

X3T9.2/86-127  
30 Dec 1986  
Rev 1  
16 Feb 1987

Approved Minutes  
X3T9.2 Meeting #67  
8-9 Dec 1986  
San Diego, CA

Approved Agenda  
X3T9.2 Meeting #67  
San Diego, CA  
8-9 Dec 1986  
9:00 a.m.

1. Opening Remarks
2. Approval of Agenda
3. Document Distribution
4. Attendance and Membership
5. Approval of Minutes - Meeting #66, Austin, TX
6. Review of Old Action Items
7. Old Business
  - 7.1 SCSI Icon/Logo -
  - 7.2 Operating System Interface for SCSI
  - 7.3 Extension of Address Space
  - 7.4 Review of SCSI-2 Draft
  - 7.5 Compatibility Philosophy
  - 7.6 Conduct of Meetings
  - 7.7 Field Pointer Bytes
  - 7.8 Testing SCSI
  - 7.9 16-Bit SCSI
8. New Business
  - 8.1 Bus Translators
  - 8.2 SCSI/IPI FIPS
  - 8.3 Copyrights
  - 8.4 Asynchronous Event Notification
  - 8.5 Proposed QIC 120 Density Code
  - 8.6 Identify Message
  - 8.7 Floppy Disk Proposed for SCSI-2
  - 8.8 Printer Proposal for SCSI-2
  - 8.9 Trademarks
9. Meeting Schedule
10. Review of Action Items
11. Adjournment

1. Opening Remarks.

The Chairman, Mr. Burr, opened the meeting at 9:00 a.m. on 8 Dec 1986 at the Bahia Resort Hotel in San Diego, California. He began by thanking Mr. Meadows of NCR for the excellent meeting facilities.

Mr. Burr announced that his three year term as Chairman, as well as the Vice Chairman's term, had expired. The mailing contained notices soliciting applications from interested parties (X3T9.2/86-112 & 113). Those notices called for applications to be submitted to SMC by 26 November. This was not, in Mr. Burr's opinion sufficient time; he had talked to Mr. Shoemaker (X3T9 Chairman) who had, in turn talked to Mr. Allen, the SMC Secretary, and he believed that applications would continue to be accepted through the remainder of 1986.

Mr. Burr stated that he would not be a candidate; this therefore would be his last meeting as X3T9.2 Chairman. He thanked the membership for their outstanding cooperation over the past few years. Mr. Burr will continue as a member of X3T9.2 and will continue to serve as Chairman until SMC appoints the new Chairman, which should happen before the next meeting. Mr. Burr kept the minutes.

2. Approval of Agenda

The agenda shown on the cover was approved.

3. Document Distribution.

The following documents were distributed in the mailing to all P, A and O members:

X3T9.2/86-108

The following documents were distributed in the mailing to P and A members:

X3T9.2/86-91  
-92  
-94 through 107  
-109 through 113

The following documents were distributed at the meeting:

X3T9.2/86-115 through 122

Enclosure (1) is the 1986 X3T9.2 Document Register.

4. Attendance and Membership

The meeting was attended by 70 individuals. The attendee list is enclosure (2). At the meeting, Mr. Gross became the P member from Interphase, while Mr. Klonick was replaced by Mr. Bonerje as the Maxtor P member, while Mr. Garretson replaced Mr. Meyer as the Nissei Sangyo P member. A summary of membership charges since the October meeting is found at enclosure (3), while enclosure (4) is the membership list for X3T9.2 as of 31 Dec 1986.

5. Approval of Minutes - Meeting #66, Austin, Texas

The minutes were reviewed and approved with minor corrections. They will be reissued as X3T9.2/86-108 Rev 1.

