Accredited Standards Committee
X3, INFORMATION PROCESSING SYSTEMS*

Doc. No.: X3T9.2/92-1

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Project:
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Reply to: John B. Lohmeyer

X3 Technical Committee
Annual Report for 1991
X3T9.2 -- Lower Level Interfaces

I.   Projects

1.   Small Computer System Interface (SCSI-2)

a.   Project 375-R, Small Computer System Interface (SCSI-2)

b.   Target date for dpANS to X3:

Original target date:	January 1988
Previous target date:	September 1991
Current target date:	December 1991

c.   Project Description: This is an extension of ANSI, X3.131, Small Computer System Interface, a low cost but highly "intelligent" bus interface for microprocessor-based computer systems. The interface is primarily aimed at the interconnection of small computers and high-bandwidth block transfer peripherals and includes relatively high-level command command sets for magnetic disks and tapes, optical disks, and printers. This is a multimaster bus which also supports direct computer-to-computer interconnections. SCSI-2 adds some new device types (e.g., scanners, communications devices, and "jukeboxes") and considerably expands the command sets for some existing device types. It also provides for faster data transfer rates (up to 40 MBytes per second).

d.   Publications During Past Year: Revisions 10d, 10e, 10f, 10g, and 10h of X3T9.2/86-109, Small Computer System Interface - 2, were issued during 1991. Revision 10h was forwarded by X3T9 at its December 1991 meeting for public review.

e.   Statement of Progress or Accomplishments During Year: In late 1990, X3T9.2 requested that X3T9 take the necessary steps to recall SCSI-2 from ANSI (which had approved revision 10c in August 1990). This recall was to correct a number of minor problems encountered during the ANSI publication process. During 1991 SCSI-2 was converted from WordStar (tm) to Word Perfect (tm) so that the document could be reviewed by the task group in a form closer to final publication format. Furthermore, a number of ambiguities and misleading statements were clarified and corrected.

f.   Statement of Status as of This Report: SCSI-2 revision 10h has been forwarded to X3 for a second public review period. It is the Task Group's understanding that the document will be processed at Milestone 8 as if technical changes were made as the result of the first public review.

g.   Future Plans: X3T9.2 has begun activities on several approved projects that are often referred to collectively as SCSI-3. These projects are: SCSI-3 Parallel Interface (SPI) [855-D], SCSI-3 Interlocked Protocol (SIP) [856-D], SCSI-3 Packetized Protocol (SPP) [881-D], and SCSI-3 Command Set (SCS) [854-D].

h.   Reasons for Delay: The project was delayed because of a change in the ANSI publication practices which was made retroactive to include SCSI-2.

2.   Enhanced Small Device Interface (ESDI)

a.   Project 587-D, Enhanced Small Device Interface (ESDI)

b.   Target date for dpANS to X3:

Original target date:
Previous target date: April 1989
Current target date: X3 approved ESDI 10/10/89

c.   Project Description: ESDI defines a disk interface oriented toward newer disk drives with transfer rates of 10 to 24 Mbit/sec. Much of the development work on ESDI was done by an industry group while this project was assigned to X3T9.3. In June 1987, this project was transferred to X3T9.2.

d.   Publications During Past Year: ANSI X3.170-1991 and X3.170A-1991.

e.   Statement of Progress or Accomplishments During Year: The standard and the amendment to delete Table 28 were concurrently published the last week of December 1991.

f.   Statement of Status as of This Report: Published.

g.   Future Plans: X3T9.2 has no current plans to revise or enhance ESDI. This interface is obsolete in that few (if any) new products are being designed to it. The standards process has been so slow on this project that the ANSI standard is now mostly of historical interest.

h.   Reasons for Delay: ANSI was unwilling to accept the unanimous consensus of X3, X3T9, and X3T9.2 that the deletion of Table 28 was purely editorial.

3.   Small Computer System Interface (SCSI-3)

a.   Project 685-D, Small Computer System Interface (SCSI-3)

b.   Target date for dpANS to X3:

Original target date: February 1991
Previous target date: April 1993
Current target date: Never

c.   Project Description: This project, which would have included all of the SCSI-3 work in one document, has been superseded by four projects: SCSI-3 Parallel Interface (SPI) [855-D], SCSI-3 Interlocked Protocol (SIP) [856-D], SCSI-3 Packetized Protocol (SPP) [881-D], and SCSI-3 Command Set (SCS) [854-D].

4.   SCSI Common Access Method (SCSI CAM)

a.   Project 792-D, SCSI Common Access Method

b.   Target date for dpANS to X3:

Original target date: August 1991
Previous target date: August 1991
Current target date: June 1992

c. Project Description: This project will define a common method to access SCSI devices through a standard software interface to SCSI host adapters for several popular operating systems. This should result in simplified integration of products.

d. Publications During Past Year: Three revisions of the SCSI-2 Common Access Method Transport and SCSI Interface Module working draft document was distributed.

e. Statement of Progress or Accomplishments During Year: Revision 2.5 of the document was forwarded to X3T9 and passed the X3T9 letter ballot on forwarding the document to X3 for its first public review period. However, X3T9 agreed to return the document to X3T9.2 to address a comment that accompanied a "yes" ballot and to address additional comments received directly by X3T9.2 after it had forwarded SCSI CAM.

f. Statement of Status as of This Report: X3T9.2 expects to distribute another revision of SCSI CAM in its March 1992 mailing for possible forwarding at its April 1992 meeting.

g. Future Plans: X3T9.2 expects to forward CAM back to X3T9 in April 1992.

h. Reasons for Delay: X3T9.2 decided that SCSI CAM would benefit from addressing the comments received after its initial forwarding.

5. AT Attachment Interface for Disk Drives (ATA)

a. Project 791-D, AT Attachment Interface for Disk Drives

b. Target date for dpANS to X3:

Original target date:	August 1991
Previous target date:	August 1991
Current target date:	December 1991

c. Project Description: The widespread use of desktop computers with a 16-bit memory bus has led to the adoption within the industry of a disk drive which attaches via a subset of the personal computer AT bus. Because of their compatibility with existing personal computer AT hardware and software this interface quickly became a de facto industry standard. The intent of this project is to develop a standard to specify a subset of the AT bus specifically for the direct attachment of peripherals. This standard will specify the mechanical and electrical characteristics as well as the methods by which commands are directed to peripherals, the contents of registers, and the method of data transfers.

d. Publications During Past Year: Four revisions of the AT Attachment working draft standard were distributed.

e. Statement of Progress or Accomplishments During Year: The draft proposed AT Attachment standard has been forwarded to X3 for its first public review period.

f. Statement of Status as of This Report: AT Attachment is at SPARC waiting for its compliance review before beginning its first public review period.

g. Future Plans: A project proposal for an ATA Extensions project has been submitted to SPARC. If approved, this project will result in a standard that adds several features to AT Attachment including the ability to attach more than two devices; and mapping the interface to the emerging Memory Card interface.

h. Reasons for Delay: What's four months among friends?

