lohmeyer [SY-97-01]
Agenda for X3T10 Meeting #20 (Mar '97)

T10/97-002R0   Date: 11/22/96 Author: J. Lohmeyer [SY-97-01]
X3T10 Project Summary - Jan '97

T10/97-003R0   Date: 11/22/96 Author: J. Lohmeyer [SY-97-01]
Jeopardy letter for Mar '97 meeting

T10/97-004R0   Date: 11/22/96 Author: J. Lohmeyer [SY-97-01]
Results of X3T10/96-045 Letter Ballot

T10/97-005R0   Date: 11/22/96 Author: J. Lohmeyer [SY-97-01]
Response to 1PR Comment #1 on X3.301-199x (SPC)

T10/97-006R0   Date: 11/22/96 Author: J. Lohmeyer [SY-97-01]
Response to 1PR Comment #2 on X3.301-199x (SPC)

T10/97-007R1   Date: 3/10/97 Author: J. Garner [SY-97-02]
Second Call for Volunteers - Chairman T10

T10/97-008R0   Date: 1/22/97 Author: J. Lohmeyer [SY-97-02]
Agenda for X3T10 Meeting #21 (May '97)

T10/97-009R0   Date: 1/22/97 Author: J. Lohmeyer [SY-97-02]
T10 Project Summary - Mar '97

T10/97-010R0   Date: 1/22/97 Author: J. Lohmeyer [SY-97-02]
Jeopardy letter for May '97 meeting

T10/97-011R0   Date: 1/22/97 Author: J. Lohmeyer [SY-97-02]
Results of T10/96-046 Letter Ballot on forwarding SSA-PH2 to 1PR

T10/97-012R0   Date: 1/22/97 Author: J. Lohmeyer [SY-97-02]
Results of T10/96-047 Letter Ballot on forwarding SSA-TL2 to 1PR

T10/97-013R0   Date: 1/22/97 Author: J. Lohmeyer [SY-97-02]
Results of T10/96-048 Letter Ballot on forwarding SSA-S3P to 1PR

T10/97-014R0   Date: 3/18/97 Author: J. Lohmeyer [SY-97-02]
Response to Public Review Comment #1 on X3.304 (MMC) (see 97-127)

T10/97-015R0   Date: 3/19/97 Author: J. Lohmeyer [SY-97-02]
Letter Ballot on forwarding SSC to 1PR

T10/97-016R0   Date: 4/8/97 Author: J. Lohmeyer [SY-97-03]
Agenda for T10 Meeting #22 (July '97)

T10/97-017R0   Date: 4/8/97 Author: J. Lohmeyer [SY-97-03]
T10 Project Summary - May '97

T10/97-018R0   Date: 4/8/97 Author: J. Lohmeyer [SY-97-03]
Jeopardy letter for May '97 meeting

T10/97-019R0   Date: 4/8/97 Author: J. Lohmeyer []
(not used)

T10/97-020R1   Date: 4/8/97 Author: J. Lohmeyer [SY-97-03]
Results of T10/97-015 Letter Ballot on forwarding SSC to 1PR

T10/97-021R0   Date: 4/8/97 Author: J. Lohmeyer []
Letter forwarding SCSI World Wide Names description to IEEE

T10/97-022R0   Date: 4/8/97 Author: J. Lohmeyer [SY-97-03]
T10 Annual Report for 1996

T10/97-101R0   Date: 1/2/97 Author: R. Snively []
Draft tutorial for IEEE company_id based SCSI identifiers

T10/97-101R1   Date: 1/2/97 Author: R. Snively [SY-97-01]
Draft tutorial for IEEE company_id based SCSI identifiers

T10/97-102R0   Date: 1/2/97 Author: R. Roberts [SY-97-01]
MMC-2 Additional Definitions

T10/97-103R0   Date: 1/2/97 Author: R. Roberts [SY-97-01]
MMC-2   DVD MODEL

T10/97-104R0   Date: 1/2/97 Author: R. Roberts [SY-97-01]
MMC-2   CD MODEL

T10/97-105R0   Date: 1/2/97 Author: R. Roberts [SY-97-01]
MMC-2   CHANGER   MODEL