6. Review of Old Action Items

- 6.1 Mr. Murphy will supply Mr. Lohmeyer with a floppy containing X3T9.2/86-93, ASAP. This was done and is incorporated in the SCSI-2 draft, X3T9.2/86-109.
- 6.2 Mr. Schultz will supply Mr. Lohmeyer with a floppy containing X3T9.2/86-90, as revised, ASAP. This was done and is incorporated in the SCSI-2 draft.
- 6.3 Mr. Semenak will supply Mr. Lohmeyer with a floppy containing X3T9.2/57-R1, ASAP. This was done and is incorporated in the SCSI-2 draft.
- 6.4 Mr. Lohmeyer will integrate X3T9.2/86-93, X3T9.2/86-90, X3T9.2/86-57 Rev 1 and X3T9.2/86-46, most recent available revision, into a single document, to be distributed in the December meeting mailing. This was done and is X3T9.2/86-109.
- 6.5 Mr. Lohmeyer will make the mailing prior to the December meeting. This was done.
- 6.6 Mr. Lamers will send Mr. Lohmeyer a floppy containing X3T9.2/86-46, latest revision available, ASAP. This was done and is incorporated in the SCSI-2 draft.
- 6.7 Mr. Loski will develop a phase sequencing flow chart or diagram. This was done (X3T9.2/86-116).
- 6.8 Mr. Loski will reword the hard reset default discussion. Carried over.

- 6.9 Paul Nitza will revise wording concerning sending two Identify messages during the same I/O. This was done.
- 6.10 Mr. McIntyre will revise the proposed SCSI logo. Carried over.
- 6.11 Mr. Stephens will make a proposal to enumerate those Mode Select changes which cause UNIT ATTENTION for Sequential Devices. Carried over to working group meeting.
- 6.12 Mr. Loski will enumerate those actions which shall generate UNIT ATTENTION for Direct Access devices. Carried over.
- 6.13 Mr. Stai will propose a solution to the problem of status reporting during log commands. This will be dropped.
- 6.14 Msrs Burr and Lohmeyer will confer with Mr. Lamers re Editorship issues. This was done.
- 6.15 Mr. Burr will draft a strongly worded disclaimer for SCSI-2. This was done. It is on the cover of X3T9.2/86-109.
- 6.16 Mr. England will prepare a proposal for 16-bit SCSI for the Feb. Meeting. This is carried over. See also X3T9.2/86-121, which may make this unnecessary.
- 6.17 Mr. Burr will prepare a copyright notice for SCSI-2. This was done. It is on the cover of X3T9.2/86-109.
- 6.18 Mr. Burr will prepare a proposal on the conduct and ordering of meetings. This is dropped. Mr. Burr felt that the new chair should have a free hand to set new procedures.
- 6.19 Mr. Murphy will draft a statement on scanner goals. See 7.2.1.
- 6.20 Mr. Burr will prepare a proposed statement of SCSI-2 compatibility goals. Carried over.
- 6.21 Mr. Lamers will produce a proposal covering optical disk changers. Reassigned to Mr. Rudy.
- 6.22 Mr. Lamers will draft an implementors note on rounding. Carried over.

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7.1 SCSI Icon/Logo

Carried Over

7.2 Operating System Interface for SCSI.

Mr. Lehrbaum explained his desire to standardize on X3T9.2/86-56) MS/DOS interface for SCSI. He was informed that Carl Warren was organizing an IEEE standards effort for the MS/DOS BIOS. Mr. Lehrbaum accepted an action item to contact Mr. Warren, however Mr. Warren himself later arrived at the meeting. Mr. Burr then took an action item to provide Mr. Warren with a set of mail labels so the X3T9.2 membership could be informed of the PC BIOS organizational meeting on January 1986.

7.3 Extension of Address Space

Mr. Lehrbaum briefly described the SCSI Plus (TM Ampro Computers) proposal (X3T9.2/86-11). This would extend the SCSI address space to 64 devices. Further consideration was remanded to the working group.

7.4 Review of SCSI-2 Draft

Document X3T9.2/86-109, the first more or less complete draft of SCSI-2 was reviewed in some detail; although it was not possible to get through the entire document. Mr. Milligan made and Mr. Stai seconded the following motion:

"We accept X3T9.2/86-109 as a working document and request X3 to make this document available to the public through their document sales service."