6.   SCSI-3 Command Set (SCS)

a.   Project 854-D, SCSI-3 Command Set

b.   Target date for dpANS to X3:

         Original target date: April 1993
         Previous target date:
         Current target date: April 1993

c.   Project Description: The SCSI-3 Command Set standard will maintain a high degree of
         compatibility with SCSI-2 command sets while providing extensions and enhancements to support
         new features and new devices. This standard will not include the physical transport and media
         access layers as was the case in SCSI-2.   Instead, multiple transport mechanisms will be
         supported through separate standards.

d.   Publications During Past Year: none.

e.   Statement of Progress or Accomplishments During Year: Some agreements have been reached
         and are documented in the form of accepted proposals and/or meeting minutes.

f.   Statement of Status as of This Report: The Task Group still does not have a volunteer for editor
         of this document. If an editor is not found soon, the project will not meet the target date.

g.   Future Plans: It seems likely that the SCSI-3 Command Set will be structured into three or more
         parts, each part containing related command sets. One suggested division is Block, Stream, and
         Other command sets. It may be advisable to break this project into three separate projects along
         this division. This would break a large document into more manageable documents and may
         facilitate finding editors. (Of course, three editors would then be necessary.)

h.   Reasons for Delay: No delay, yet.

7.   SCSI-3 Parallel Interface (SPI)

a.   Project 855-D, SCSI-3 Parallel Interface

b.   Target date for dpANS to X3:

         Original target date: April 1992
         Previous target date:
         Current target date: December 1992

c.   Project Description: The SCSI-3 Parallel Interface standard will maintain a high degree of
         compatibility with SCSI-2 while providing documentation for new capabilities including an option
         to permit 16-bit data transfers on a single cable and expanded bus connectivity options to increase
         the maximum number of SCSI devices on a cable from 8 to 16 or more. This standard is not
         intended to address areas above the physical level (such as protocol and command sets). It is
         intended that this proposed standard could be used in conjunction with the command sets defined
         in SCSI-2 and/or subsequent versions of SCSI.

d.   Publications During Past Year: Two draft documents were distributed.

e.   Statement of Progress or Accomplishments During Year: The document architecture and draft
         versions of the draft standard were distributed. Significant effort has been focused on solving the
         signal quality issues on single-ended SCSI.

f.   Statement of Status as of This Report: A SPI ad hoc group has been established to address the remaining physical issues. Delays on the other SCSI-3 projects may result in X3T9.2 choosing to delay the forwarding of this project.

g.   Future Plans: none.

h.   Reasons for Delay: Reaching consensus on signal quality issues is taking longer than expected. Delays in the other SCSI-3 projects may cause further delays in this project.

8.   SCSI-3 Interlocked Protocol (SIP)

a.   Project 856-D, SCSI-3 Interlocked Protocol

b.   Target date for dpANS to X3:

        Original target date: April 1992
        Previous target date: April 1992
        Current target date: December 1992

c.   Project Description: The SCSI-3 Interlocked Protocol standard will maintain a high degree of compatibility with the equivalent functions in SCSI-2 while defining several new features and functions. The candidate new features are support of more than 8 devices, dual porting, and other evolutionary features. This standard is intended to be used in conjunction with the SCSI-2 Parallel Interface standard and the SCSI-3 Commmand Set standard.

d.   Publications During Past Year: A first draft document was distributed.

e.   Statement of Progress or Accomplishments During Year: Progress was made in the document architecture, defining a method to support more than eight devices, and in defining a dual port facility.

f.   Statement of Status as of This Report: Satisfactory progress has been made on this project, however it may encounter delays because of anticipated slips in the SCSI-3 Command Set project. Until the service interface between these documents is stable, it is not prudent to forward this standard.

g.   Future Plans: none.

h.   Reasons for Delay: This project has encountered delays due the slip in the SCSI-3 Parallel Interface project and may encounter further delays due to possible slips in the SCSI-3 Command Set project.

9.   SCSI-3 Packetized Protocol (SPP)

a.   Project 881-D, SCSI-3 Packetized Protocol

b.   Target date for dpANS to X3:

        Original target date: December 1992
        Previous target date:
        Current target date: December 1992

c.   Project Description: The SCSI-3 Packetized Protocol standard will define a generic protocol for transferring SCSI-3 Command Set information in a packetized format. This will permit SCSI commands, data, and status to be transferred over serial interfaces in a highly portable fashion. This approach will minimize the amount of interface-specific information required to map to a given

interface. The SCSI-3 Packetized Protocol defines most of the functions it requires and uses minimal services of the specific interface. This protocol is intended to minimize "turn arounds" so that overhead times are minimally dependent on distance.

d.   Publications During Past Year: A first draft document and two counterproposals were distributed.

e.   Statement of Progress or Accomplishments During Year: Progress was made in defining the issues involved in a generic packet protocol. Two interface-specific proposals were received (Fibre Channel and P1394). It has become apparent that the generic approach is not optimal for all applications.

f.   Statement of Status as of This Report: In a recent meeting, it was proposed that several mapping documents (or sections in one document) be adopted as the document architecture. This would permit both generic and interface-specific mappings to be standardized. A small group is planning to meet to explore this approach further.

g.   Future Plans: Most likely, additional project proposals for specific mapping documents to Fibre Channel, P1394, and possibly other interfaces will be submitted during 1992.

h.   Reasons for Delay: No delay, yet.

II.   Committee Projects: SD-4 Report Input

X3 PROJ. No/TYPE	TITLE	STD. DESIG.	EST. CMPL. DATE	ISO PROJ. DESIG.	JTC 1 DOC. NO.	Authorizing Document
0375-R	Small Computer System Interface (SCSI-2)	X3.131-199X	1992	10.13	DIS 9316	??? X3T9/85-136 Rev 1
0791-D	AT Attachment Interface for Disk Drives		1992			X3/90-1510
0792-D	SCSI Common Access Method		1992			X3/90-1511
0817-D	SCSI Technical Information Bulletins	N/A	1992	N/A		X3/90-2578
0854-D	SCSI-3 Command Set (SCS)		1993			X3/91-674R
0855-D	SCSI-3 Parallel Interface (SPI)		1993			X3/91-676R
0856-D	SCSI-3 Interlocked Protocol (SIP)		1993			X3/91-677R
0881-D	SCSI-3 Packetized Protocol (SPP)		1993			X3/90-675R

III.   Committee Activities

a.   Previous Year's Meetings:

February 18-19, 1991; Austin, TX
April 22-23, 1991; St. Petersburg Beach, FL
June 17-18, 1991; Minneapolis, MN
August 19-20, 1991; Boulder, CO
October 14-15, 1991; Ft. Lauderdale, FL

December 9, 1991; San Diego, CA

b.   Next Year's Planned Meetings:

February 17-18, 1992; Austin, TX
April 27-28, 1992; St. Petersburg Beach, FL
June 22-23, 1992; Minneapolis, MN
August 17-18, 1992; Seattle, WA
October 12-13, 1992; Ft. Lauderdale, FL
December 7-8, 1992; San Diego, CA

c.   Officers:

Chairman: John B. Lohmeyer
Vice Chairman: I. Dal Allan
Secretary: Lawrence J. Lamers

d.   Membership: The current X3T9.2 membership list at the end of 1991 is attached.

e.   Liaison Activities: X3T9.3, ISO/IEC JTC1/SC25/WG4, IT8.

f.   Administrative Matters of Note:

As stated in my previous report, X3 should hire one or more professional editors and consider publishing X3 standards instead of using the ANSI publications department. This would ease the burden of finding qualified volunteer document editors in the Task Groups. The resulting standards would benefit from an earlier professional review and would likely be both higher in quality and more timely.

g.   Procedural Matters of Note:

The first two comments are repeated from may last two reports. The third comment is new:

1. In most cases, it is not feasible to delay project development until approval of the project proposal.

2. It still takes too long to process documents through public review. Because these delays are so long, it is inevitable that changes will be made, guaranteeing a second public review. We should overlap the SPARC compliance review with the public review period.