T10/97-106R0   Date: 1/2/97 Author: R. Roberts [SY-97-01]
MMC-2   DVD POWER MANAGEMENT

T10/97-107R0   Date: 1/2/97 Author: R. Roberts [SY-97-01]
MMC-2   FEATURE SETS

T10/97-108R0   Date: 1/2/97 Author: R. Roberts [SY-97-01]
MMC-2   Packet Commands for C/DVD Devices

T10/97-109R0   Date: 1/2/97 Author: R. Roberts [SY-97-01]
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T10/97-110R1   Date: 1/6/97 Author: Weber/Lohmeyer [SY-97-01]
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T10/97-111R1   Date: 1/6/97 Author: Weber/Lohmeyer [SY-97-01]
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T10/97-112R1   Date: 1/6/97 Author: Weber/Lohmeyer [SY-97-01]
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T10/97-113R0   Date: 1/6/97 Author: G. Penokie [SY-97-01]
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T10/97-114R0   Date: 1/6/97 Author: B. Ham [SY-97-01]
Test Results on LVD

T10/97-115R0   Date: 1/6/97 Author: L. Lamers [SY-97-01]
Report on SPI-2 Editing Session

T10/97-115R1   Date: 4/22/97 Author: L. Lamers [SY-97-03]
Report on SPI-2 Editing Session

T10/97-116R0   Date: 1/6/97 Author: B. Ham [SY-97-02]
Bus Set Delay for Domain Expanders

T10/97-117R0   Date: 1/6/97 Author: R. Roberts [SY-97-01]
MMC-2 Commands specific to CD Media Only

T10/97-118R0   Date: 1/6/97 Author: R. Roberts [SY-97-01]
MMC-2 ATAPI Implementation Notes

T10/97-119R0   Date: 1/6/97 Author: R. Roberts [SY-97-01]
MMC-2 SCSI Implementation Notes

T10/97-120R0   Date: 1/6/97 Author: R. Roberts [SY-97-01]
MMC-2 DVD-R and DVD-RAM

T10/97-121R0   Date: 1/8/97 Author: D. Wallace [SY-97-02]
Annex on Universal Backplane

T10/97-122R0   Date: 1/8/97 Author: G. Penokie [SY-97-01]
Addressing Model for SAM-2

T10/97-122R1   Date: 1/8/97 Author: G. Penokie []
Addressing Model for SAM-2

T10/97-122R2   Date: 5/6/97 Author: G. Penokie [sy-97-03]
Addressing Model for SAM-2

T10/97-123R0   Date: 1/8/97 Author: G. Milligan [SY-97-01]
SBC X3T10 Letter Ballot Comment Resolution

T10/97-124R0   Date: 1/8/97 Author: T. Coughlan [SY-97-01]
Do Read Long and Write Long have a Secure Future?

T10/97-125R1   Date: 1/9/97 Author: E. Oetting [SY-97-01]
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T10/97-126R0   Date: 1/16/97 Author: R. DeKonig [SY-97-01]
Comments on IEEE Registration

T10/97-127R0   Date: 1/16/97 Author: R. Reisch [SY-97-01]
Public Review Comment #1 on X3.304 (MMC)

T10/97-128R0   Date: 1/22/97 Author: P. Johansson []
Transport Status for SBP-2

T10/97-128R2   Date: 1/22/97 Author: P. Johansson [SY-97-02]
Transport Status for SBP-2

T10/97-129R0   Date: 1/29/97 Author: Keith W. Parker []
SCSI Socket/SSL Services (SSS) Command Set Proposal

T10/97-129R2   Date: 1/29/97 Author: Keith W. Parker [SY-97-02]
Project Proposal for SCSI Socket/SSL Services (SSS) Command Set

T10/97-130R0   Date: 2/6/97 Author: J. Scheible [SY-97-02]

Letter Ballot Comment Resolution on SSA-PH2

T10/97-131R0   Date: 2/6/97 Author: J. Scheible []
Letter Ballot Comment Resolution on SSA-TL2