X3T9.2/86-109 is not a finished document and contains a strongly worded disclaimer on the front cover which indicates this. Some members, particularly Mr. Floryonce, expressed doubts about the wisdom of making the document, which all agree has many imperfections and is incomplete, available outside the X3T9.2 membership. Mr. Burr took the position that, while he had previously refused to characterize any of the separate drafts as "The SCSI-2 draft," he could no longer do so unless X3T9.2 wished to reject the document, which certainly was not the case; all in all it is a pretty good first draft. Therefore, concluded Mr. Burr, it was necessary under the rules to provide it to those who request it. Since he had already received a number of inquiries about the document,

and expected for more requests now that it in fact existed, and since it is already about 340 pages and certain to grow, Mr. Burr felt that the real issue is how to make it available. Mr. Burr felt that neither he nor his successor would wish to bear the cost of providing copies gratis, hence the desire to request X3 to sell it.

The motion carried 25 yes, 1 no.

7.5 Compatibility Philosophy

Carried over.

7.6 Conduct of Meetings

Mr. Burr explained that, as a lame duck Chairman, he did not intend to attempt to generate new, more formal procedures; rather, he felt, his successor should have a free hand.

7.7 Field Pointer Bytes

Mr. Stai briefly described an alternative use of the Field Pointer Bytes in Request Sense. Referred to the W.G.

8. New Business

8.1 Bus Translators

There was a discussion of single ended to differential bus translators. A simple translator almost necessarily increases signal skew and adds delay. Therefore, the normal 25m differential bus length may not work when translators are used.

8.2 SCSI/IPI FIPS

Mr. Burr announced that the comment period on the SCSI & IPI Federal Information Processing Standards (FIPS) had closed. The comments were generally supportive of the proposed standards, however, the recommendation, favoring Current Mode over Voltage Mode for IPI, proved controversial. Mr. Burr stated that the IPI FIPS will be modified to change that recommendation to a warning that two incompatible electrical options are in common use.

Therefore, there was concern that a full 25m bus may or may not work properly if translators are used. This issue will be considered in the working meeting.

## Copyright

Mr. Burr wrote Virginia Morgan, publications director of ANSI (see X3T9.2/86-114) concerning copyright issues with circulating flexible disk copies of SCSI-2, which incorporates material from X3.131-1986. X3.131-1986 is covered by an ANSI copyright. The letter concludes, "Unless we hear otherwise from you, we intend to make copies of the SCSI-2 floppy disk files available to all members of X3T9.2 who wish them, to aid in the preparation of revisions those members may wish to submit."

While this clarifies the policy of X3T9.2 regarding availability of floppy disk drafts (at least pending receipt of any objection which ANSI may have) to committee members, it left others open, specifically:

- a) Who supplies the copies?
- b) Do members include observers?
- c) What about requests from outside the committee?

The Chairman, Mr. Burr, made the following policy decisions:

- a) The editor(s) will supply copies, upon request, because he (they) have the latest updates.
- b) Observers will be considered members for this purpose, since they frequently contribute to revisions.
- c) Disks will not be made available outside the committee, because it is not easy to reproduce floppy disks in large quantity; this would be an unfair burden on editors. Those outside the committee can get paper copies of documents from the Chairman.

In addition, there remains the issue of the rights of vendors to incorporate text from either X3.131-1986 or SCSI into product documentation. Msrs Robinson and Allan expressed the opinion that the ANSI copyright could only protect the style, format or layout of an ANSI standard, and not the text, because of the manner in which standards are

generated. None-the-less, nearly everyone would be more comfortable in using this text if a license were available from ANSI.

## 8.4 Asynchronous Event Notification

Mr. Boulay briefly described X3T9.2/86-115. It will be considered further at the working meeting.

## 8.5 Proposed Q1C 120 Density Code

Mr. Stai proposed that a density code be included for Q1C 120 (X3T9.2/86-117). There was no objection to adding a code for Q1C 120, however some fear was expressed that the adding of new codes for each new proposed format was an unbounded task. There seem to be an unending stream of proposed new tape media standards.

## 8.6 Identify Message

X3T9.2/86-118 proposes a minor clarification to the Identify message. It will be inserted in SCSI-2.

## 8.7 Floppy Disk Proposal for SCSI-2.

Mr. Johnson explained X3T9.2/86-119. He does not feel that current Mode Select parameters are adequate for floppy disks. This will be further considered at the Working Group.