3. The X3T9 Technical Committee is now so large both in terms of membership and projects that X3T9 and X3 should consider ways to improve its operation. The Technical Committee and its Task Groups (X3T9.2, X3T9.3, and X3T9.5) meet together for one week bi-monthly. It is difficult to squeeze any more meetings into these crowded weeks as even the evenings are used for meetings. Furthermore, two of the Task Groups regularly meet between plenary weeks for a week of working group meetings. The working group meeting weeks are almost as full as the plenary weeks. Any simplification of X3 rules and procedures would help this situation.

IV.   Anticipated Projects

X3T9.2 has submitted project proposals for a Directly Addressable Device Interface and for Extensions to the AT Attachment Interface. Furthermore, X3T9.2 is considering recommending that two or more interface-specific mapping projects be initiated to map the SCSI-3 Command Set to serial interfaces. Depending on the results of further study, X3T9.2 may recommend that the SCSI-3 Command Set project be split into more than one project.

V.   Future Trends in This Technical Area

The lower-level I/O interface market is in a state of transition. This is largely the result of technological advances that permit physically smaller disk drives. These drives will trend toward I/O interfaces that directly attach to host system circuit cards without an interface cable. This has resulted in less emphasis on interfaces employing a cable and more emphasis on interfaces that can either plug directly into a processor card or into a device connector such as the PCMCIA.

Meanwhile, other I/O interface applications such as magnetic tape, printers, and optical devices are trending toward serial interfaces to reduce cabling costs. A key enabling technology for these applications is the higher clock rates now available in CMOS and other circuit technologies.

Attachments

    Final 1991 X3T9.2 Membership Summary
    Final 1991 X3T9.2 Document Register

X3T9.2 Final 1991 Membership

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X3T9.2 Final 1991 Document Register

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X3T9.2/91-1 Rev 1     Date: 1/15/91  Author: J. Lohmeyer  [3/7/91]
Desc: SCSI-3 Wide Bus Driving Rules Selection and Reselection Phases
 Res: Feb '91 plenary accepted for SCSI-3

X3T9.2/91-2 Rev 1     Date: 2/15/91  Author: K. Chan  [3/7/91]
Desc: Analysis of long single-ended buses
 Res:

X3T9.2/91-3           Date: 1/14/91  Author: M. Teener  [3/7/91]
Desc: P1394 High Speed Serial Bus -- A Technical Summary
 Res: Presented at the January '91 WG Meeting

X3T9.2/91-4           Date: 1/16/91  Author: Lamers/ Lohmeyer  [3/7/91]
Desc: Costa Mesa Working Group Minutes
 Res: n.a.

X3T9.2/91-5           Date: 1/15/91  Author: S. Anderson  [3/7/91]
Desc: Addition to Set Features command
 Res: Accepted for ATA Rev 2.3

X3T9.2/91-6 Rev 1     Date: 2/18/91  Author: M. Peper  [3/7/91]
Desc: How does one change the Active Notch field in the Notch Mode page?
 Res: Feb '91 plenary accepted for SCSI-2

X3T9.2/91-7           Date: 1/22/91  Author: Lamers/ Lohmeyer  [3/7/91]
Desc: Low-Power Differential Working Group Minutes January 14, 1991
 Res: n.a.

X3T9.2/91-8 Rev 1     Date: 2/18/91  Author: G. Stephens  [3/7/91]
Desc: SCSI-2 Message System Cleanup
 Res: 2nd half accepted for SCSI-2 Feb '91 (1st half assigned to WG)

X3T9.2/91-9           Date: 2/7/91   Author: J. Lohmeyer  [3/7/91]
Desc: X3T9.2 Annual Report for 1990
 Res: n.a.

X3T9.2/91-10 Rev 2    Date: 10/18/91 Author: K. Chan  [11/6/91]
Desc: draft working document SCSI-3 Parallel Interface (SPI)
 Res:

X3T9.2/91-11          Date: 10/18/91 Author: K. Chan  [11/6/91]
Desc: draft working document SCSI-3 Interlocked Protocol (SIP)
 Res:

X3T9.2/91-12          Date:          Author:  []
Desc: draft working document SCSI-3 Command Set (SCS)
 Res:

X3T9.2/91-13 Rev 1    Date: 11/8/91  Author: G. Stephens  [1/21/92]
Desc: draft working document SCSI-3 Packetized Protocol (SPP)
 Res:

X3T9.2/91-14 Rev 6    Date: 7/18/91  Author: G. Penokie  [7/22/91]
Desc: Control of SCSI Device Power Consumption
 Res: Accepted for SCSI-3 at Aug '91 meeting

X3T9.2/91-15          Date: 2/1/91   Author: J. Gallant  [3/7/91]
Desc: Changes for the Latest CAM document
 Res: Partially included in Rev 2.3

X3T9.2/91-16          Date: 1/28/91  Author: C. Brill  [3/7/91]
Desc: Working Group Week Meeting Notice: Harrisburg May 13-17, 1991
 Res: n.a.

X3T9.2/91-17          Date: 2/12/91  Author: K. Gonda  [3/7/91]
Desc: Ltr from Kris Gonda (ANSI) to Larry Lamers Re: SCSI-2 Editing
 Res: n.a.

X3T9.2/91-18          Date: 2/18/91  Author: B. Spence  [3/7/91]
Desc: Glitch Report--Silicon and Stub
 Res: Presented at Feb '91 meeting

X3T9.2/91-19          Date: 2/15/91  Author: P. Hanmann  [3/7/91]
Desc: Using MODE SELECT to reset a drive to defaults
 Res: Assigned to Mar '91 WG

X3T9.2/91-20          Date: 2/15/91  Author: G. Murdock  [3/7/91]
Desc: Low-Power Differential Test Setup and Results
 Res: Presented at Feb '91 meeting

X3T9.2/91-21          Date: 2/1/91   Author: G. Murdock  [3/7/91]
Desc: SCSI-2 Additions to Reconcile ISO 8482 and RS-485 Electrical Specs.
 Res: Feb '91 voted to reference RS-485 in SCSI-2

X3T9.2/91-22          Date: 2/18/91  Author: J. McGrath  [3/7/91]
Desc: Requirements for a Diagnostic Command Set
 Res: Assigned to Mar '91 WG

X3T9.2/91-23          Date: 2/19/91  Author: J. McGrath  [3/7/91]
Desc: Foils re ESDI Power Pin issue presented 2/19/91
 Res: (See also 90-199)  Gene Milligan to draft letter to IEC

X3T9.2/91-24          Date: 2/18/91  Author: J. McGrath  [3/7/91]
Desc: Requirements for Implementing Tagged Command Queuing
 Res: Assigned to Mar '91 WG

X3T9.2/91-25          Date: 2/18/91  Author: Chan/ Lohmeyer/ Penokie  [3/7/91]
Desc: SCSI-3 Architecture
 Res: Presented at Feb '91 meeting

X3T9.2/91-26          Date: 2/21/91  Author: Lamers/ Lohmeyer  [3/7/91]
Desc: X3T9.2 Meeting #92 Minutes -- February 18-19, 1991
 Res: n.a.