T10/97-131R1   Date: 2/6/97 Author: J. Scheible [SY-97-02]
Letter Ballot Comment Resolution on SSA-TL2

T10/97-132R0   Date: 2/6/97 Author: J. Scheible [SY-97-02]
Letter Ballot Comment Resolution on SSA-S3P

T10/97-133R0   Date: 2/9/97 Author: P. Johansson [SY-97-02]
REQUEST ABORTED Response Status in SBP-2

T10/97-134R1   Date: 2/9/97 Author: P. Johansson [SY-97-02]
Unsolicited Status Handshake in SBP-2

T10/97-135R0   Date: 2/13/97 Author: P. McLean [SY-97-02]
Minutes of SBP-2 Working Group - 2/12-13/97

T10/97-136R0   Date: 2/24/97 Author: P. Johansson [SY-97-02]
Task management event matrix

T10/97-137R0   Date: 3/3/97 Author: Weber/Lohmeyer [SY-97-02]
Minutes of SPI-2 Working Group - 3/97

T10/97-138R1   Date: 3/3/97 Author: Weber/Lohmeyer [SY-97-02]
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T10/97-139R1   Date: 3/3/97 Author: Weber/Lohmeyer [SY-97-02]
Minutes of T10 Plenary Meeting #20

T10/97-140R0   Date: 3/3/97 Author: G. Penokie [SY-97-02]
Additional Device Types for ASC/ASCQ

T10/97-141R0   Date: 3/3/97 Author: G. Penokie []
Message Issues

T10/97-141R3   Date: 3/3/97 Author: G. Penokie [SY-97-02]
Message Issues

T10/97-142R1   Date: 3/3/97 Author: G. Penokie [SY-97-02]
Reserve/Release Issues

T10/97-143R0   Date: 3/5/97 Author: C. Monia [SY-97-02]
Digital Equipment Corp. SCAM Patent Disclosure

T10/97-144R0   Date: 3/10/97 Author: B. Ham [SY-97-02]
LVD Hot Plugging Results - 3/10/96

T10/97-145R0   Date: 3/10/97 Author: Keith W. Parker [SY-97-02]
Presentation on SCSI Socket/SSL Services

T10/97-146R0   Date: 3/10/97 Author: V. Bastiani [SY-97-02]
Presentation on LVD/Ultra-3

T10/97-147R0   Date: 3/10/97 Author: G. Penokie [SY-97-02]
Minutes of SCC Working Group - 3/97

T10/97-148R1   Date: 3/11/97 Author: Eric Oetting [SY-97-02]
SMC Device Identification

T10/97-149R0   Date: 3/11/97 Author: P. McLean [SY-97-02]
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T10/97-150R0   Date: 3/11/97 Author: J. McGrath [SY-97-02]
Parallel SCSI Performance

T10/97-151R0   Date: 3/12/97 Author: C. Monia [SY-97-02]
Status of SCSI Error Recovery

T10/97-152R0   Date: 3/12/97 Author: R. Roberts [SY-97-02]
MMC-1 Public Review Comments Resolution

T10/97-153R0   Date: 3/12/97 Author: R. Roberts [SY-97-02]
Minutes of the MMC Working Group - 3/97

T10/97-154R0   Date: 3/13/97 Author: E. Oetting [SY-97-02]
Minutes of SMC Working Group - 3/97

T10/97-155R1   Date: 3/24/97 Author: D. Hagerman [SY-97-02]
Tapes in FC PLDA

T10/97-156R0   Date: 3/28/97 Author: Kate McMillan [SY-97-02]
Proposed New SD3 Project Proposal Guide

T10/97-157R0   Date: 4/15/97 Author: J. Fuller [SY-97-03]
SBP-2 ORB Grouping for Non-Sequential Execution

T10/97-158R0   Date: 4/15/97 Author: J. Fuller [SY-97-03]
SBP-2 Enhanced Page Tables

T10/97-159R0   Date: 4/15/97 Author: D. Steele / F. Gasparik
[SY-97-03]
FAST-40 Rebuttal
T10/97-160R1   Date: 4/15/97 Author: Weber/Lohmeyer [SY-97-03]
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T10/97-161R0   Date: 4/15/97 Author: P. McLean [SY-97-03]
Minutes of the SBP-2 Working Group - 4/10/97