## 8.8 Printer Proposal

Mr. Johnson explained X3T9.2/86-120 which points out that the Printer Command Set is at best superficial. Mr. Johnson will provide a more detailed proposal for the working group (that proposal is X3T9.2/86-126).

## 8.9 Trademarks

There was a discussion of registered trademarks which use the initials "SCSI." There is, for example, a Security Control Systems, Inc. which has registered SCSI as a Trademark in California, and has an application pending with the United States Patent and Trademark Office (X3T9.2/86-111). Although there was considerable discussion, no one knew what this might imply about using "SCSI" in manuals or advertisements to refer to the Small Computer System Interface. Mr. Semanak undertook to investigate the issue further.

9. Meeting Schedule

There will be a Working Group meeting on 7-9 Jan 1987 at the Irvine Hilton in Irvine, California (714-863-3111). The rooms are blocked under the name "Western Digital." The meeting will cover all subjects except optical disks and scanners. Mr. Lohmeyer will chair the meeting.

There will be an Optical Working Group meeting on 19-20 Jan 1987 in the Denver area. Mr. Boulay will make meeting arrangements and Mr. Lamers will chair the meeting.

The Scanner Working Group will meet in parallel with the T9.2 plenary on 16-17 February 1987 in Clearwater, Florida.

The next meeting of X3T9.2 will be on 16-17 February 1987 at the Adam's Mark Caribbean Gulf Hotel, 430 South Gulfview Blvd., Clearwater, Florida 33515, (800-237-5997 or 813-443-5714).

The following meeting of X3T9.2 will be 27-28 April 1987 at the Red Lion Inn-San Jose, 2050 Gateway Pl., San Jose, California 95110, (408-279-0600 or 800-547-8010 - please mention ANSI X3T9 when making reservations). The meeting schedule for 1987 will be:

Date

February 16-17	Clearwater, Florida
April 27-28	San Jose, California
June 22-23	Vancouver, British Columbia
August 17-18	Denver/Colorado Springs
October 12-16*	Adirondack Mountains, New York
December 7-8	San Diego, California

\*Note: This is a change!

Mr. England of AT&T will make the mailing for this meeting. The roster of future mailing volunteers is:

Name	Company	Date
Dan Moczarny	Mitsubishi Electronic America	Feb '87
Tony Lo	Quantum	Apr '87
Bill Spence	TI	June '87
Bob Snively	Adaptec	Aug '87
Dave McIntyre	HP	Oct '87
John Milledge	Apple	Dec '87
John Klonick/ Skip Jones	Maxtor	Feb '87
John Lohmeyer	NCR	Apr '88

10. Action Items

- 10.1 Mr. Loski will reword the hard reset default discussion.
- 10.2 Mr. McIntyre will revise the proposed SCSI logo.
- 10.3 Mr. Stephens will make a proposal to enumerate those Mode Select changes which cause UNIT ATTENTION for Sequential Devices.
- 10.4 Mr. Loski will make a proposal to enumerate those actions which cause UNIT ATTENTION for Direct Access Devices.
- 10.5 Mr. Burr will prepare a proposed statement of SCSI-2 compatibility goals.
- 10.6 Mr. Rudy will produce a proposal covering optical disk changers.
- 10.7 Mr. Lamers will draft an implementors note on rounding.
- 10.8 Mr. Semenak will investigate trademark issues (see 8.9 above).
- 10.9 Mr. Burr will explore, with ANSI and X3, incorporation of text from SCSI-2 drafts (available in flexible disk files) into product documentation.
- 10.10 Mr. Burr will discuss a vendor code registration authority for the Vendor Identification field of the INQUIRY command, with X3T9.
- 10.11 Mr. Burr will provide mail labels to Mssrs Spence and Warren.
- 10.12 Mr. Burr will discuss holding four rather than six plenaries a year at X3T9.
- 10.13 Mr. Burr will forward SCSI-2 draft to the X3 Secretariat with a request to make it available through the normal X3 document sales mechanism.
- 10.14 Mr. Johnson will produce a more detailed proposal on printers.

11. Adjournment

The meeting was adjourned late on the afternoon of 9 Dec.

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