X3T9.2/91-27 Rev 1    Date: 3/22/91  Author: G. Penokie  [5/6/91]
Desc: New Additional Sense Code (5Dh)
 Res: Accepted for SCSI-3 at 4/91 meeting
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X3T9.2/91-28          Date: 3/4/91   Author: J. Lohmeyer  [3/7/91]
Desc: ltr re the Scanner Working Group Meeting -- April 24, 1991
 Res:

X3T9.2/91-29          Date: 3/7/91   Author: G. Tharakan  [3/7/91]
Desc: SCSI-3 CCS for scanner devices
 Res:

X3T9.2/91-30          Date: 3/11/91  Author: B. Spence  [3/7/91]
Desc: Cabling Article Submission
 Res:

X3T9.2/91-31          Date: 3/18/91  Author: B. Spence  [3/7/91]
Desc: Cable Issues
 Res:

X3T9.2/91-32          Date: 3/12/91  Author: G. Houlder  [3/7/91]
Desc: Response to ATN during RESELECTION
 Res:

X3T9.2/91-33          Date: 3/11/91  Author: G. Villapiano  [3/7/91]
Desc: Agenda items for April 24 Scanner Working Group Meeting
 Res:

X3T9.2/91-34 Rev 1    Date: 3/22/91  Author: G. Penokie  [5/6/91]
Desc: Response to X3T9.2/90-173 Document
 Res: Summarizes SCSI-2 R10d changes re concurrent I/O Processes

X3T9.2/91-35          Date: 3/18/91  Author: B. Galloway  [5/6/91]
Desc: Clean up of 5.6.13 MESSAGE PARITY ERROR
 Res: Recommended by 3/91 WG for SCSI-2 with minor changes

X3T9.2/91-36          Date: 3/18/91  Author: B. Galloway  [5/6/91]
Desc: SCSI-2 Medium Changer Devices field descriptions
 Res: Recommended by 3/91 WG for SCSI-2

X3T9.2/91-37          Date: 8/3/90   Author: T. Le  [5/6/91]
Desc: FPT - Forced Perfect Termination
 Res:

X3T9.2/91-38          Date: 8/3/90   Author: T. Le  [5/6/91]
Desc: FPT - Forced Perfect Termination (Foils)
 Res: Presented at Mar '91 WG Meeting

X3T9.2/91-39 Rev 1    Date: 4/3/91   Author: P. Boulay  [5/6/91]
Desc: Media Changer Device Capabilities Page
 Res: Alternative 2A recommended by 3/91 WG for SCSI-2

X3T9.2/91-40          Date: 3/15/91  Author: D. Hagerman  [5/6/91]
Desc: Request for Interpretation of SCSI-2 on the use of MODE SENSE data
 Res: Doc not formally submitted--see 91-41 item 19

X3T9.2/91-41          Date: 3/21/91  Author: Lamers/ Lohmeyer  [5/6/91]
Desc: Sunnyvale Working Group Minutes
 Res: n.a.

X3T9.2/91-42          Date: 3/22/91  Author: J. Lohmeyer  [5/6/91]
Desc: Data Compression Working Group Meeting 3/18/91
 Res: n.a.

X3T9.2/91-43          Date: 3/20/91  Author: D. Moore  [5/6/91]
Desc: Questions about SCSI-2 Sequential-Access Devices
 Res: also see 91-45

X3T9.2/91-44          Date:          Author: G. Stephens  [9/11/91]
Desc: Commands to support Multi-pathing in SCSI-3
 Res:

X3T9.2/91-45          Date: 4/16/91  Author: C. Pisciotta  [5/6/91]
Desc: Sequential Access Density Code Correction
 Res: Accepted for SCSI-2 at Apr '91 meeting

X3T9.2/91-46 Rev 1    Date: 4/16/91  Author: J. Gallant  [7/22/91]
Desc: Proposed Changes and Additions for Common Access Method
 Res: Assigned to May '91 SCSI WG

X3T9.2/91-47          Date: 4/17/91  Author: G. Milligan  [5/6/91]
Desc: DC Power Connector for Personal Computer Peripherals
 Res: Completes Gene's 2/91 Action Item

X3T9.2/91-48 Rev 1    Date: 4/17/91  Author: G. Milligan  [5/6/91]
Desc: Suggested Minimum DCS Model
 Res: Assigned to May '91 SCSI WG

X3T9.2/91-49 Rev 1    Date: 4/25/91  Author: J. Lohmeyer  [5/6/91]
Desc: SCSI Bus Type Identification
 Res: Assigned to May '91 SCSI WG

X3T9.2/91-50          Date: 4/18/91  Author: R. Prichard  [5/6/91]
Desc: Fax re IT8/WG14 Scanner Activities
 Res: Assigned to Apr '91 Scanner WG

X3T9.2/91-51          Date: 4/21/91  Author: B. Galloway  [5/6/91]
Desc: MODE SELECT Error Detection
 Res: See Apr '91 minutes (91-58) item 9.4

X3T9.2/91-52 Rev 1    Date: 5/14/91  Author: J. McGrath  [7/22/91]
Desc: Cable Select Feature
 Res: Assigned to May '91 SCSI WG

X3T9.2/91-53          Date: 4/19/91  Author: D. Hagerman  [5/6/91]
Desc: Various SCSI Interpretation Questions
 Res: Assigned to May '91 SCSI WG

X3T9.2/91-54          Date: 4/4/91   Author: B. Johnson  [5/6/91]
Desc: Low-cost Serial Interface Presentation giving 4/23/91
 Res: Assigned to May '91 SCSI WG

X3T9.2/91-55          Date: 3/21/91  Author: Anon  [5/6/91]
Desc: Draft Detailed Charter for the IEEE Disk Attach Working Group
 Res: n.a.
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X3T9.2/91-56          Date: 4/22/91  Author: J. McGrath  [5/6/91]
Desc: New SCSI Commands for FFS (Flat File System)
 Res: Assigned to May '91 SCSI WG

X3T9.2/91-57 Rev 1    Date:           Author: D. Morrissey  [5/6/91]
Desc: Meeting Announcement - July '91 X3T9 Working Group Meetings
 Res: n.a.

X3T9.2/91-58 Rev 1    Date: 4/25/91  Author: Lamers/ Lohmeyer  [5/6/91]
Desc: X3T9.2 Meeting #93 Minutes -- April 22-23, 1991
 Res: n.a.

X3T9.2/91-59          Date: 4/25/91  Author: J. Lohmeyer  [5/6/91]
Desc: SCSI-3 Scanner Working Group Meeting Minutes -- April 24, 1991
 Res: n.a.