T10/97-162R0   Date: 4/15/97 Author: P. McLean [SY-97-03]
Project proposal for command definition for mass storage on 1394

T10/97-163R0   Date: 4/18/97 Author: M. LoBue [SY-97-03]
STA Recommendations on Ultra-3

T10/97-164R0   Date: 4/18/97 Author: V. Bastiani [SY-97-03]
Presentation on Test Results for Ultra-3

T10/97-165R0   Date: 4/18/97 Author: W. Bridgewater [SY-97-03]
First Pulse Measurements

T10/97-166R0   Date: 4/18/97 Author: F. Gasperik [SY-97-03]
Analysis of Data presented

T10/97-167R0   Date: 4/18/97 Author: L. Barnes [SY-97-03]
SCSI Universal Backplane Microstrip Configuration

T10/97-168R0   Date: 4/18/97 Author: B. Ham [SY-97-03]
FAST 40 AND FAST 80 DATA FROM MULTIMODE BACKPLANES

T10/97-169R0   Date: 4/22/97 Author: K. Gingerich [SY-97-03]
Simplified AC Model of the LVD SCSI Bus

T10/97-170R1   Date: 4/26/97 Author: G. Penokie [SY-97-03]
Additional Device Types for ASC/ASCQs for SCC-2

T10/97-171R0   Date: 4/26/97 Author: G. Penokie [SY-97-03]
Minutes of the SCC-2 working group - 5/96

T10/97-172R0   Date: 4/28/97 Author: V. Bastiani [SY-97-03]
Analysis of Driver/Reciever Response

T10/97-173R0   Date: 5/1/97 Author: P. McLean [SY-97-03]
Mass Storage Profile for 1394 presentation

T10/97-174R0   Date: 5/1/97 Author: P. Aloisi [SY-97-03]
Single Ended Termination Issues

T10/97-175R0   Date: 5/5/97 Author: Weber/Lohmeyer [SY-97-03]
Minutes of SPI working group - 05/97

T10/97-176R0   Date: 5/5/97 Author: Weber/Lohmeyer [SY-97-03]
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T10/97-177R0   Date: 5/5/97 Author: Weber/Lohmeyer [SY-97-03]
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T10/97-178R0   Date: 5/5/97 Author: V. Bastiani [SY-97-03]
Presentation on Ultra-3 - 05/97

T10/97-179R0   Date: 5/5/97 Author: B. Ham [SY-97-03]
TEST RESULTS WITH ASYMMETRICAL DRIVERS, BIAS TERMINATORS, AND COMPLEX LOADS

T10/97-180R0   Date: 5/5/97 Author: P. Aloisi [SY-97-03]
Terminator Specifications

T10/97-181R0   Date: 5/5/97 Author: W. Bridgewater [SY-97-03]
Presentation on LVD testing

T10/97-182R0   Date: 5/6/97 Author: V. Novak [SY-97-03]
REQ/ACK Mismatch

T10/97-183R0   Date: 5/6/97 Author: Tom Coughlin [SY-97-03]
Persistent Reservation-What if the keys are not unique?

T10/97-184R0   Date: 5/6/97 Author: Doug Hagerman [SY-97-03]
Use of Class 2 for Fibre Channel Topics

T10/97-185R0   Date: 5/6/97 Author: P. McLean [SY-97-03]
SBP-2 Error senarios

T10/97-186R1   Date: 5/6/97 Author: C. Monia [SY-97-03]

Request for Interpretation - Multiple-byte fields

T10/97-187R0   Date: 5/6/97 Author: C. Monia [SY-97-03]
Error Recovery Policy Requirements for Command Queueing

T10/97-188R0   Date: 5/8/97 Author: Eric Oetting [SY-97-03]
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T10/97-189R0   Date: 5/8/97 Author: Eric Oetting [SY-97-03]

T10/97-190R0   Date: 5/8/97 Author: Rob Reisch [SY-97-03]
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