X3T9.2/91-60          Date: 4/24/91  Author: E. Luttig  [5/6/91]
Desc: Recommended change to SCSI-2
 Res:

X3T9.2/91-61          Date: 5/6/91   Author: M. Lazar  [5/6/91]
Desc: Proposal to add 60/68-pin ribbon-contact style connector to standard
 Res:

X3T9.2/91-62          Date: 5/3/91   Author: T. Wicklund  [5/6/91]
Desc: Outbound disconnect and Disconnect Time Limit
 Res:

X3T9.2/91-63          Date: 5/8/91   Author: B. Medlinski  [5/6/91]
Desc: SCSI Identifier Symbols
 Res:

X3T9.2/91-64 Rev 2    Date: 12/7/91  Author: D. Steele  [1/21/92]
Desc: Fast Single-Ended and other Recommended Changes to SCSI-3 Parallel I/F
 Res:

X3T9.2/91-65          Date: 4/22/91  Author: J. McGrath  [7/22/91]
Desc: Tagged Queuing Restrictions
 Res:

X3T9.2/91-66          Date: 5/8/91   Author: J. McGrath  [7/22/91]
Desc: Using a PCMCIA Interface on 1.8" Winchester Disk Drives
 Res:

X3T9.2/91-67          Date: 5/2/91   Author: A. Wilhelm  [7/22/91]
Desc: Request for new SCSI Peripheral Device Type "Floptical"
 Res:

X3T9.2/91-68          Date: 5/13/91  Author: A. Wilhelm  [7/22/91]
Desc: Proposal for addition of two new Medium Types to Table 8-45
 Res:

X3T9.2/91-69          Date: 5/13/91  Author: B. Snively  [7/22/91]
Desc: Conformance of SPP and Fiber Channel
 Res:

X3T9.2/91-70          Date: 5/16/91  Author: Lohmeyer  [7/22/91]
Desc: Harrisburg Working Group Minutes
 Res:

X3T9.2/91-71 Rev 1    Date: 6/18/91  Author: G. Penokie  [7/22/91]
Desc: Direct-access removable media ASCQs (another Penokie request)
 Res: Accepted for SCSI-3 at June '91 meeting

X3T9.2/91-72          Date: 5/23/91  Author: D. Therrien  [7/22/91]
Desc: Additional Medium Changer features to improve interoperation
 Res: (see also 91-121)

X3T9.2/91-73          Date: 5/18/91  Author: D. Allan  [7/22/91]
Desc: SCSI Bus Type Identification
 Res: Also see 91-49 & 91-63

X3T9.2/91-74          Date: 6/5/91   Author: D. Allan  [7/22/91]
Desc: Draft Project Proposal for SCSI Diagnostic Command Set
 Res: Rejected at Aug '91 meeting

X3T9.2/91-75          Date: 5/28/91  Author: P. Manley  [7/22/91]
Desc: Proposal to support removable media drives on ATA Interface
 Res:

X3T9.2/91-76          Date: 5/13/91  Author: P. Dougherty  [7/22/91]
Desc: LUNTAR, LUNTRN Bits, and Target Routine Functions
 Res: Peter to revise for SCSI-3

X3T9.2/91-77          Date: 6/11/91  Author: D. Allan  [7/22/91]
Desc: ltr to Ken Jochim (PRAIRIETEK) re Patent Number 4933785, Claim 45
 Res: (see 91-92)

X3T9.2/91-78          Date: 5/8/91   Author: L. Barra  [7/22/91]
Desc: X3 approval of deletion of Project 685-D, SCSI-3
 Res:

X3T9.2/91-79          Date: 5/8/91   Author: L. Barra  [7/22/91]
Desc: X3 approval of new Project 854-D, SCSI-3 Command Set
 Res:

X3T9.2/91-80          Date: 5/8/91   Author: L. Barra  [7/22/91]
Desc: X3 reconsideration of new Project ???-D, SCSI-3 Packetized Protocol
 Res: One negative ballot to address--see 91-84

X3T9.2/91-81          Date: 5/8/91   Author: L. Barra  [7/22/91]
Desc: X3 approval of new Project 855-D, SCSI-3 Parallel Interface
 Res:

X3T9.2/91-82          Date: 5/8/91   Author: L. Barra  [7/22/91]
Desc: X3 approval of new Project 856-D, SCSI-3 Interlocked Protocol
 Res:

X3T9.2/91-83          Date: 5/8/91   Author: L. Barra  [7/22/91]
Desc: X3 approval of Pre-Publication withdrawl of X3.131-1990, SCSI-2
 Res:
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X3T9.2/91-84 Rev 1   Date: 6/20/91 Author: D. Shoemaker [7/22/91]
Desc: Draft response to X3 negative on SCSI-3 Packetized Protocol Project
 Res: See 91-80

X3T9.2/91-85   Date: 6/14/91 Author: B. Huntsman [7/22/91]
Desc: Request that SCSI-2 CAM Document not be forwarded yet.
 Res:

X3T9.2/91-86   Date: 6/14/91 Author: G. Milligan [7/22/91]
Desc: ltr to Fred Lucas, Chair TR30.2, re International Version of RS-485
 Res:

X3T9.2/91-87   Date: 5/15/91 Author: F. Podio [7/22/91]
Desc: Workshop on error rates and error distributions in optical disks
 Res:

X3T9.2/91-88   Date: 6/13/91 Author: A. Wilhelm [7/22/91]
Desc: Proposal to modify Device Type 0 to support Media Interchange
 Res: Sep '91 WG recommended several changes to remove OS dependencies

X3T9.2/91-89   Date: Author: M. Lazar [7/22/91]
Desc: Industry Standardization of 60 & 68 Position Ribbon Contact Connectors
 Res: Rejected at the June '91 Plenary meeting

X3T9.2/91-90   Date: 6/20/91 Author: P. Boulay [7/22/91]
Desc: Media Scan Command, SCSI-2, Chapter 15
 Res: Accepted for SCSI-2 Aug '91

X3T9.2/91-91 Rev 2   Date: 6/22/91 Author: Lamers/ Lohmeyer [7/22/91]
Desc: X3T9.2 Meeting #94 Minutes -- June 17-18, 1991
 Res: n.a.

X3T9.2/91-92   Date: 6/20/91 Author: K. Jochim [7/22/91]
Desc: ltr to Dal Allan re PrairieTek patent 4933785
 Res: (see also 91-77)

X3T9.2/91-93   Date: 6/21/91 Author: K. Chan [7/22/91]
Desc: Analysis of Nonlinear SCSI Bus Termination
 Res:

X3T9.2/91-94   Date: 6/27/91 Author: B. Huntsman [7/22/91]
Desc: Adding a Conformance Clause to CAM
 Res: Resolved in CAM R2.5

X3T9.2/91-95   Date: 6/27/91 Author: B. Huntsman [7/22/91]
Desc: Removing Assumptions about Target Devices
 Res: Rejected

X3T9.2/91-96   Date: 6/27/91 Author: B. Huntsman [7/22/91]
Desc: Clarifying Relationship of XPT to SIM
 Res: Resolved in CAM R2.5

X3T9.2/91-97   Date: 6/27/91 Author: B. Huntsman [7/22/91]
Desc: Minor Problems with CAM
 Res: Resolved in CAM R2.5

X3T9.2/91-98 Rev 1   Date: 8/15/91 Author: G. Penokie [9/11/91]
Desc: Proposed Queuing Model
 Res:

X3T9.2/91-99   Date: 6/18/91 Author: G. Stephens [7/22/91]
Desc: Fabric Loop Meeting, June 18, 1991
 Res: n.a.

X3T9.2/91-100   Date: Author: R. Cummings [7/22/91]
Desc: Meeting Announcement - Sept '91 X3T9 Working Group Meetings
 Res: n.a.

X3T9.2/91-101   Date: Author: R. Richens [7/22/91]
Desc: Proposed Common Configuration Method for ATA
 Res: alt solution added to ATA R2.5

X3T9.2/91-102 Rev 1   Date: 7/17/91 Author: D. Hagerman [7/22/91]
Desc: Request for Two Tape Media Identifiers
 Res: Accepted for SCSI-2 Aug '91

X3T9.2/91-103   Date: 7/11/91 Author: G. Stephens [7/22/91]
Desc: SCSI-2 91-043 R0 Written Response
 Res: Documents previous verbal response

X3T9.2/91-104 Rev 1   Date: 8/23/91 Author: D. Allan [7/22/91]
Desc: Project Proposal for ATA Extensions
 Res: Forwarded to X3T9 Aug '91

X3T9.2/91-105   Date: 7/13/91 Author: E. Gardner [7/22/91]
Desc: Multi-Initiator, Enhanced Availability System Environments in SCSI-3
 Res: Ed will write "strawman" proposal

X3T9.2/91-106 Rev 4   Date: 11/4/91 Author: D. Pickford [1/21/92]
Desc: Format Status Log Page
 Res: Reflects changes accepted for SCSI-3 at 10/91 meeting

X3T9.2/91-107   Date: 7/16/91 Author: J. Lohmeyer [7/22/91]
Desc: Error in Implementors Note 1) in section 6.9 of SCSI-2 Rev 10e
 Res: Solution #1 accepted for SCSI-2 Aug '91

X3T9.2/91-108 Rev 1   Date: 8/23/91 Author: D. Allan [9/11/91]
Desc: Project Proposal for Directly-Addressable Device Interface (DADI)
 Res: Forwarded to X3T9 Aug '91

X3T9.2/91-109 Rev 1   Date: 8/23/91 Author: D. Allan [11/6/91]
Desc: Project Proposal for Flat File Command Set
 Res: Sept '91 WG recommended more study

X3T9.2/91-110   Date: 7/19/91 Author: Lamers/ Lohmeyer [7/22/91]
Desc: Valley Forge Working Group Minutes
 Res: n.a.

X3T9.2/91-111   Date: 7/8/91   Author: P. Fessler [7/22/91]
Desc: Fault Isolation Information Study Group (FIISG)
 Res: FYI

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X3T9.2/91-112          Date: 7/2/91   Author: X3 Secretariat  [7/22/91]
Desc: News Release on SCSI-3 Command Set Project (854-D)
 Res: FYI

X3T9.2/91-113          Date: 7/8/91   Author: X3 Secretariat  [7/22/91]
Desc: News Release on SCSI-3 Interlocked Protocol Project (856-D)
 Res: FYI

X3T9.2/91-114          Date: 7/18/91  Author: D. Shoemaker  [9/11/91]
Desc: Response to P. Borrill (IEEE) re "Disk Attach Interface" project
 Res: On X3T9 August '91 Agenda

X3T9.2/91-115          Date: 7/11/91  Author: L. Barra  [9/11/91]
Desc: Notification of Approval of Standard (ESDI)
 Res: At last!

X3T9.2/91-116          Date: 7/9/91   Author: X3 Secretariat  [9/11/91]
Desc: News Release on SCSI-3 Parallel Interface Project (855-D)
 Res: FYI

X3T9.2/91-117          Date: 7/3/91   Author: K. McMillan  [9/11/91]
Desc: ANSI Style Manual for Preparation of Proposed ANS (eighth edition)
 Res: FYI

X3T9.2/91-118          Date: 7/25/91  Author: G. Hahn  [9/11/91]
Desc: Dealing with multi-initiator issues
 Res: See 91-150

X3T9.2/91-119          Date: 8/5/91   Author: J. McGrath  [9/11/91]
Desc: Caching codes missing from ATA Rev 2.5
 Res:

X3T9.2/91-120          Date: 8/5/91   Author: L. Barra  [9/11/91]
Desc: X3 approval of new Project 881-D, SCSI-3 Packetized Protocol
 Res: FYI

X3T9.2/91-121          Date: 8/9/91   Author: B. Raudebaugh  [9/11/91]
Desc: Comments on X3T9.2/91-72 (Medium Changer Devices)
 Res: Raudebaugh, Therrien, & Galloway to address issues

X3T9.2/91-122          Date: 8/15/91  Author: B. Snively  [9/11/91]
Desc: Fiber Channel SCSI Protocol SCSI FC-4
 Res:

X3T9.2/91-123          Date: 8/5/91   Author: L. Barra  [9/11/91]
Desc: Assignment of Project No. 881-D, SCSI-3 Packetized Protocol
 Res:

X3T9.2/91-124          Date: 8/6/91   Author: X3 Secretariat  [9/11/91]
Desc: News Release on SCSI-3 Packetized Protocol Project (881-D)
 Res:

X3T9.2/91-125 Rev 1    Date: 8/9/91   Author: C. Pisciotta  [9/11/91]
Desc: Request for Sequential-Access density code
 Res: Rev 1 accepted for SCSI-2 Aug '91

X3T9.2/91-126 Rev 1    Date: 9/9/91   Author: B. Spence  [9/11/91]
Desc: Comparison of S/E Cable/Terminator Options
 Res: Reviewed at Sep '91 WG -- SSWG to address further

X3T9.2/91-127          Date: 8/14/91  Author: G. Penokie  [9/11/91]
Desc: Tagged Queuing Implementation Example
 Res:

X3T9.2/91-128          Date: 8/10/91  Author: D. Allan  [9/11/91]
Desc: Disk Attach Project
 Res:

X3T9.2/91-129          Date: 8/17/91  Author: D. Allan  [9/11/91]
Desc: Background to Material Submitted
 Res:

X3T9.2/91-130 Rev 1    Date: 9/1/91   Author: K. Chan  [9/11/91]
Desc: Active Negation Drivers and Alt-2 Termination
 Res:

X3T9.2/91-131          Date:          Author: D. Tolmie  [9/11/91]
Desc: Meeting Announcement -- November Working Group Meetings
 Res:

X3T9.2/91-132          Date: 8/16/91  Author: J. Chen  [9/11/91]
Desc: Changes in ATA Document, Revision 2.5, July 16,1991
 Res: Accepted for ATA Rev 2.6

X3T9.2/91-133          Date: 8/15/91  Author: B. Snively  [9/11/91]
Desc: Presentation: Description of SCSI FC-4
 Res:

X3T9.2/91-134          Date: 8/1/91   Author: T. Motoyama  [9/11/91]
Desc: Scanner Proposal
 Res:

X3T9.2/91-135          Date: 8/23/91  Author: D. Shoemaker  [9/11/91]
Desc: Response to X3T9 LB Negative on forwarding SCSI-1 for reaffirmation
 Res:

X3T9.2/91-136 Rev 1    Date: 8/20/91  Author: D. Shoemaker  [9/11/91]
Desc: X3T9 Position letter of IEEE Disk Attach Project
 Res: Accepted by X3T9 on August 23, 1991

X3T9.2/91-137          Date: 8/27/91  Author: Lamers/ Lohmeyer  [9/11/91]
Desc: X3T9.2 Meeting #95 Minutes -- August 19-20, 1991
 Res:

X3T9.2/91-138          Date: 8/9/91   Author: M. Freeman  [9/11/91]
Desc: ltr to Shoemaker re Memory Model I/F Proj Proposal (now DADI)
 Res: X3T9 to resolve issues (see 91-142)

X3T9.2/91-139          Date: 8/16/91  Author: G. Battrick  [9/11/91]
Desc: Fax to Tharakan re SCSI-3 Scanner Working Group
 Res:
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X3T9.2/91-140 Rev 1    Date: 10/8/91  Author: Abilay et al  [11/6/91]
Desc: Proposed Additions and Modifications to CAM interface
 Res:

X3T9.2/91-141         Date: 8/30/91  Author: J. Lohmeyer  [9/11/91]
Desc: Minutes of Scanner Working Group Meeting August 21, 1991
 Res:

X3T9.2/91-142         Date: 8/28/91  Author: D. Shoemaker  [9/11/91]
Desc: ltr to Freeman re his letter (91-138) on Memory Model I/F (now DADI)
 Res: see 91-138

X3T9.2/91-143         Date: 8/27/91  Author: S. Kolansky  [9/11/91]
Desc: ltr to G. Houlder re SCSI-3 dual port issues
 Res: See 91-149

X3T9.2/91-144         Date: 8/30/91  Author: D. Shoemaker  [9/11/91]
Desc: Letter to Camp enclosing X3T9 position paper (91-136R1)
 Res: (see 91-136R1)

X3T9.2/91-145         Date: 8/20/91  Author: F. Podio  [9/11/91]
Desc: Meeting Announcement & Draft Agenda for WG on Optical Disk Error Rates
 Res:

X3T9.2/91-146         Date: 8/20/91  Author: F. Podio  [9/11/91]
Desc: Minutes of Workshop on Optical Disk Error Rate Monitoring and Reporting
 Res:

X3T9.2/91-147         Date: 9/6/91   Author: J. Lohmeyer  [9/11/91]
Desc: ltr to C. Camp re his August 8, 1991 letter on IEEE DASG
 Res:

X3T9.2/91-148         Date: 9/4/91   Author: J. Williams  [9/11/91]
Desc: AEN via Request Sense
 Res: Sep '91 WG didn't like it

X3T9.2/91-149         Date: 9/10/91  Author: G. Houlder  [9/11/91]
Desc: Extensions for dual port SCSI (again)
 Res:

X3T9.2/91-150         Date: 9/9/91   Author: J. Lohmeyer  [9/11/91]
Desc: SDTR and WDTR Clarification
 Res: Accepted for SCSI-3 by Oct '91 plenary

X3T9.2/91-151         Date: 9/9/91   Author: B. Spence  [11/6/91]
Desc: Possible S/E Active-Negation Driver Requirements for SCSI-3
 Res: Assigned to 10/10/91 WG meeting

X3T9.2/91-152         Date: 9/6/91   Author: D. Allan  [11/6/91]
Desc: ltr to Somerville requesting ESDI be sent to ISO
 Res: See 91-158 response that request must come from J.P. Emard

X3T9.2/91-153         Date: 9/13/91  Author: E. Gardner  [11/6/91]
Desc: Proposed SCSI-3 I/O Process Progress Messages
 Res:

X3T9.2/91-154         Date:          Author: J. McGrath  [11/6/91]
Desc: Command Queuing Implementation Levels
 Res: Info presented by Jim at 9/16 Queuing mtg--do not have doc yet

X3T9.2/91-155         Date:          Author: S. Symers  [11/6/91]
Desc: QUEUE NOW FULL Message
 Res: Info presented by Scott at 9/16 Queuing mtg--do not have doc yet

X3T9.2/91-156         Date: 9/18/91  Author: Lamers/ Lohmeyer  [11/6/91]
Desc: St. Paul Working Group Minutes
 Res: n.a.

X3T9.2/91-157 Rev 1    Date: 9/23/91  Author: Penokie/ Lohmeyer  [11/6/91]
Desc: SCSI-3 Queuing Working Group Meeting Minutes
 Res: n.a.

X3T9.2/91-158         Date: 9/16/91  Author: B. Somerville  [11/6/91]
Desc: Response to D. Allan request re ESDI (see 91-152)
 Res:

X3T9.2/91-159         Date: 10/10/91 Author: J. Lohmeyer  [11/6/91]
Desc: DIFFSENSE Signal Loading Issue
 Res: Accepted for SCSI-3 Oct '91

X3T9.2/91-160         Date: 10/10/91 Author: S. Cornaby  [11/6/91]
Desc: SCSI-3 Proposed Queueing Model
 Res: Assigned to Queuing WG

X3T9.2/91-161         Date: 10/7/91  Author: D. DesRoches  [11/6/91]
Desc: Interpretation of Section 6.5.2 of SCSI-2
 Res: See item 10.1 of Oct '91 Minutes (91-173)

X3T9.2/91-162         Date: 10/8/91  Author: S. Smyers  [11/6/91]
Desc: Proposed change in time units for Timeout Value field in CAM
 Res:

X3T9.2/91-163         Date: 10/14/91 Author: J. McGrath  [11/6/91]
Desc: Command Queuing Model
 Res:

X3T9.2/91-164         Date: 10/14/91 Author: J. McGrath  [11/6/91]
Desc: X3 Trade Association
 Res:

X3T9.2/91-165         Date: 10/14/91 Author: J. McGrath  [11/6/91]
Desc: FFS Press Release
 Res:

X3T9.2/91-166         Date: 9/27/91  Author: L. Lamers  [11/6/91]
Desc: Report on IEEE NESCOM Meeting 9/25/91
 Res:

X3T9.2/91-167         Date: 10/2/91  Author: B. Spence  [11/6/91]
Desc: Agenda for the 10/10 Irvine Driver/Terminator Conference
 Res:
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X3T9.2/91-168 Rev 2    Date: 10/16/91 Author: B. Spence  [11/6/91]
Desc: Draft Minutes of the 10/10 Irvine Driver/Terminator Conference
 Res:

X3T9.2/91-169          Date: 10/18/91 Author: R. Fink  [11/6/91]
Desc: Results of X3T9 LB to forward SCSI-2 CAM as dpANS
 Res: X3T9 returned CAM for revision per X3T9.2 request

X3T9.2/91-170          Date: 9/5/91   Author: M. Mori [11/6/91]
Desc: ltr to Lamers with questions on SCSI-2
 Res:

X3T9.2/91-171          Date: 10/14/91 Author: S. Sharp  [11/6/91]
Desc: Memory Card Overview Presentation
 Res:

X3T9.2/91-172          Date: 9/1/91   Author: M. Teener  [11/6/91]
Desc: High Speed Serial Bus (P1394) Presentation
 Res:

X3T9.2/91-173          Date: 10/17/91 Author: Lamers/ Lohmeyer  [11/6/91]
Desc: X3T9.2 Meeting #96 Minutes -- October 14-15, 1991
 Res:

X3T9.2/91-174          Date: 10/15/91 Author: G. Penokie  [11/6/91]
Desc: Proposed Additional Connector to SCSI-3 Physical Interface
 Res:

X3T9.2/91-175          Date: 10/23/91 Author: P. Savage  [11/6/91]
Desc: Houston, 01/92, Meeting Announcement
 Res:

X3T9.2/91-176 Rev 1    Date: 11/28/91 Author: G. Penokie  [1/21/92]
Desc: SCSI Data Phase LRC proposal
 Res:

X3T9.2/91-177          Date: 11/4/91  Author: B. Spence  [11/6/91]
Desc: Proposed Resistor Values for Low-End S/E Terminator
 Res:

X3T9.2/91-178          Date: 11/4/91  Author: B. Spence  [11/6/91]
Desc: Proposed Specifications for High-End S/E Terminator
 Res:

X3T9.2/91-179          Date: 11/4/91  Author: B. Spence  [11/6/91]
Desc: Proposed Specifications for S/E Shielded Cables
 Res:

X3T9.2/91-180          Date: 11/4/91  Author: G. Houlder [11/6/91]
Desc: Question on Synchronous Transfer Agreement
 Res:

X3T9.2/91-181          Date: 10/18/91 Author: R. Fink  [11/6/91]
Desc: Results of X3T9 LB to forward AT Attachment as dpANS
 Res: Waiting for X3T9.2 response to Milligan comment

X3T9.2/91-182          Date: 10/14/91 Author: J. Pickitt  [11/6/91]
Desc: 1992-1993 Fees for Participation in X3, JTC1 TAG, and Their Subgroups
 Res: Service Fees to increase to $300/year

X3T9.2/91-183          Date:          Author: Lamers/ Penokie  [11/6/91]
Desc: SCSI-3 Queuing Working Group Minutes 10/14/91
 Res:

X3T9.2/91-184          Date: 11/5/91  Author: G. Milligan  [11/6/91]
Desc: Additional Comment on ATA Rev 2.6
 Res:

X3T9.2/91-185          Date: 11/9/91  Author: D. Steele  [1/21/92]
Desc: Voh/Ioh specification for active negation drivers
 Res:

X3T9.2/91-186          Date: 11/1/91  Author: S. Teymouri  [1/21/92]
Desc: Addition of a new Message to SCSI-3 Message Set
 Res:

X3T9.2/91-187          Date: 11/4/91  Author: F. Oprescu  [1/21/92]
Desc: Proposal for a Portable Machine SCSI Bus Termination
 Res:

X3T9.2/91-188          Date: 11/7/91  Author: F. Oprescu  [1/21/92]
Desc: SCSI Active Deassertion
 Res:

X3T9.2/91-189 Rev 1    Date: 12/6/91  Author: S. Smyers  [1/21/92]
Desc: SCSI-3 Common Command Set Mapping to P1394
 Res:

X3T9.2/91-190          Date: 11/8/91  Author: S. Smyers  [1/21/92]
Desc: SCSI3 CCS over P1394 (presentation)
 Res:

X3T9.2/91-191          Date: 11/12/91 Author: Wolf/ Smyers  [1/21/92]
Desc: SCSI-2 CAM Changes Proposal
 Res:

X3T9.2/91-192          Date:          Author: P. Wolf  [1/21/92]
Desc: Apple Late 1991 CAM Proposals Summary
 Res:

X3T9.2/91-193          Date: 11/1/91  Author: E. Grivna  [1/21/92]
Desc: IPI Command Queuing
 Res: Presented at 11/91 Queuing meeting

X3T9.2/91-194          Date: 11/12/91 Author: B. Spence  [1/21/92]
Desc: Driver and Terminator Terminal Characteristics
 Res:

X3T9.2/91-195          Date: 11/12/91 Author: E. Gardner  [1/21/92]
Desc: "What's In a Queue" presentation
 Res:
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X3T9.2/91-196          Date: 11/8/91  Author: J. Goldie  [1/21/92]
Desc: Electrical Characteristics Standards (EIA/TIA-485.1983 & ISO 8482.1987)
 Res:

X3T9.2/91-197          Date: 11/8/91  Author: J. Goldie  [1/21/92]
Desc: Comparison of Electrical Char. Stnds: EIA/TIA-485.1983 & ISO 8482.1987
 Res:

X3T9.2/91-198          Date: 11/13/91 Author: R. Muething  [1/21/92]
Desc: Recommendations for consideration into SCSI-3 Parallel Interface (SPI)
 Res:

X3T9.2/91-199          Date: 11/8/91  Author: G. Stephens  [1/21/92]
Desc: SCSI-3 Packetized Protocol (SPP) Pathing Commands
 Res:

X3T9.2/91-200          Date: 11/14/91 Author: Lamers/ Lohmeyer  [1/21/92]
Desc: Albuquerque Working Group Minutes
 Res:

X3T9.2/91-201          Date: 11/13/91 Author: Lamers/ Penokie  [1/21/92]
Desc: Albuquerque Queuing Working Group Minutes
 Res:

X3T9.2/91-202          Date: 11/7/91  Author: R. Van Brunt  [1/21/92]
Desc: P1394 (Serial Bus) Physical Layer for Cable Medium
 Res:

X3T9.2/91-203          Date: 10/25/91 Author: D. Allan  [1/21/92]
Desc: ltr to Jean-Paul Emard re sending ANSI X3.170A to ISO
 Res: (see also 91-152 & 91-158)

X3T9.2/91-204          Date: 11/22/91 Author: M. Martinez  [1/21/92]
Desc: March '92 Working Group Meeting Announcement
 Res:

X3T9.2/91-205          Date: 12/2/91  Author: J. Lohmeyer  [1/21/92]
Desc: ltr to William Burr re his X3T9 LB cmnt on SCSI-2 CAM
 Res: (see 91-169 for Burr letter)

X3T9.2/91-206          Date: 12/4/91  Author: J. Lohmeyer  [1/21/92]
Desc: ltr to Gene Milligan re his X3T9 LB cmnt on ATA
 Res: (see 91-181 for Milligan letter)

X3T9.2/91-207          Date: 12/5/91  Author: E. Gardner  [1/21/92]
Desc: Periodic LRC/CRC Proposal
 Res:

X3T9.2/91-208          Date: 12/5/91  Author: E. Gardner  [1/21/92]
Desc: LRC/CRC Negotiation, Commands vs. Messages
 Res:

X3T9.2/91-209          Date: 12/8/91  Author: B. Spence  [1/21/92]
Desc: A Modest Proposal
 Res:

X3T9.2/91-210          Date: 12/6/91  Author: A. Youngwerth  [1/21/92]
Desc: Discussion of SIM handling of CAM Command Timeouts
 Res:

X3T9.2/91-211          Date: 12/6/91  Author: A. Youngwerth  [1/21/92]
Desc: Freezing of LUN Queues following a SCSI Bus Reset
 Res:

X3T9.2/91-212          Date: 10/9/91  Author: D. Hagerman  [1/21/92]
Desc: Command Queuing exerts from IPI
 Res:

X3T9.2/91-213          Date: 12/9/91  Author: R. Allgood  [1/21/92]
Desc: Fast single ended and other recommendations for SCSI-3
 Res:

X3T9.2/91-214          Date: 12/4/91  Author: F. Oprescu  [1/21/92]
Desc: The Dip
 Res:

X3T9.2/91-215          Date: 12/9/91  Author: S. Ego  [1/21/92]
Desc: FPT sustained currents
 Res:

X3T9.2/91-216          Date: 12/11/91 Author: Lamers/ Lohmeyer  [1/21/92]
Desc: X3T9.2 Meeting #97 Minutes -- December 9-10, 1991
 Res:

X3T9.2/91-217          Date: 12/11/91 Author: Lamers/ Penokie  [1/21/92]
Desc: SCSI-3 Queuing Working Group Minutes 12/10/91
 Res:

X3T9.2/91-218          Date: 12/11/91 Author: Lamers/ Spence  [1/21/92]
Desc: SPI Working Group Minutes 12/10/91
 Res:

X3T9.2/91-219          Date: 11/8/91  Author: J. Goldie  [1/21/92]
Desc: Recommended changes to ISO 8482 to make compatible with EIA/TIA 485
 Res:

X3T9.2/91-220          Date: 12/16/91 Author: J. Schwandt  [1/21/92]
Desc: ltr to Milligan proposing ISO 8482 not be changed to match EIA/TIA 485
 Res:
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