Accredited Standards Committee
X3, Information Processing Systems

Doc. No.: X3T9.2/93-045 R0
Date: March 15, 1993
Project: 791-D
Ref. Doc.: X3T9.2/90-143
Reply to: S. Finch

To: Membership of X3T9.2

From: Stephen Finch, Editor ATA Extensions
                 I. Dal Allan Vice-Chair X3T9.2

Subject: Minutes of ATA, ATA Extensions and DADI Working Group Meeting
                 March 15, 1993 Working Group Meeting
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Agenda

1.   Opening Remarks
2.   Attendance and Membership
3.   Approval of Agenda
4.   AT Attachment Status
5.   ATA Extensions
5.1   Extensions Versus Enhancements or Both
5.2   Local Bus
5.3   Electrical Characteristics
5.4   Error Reporting
5.5   68 pin ATA proposal from SFF Liaisons
5.6   Format Track LBA
6.0   DADI Presentation
7.   Meeting Schedule
8.   Adjournment

Results of Meeting

1.   Opening Remarks

Dal Allan, the Chair, called the meeting to order at 1:05 p.m., Monday January 11, 1993. He thanked Skip Jones of Emulex Corp. for hosting the meeting.

As is customary, the people attending introduced themselves. A copy of the attendance list was circulated for attendance and corrections.

It was stated that the meeting had been authorized by X3T9.2 and would be conducted under the X3 rules. Ad hoc meetings take no final actions, but prepare recommendations for approval by the X3T9.2 task group. The voting rules for the meeting are those of the parent committee, X3T9.2. These rules are: one vote per company; and any participating company member may vote.

The minutes of this meeting will be posted to the SCSI BBS and the SCSI Reflector and will be included in the next committee mailing.

2.   Attendance and Membership

Attendance at working group meetings does not count toward minimum attendance requirements for X3T9.2 membership. Working group meetings are open to any person or company to attend and to express their opinion on the subjects being discussed.

The following people attended the meeting:

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        Name              S      Organization        Electronic Mail Address
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Mr. Denni Rash           O                          75450.3313@compuserve.com
Mr. Norm Harris          P Adaptec, Inc.            nharris@adaptec.com
Mr. John Geldman         A Cirrus Logic Inc.
Mr. Nicos Syrimis        A Cirrus Logic Inc.
Mr. Skip Jones           P Emulex Corp.             sk_jones@emulex.com
Mr. Phil Rafnel          O Emulex Corp.
Mr. Dan Pinvidic         O Emulex Corp.             d_pinvidic@emulex.com
Mr. I. Dal Allan         P ENDL                     2501752@mcimail.com
Mr. Denni Rash           T FileNet Corp.            75450.3313@compuserve.com
Mr. Jeffrey L.           P Hewlett Packard Co.      jlw@hpdmd48.boi.hp.com
Williams
Mr. Levi Lebo            O Hewlett Packard Co.
Mr. George Penokie       P IBM Corp.                gop@rchvmp3.vnet.ibm.com
Mr. Kevin R. Pokorney    O Intellistor, Inc.
Mr. Lawrence J. Lamers   P Maxtor Corp.             71540.2756@compuserve.com
Mr. Ron Roberts          A Maxtor Corp.             ron_roberts@maxtor.com
Mr. Thomas Newman        S Mission Peak Designs     71246.1573@compuserve.com
Mr. Joe Dambach          P Molex Inc.
Mr. Max Bassler          O Molex Inc.
Mr. Robbie Shergill      P National Semiconductor
Mr. John Lohmeyer        P NCR Corp.                john.lohmeyer@ftcollinsco
                                                    .ncr.com
Mr. Stephen F. Heil      P Panasonic Technologies,
                           Inc
Mr. James McGrath        P Quantum Corp.            75000.1241@compuserve.com
Mr. Gene Milligan        A Seagate Technology       Gene_Milligan@notes.seaga
                                                    te.com
Mr. Hale Landis          A Seagate Technology
Mr. Brian Schott         S Seagate Technology, Inc.
Mr. Stephen G. Finch     P Silicon Systems, Inc.    5723283@mcimail.com
Mr. Robert N. Snively    P Sun Microsystems, Inc.   Bob.Snively@eng.sun.com
Mr. Dave DeLauter        V SyQuest/Iota Memories
Mr. Tom Hanan            O Western Digital
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29 people present

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Status Key:  P   -  Principal
             A   -  Alternate
             O   -  Observer
             L   -  Liaison
             S,V -  Visitor
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3.   Approval of Agenda

The draft agenda was approved.

4.   ATA Revision 4.0

going in mailing.

5.   ATA Extensions

5.1   Extensions Versus Enhancements or Both

Larry Lamars, Maxtor Corp., brought up the question of whether the goal of ATA Extensions should be for the addition of commands and other small improvements, i.e., extensions to the AT Attachments document, or whether we should include additional features and functions. His concern being that there is a need for both types, but to hold up some of the extensions until all of the new features are defined and approved would be detrimental. He suggested that we have two projects: extensions and enhancements. The group discussed this concept and there was general agreement that there were these two needs, plus a possible need to "fix" problems found in the AT Attachment document. John Lohmeyer, NCR Corp., suggest that fixes to problems in the AT Attachment could be handled using already established procedures for publishing errata information, and that this aspect should not be a consideration. The wording of the ATA Extensions project proposal could be interpreted as either extensions or enhancements and proposal put forth so far fall into both categories. Steve Finch took an action to write up a new project proposal for ATA Enhancements to be presented at the April Plenary meeting.

5.2   Local Bus

Tom Hanan, Western Digital, provided a status update on the activity of the Small Form Factors industry group's, Local Bus working group. Tom stated that they attempting to develop a specification for ATA/Local Bus operation with enhanced ATA interface. Once the specification is completed, then it is expected that the Small Form Factor group would submit this document for consideration by X3T9.2 for incorporation into the ATA standards. The primary goal of the SFF Local Bus activities is to up the transfer rate of the ATA interface to 20 mbytes/second in a manner that can easily be adapted to various industry local bus implementations. They desire to have the specification complete in the June time frame.

The fact that these speed may require enhancements for signal quality, e.g., cable requirements, termination and improved driver and receiver specifications. enhancements.

5.3   Electrical Characteristics

Steve Finch, Silicon Systems, Inc., presented a proposal to include signal level specification for ATA Extensions. His comment was that the current AT Attachment document does not contain any statement on what constituted what high level and low level signals. The only statement in the document stated that the signals were TTL signals. The proposal contained changes that would specify the VOH, VOL signal levels for 5 volt and 3.3 volt operation. In addition, the proposal included moving the location of some of the interface specifications into more appropriate paragraphs in the document for clarity. Steve stated that these changes were for clarity only and that no technical information was deleted nor their values changed. There appeared to be general acceptance of the proposal, until John Geldman, Cirrus Logic,, Inc., suggested that the 3.3 volt levels might better be specified as a percentage or fraction of applied Vcc. There was discussion of these idea, but the implications were not clear when mixed voltage systems, or systems with separated voltage sources were considered. John agreed to present his ideas at a future meeting.

5.4   Error Reporting

Tom Hanan, Western Digital, expressed the need for additional status information that would allow the drive to notify the host of certain errors, such as buffer errors. On current Read commands, the host does not read the status after the last transfer, so the drive may not be able to notify the host of such errors. For compatibility reasons, maybe new commands may be required to implement features that could solve these problems. No specific recommendation was made at this time.

John Geldman, brought up the fact that it might be desirable to append an LRC, CRC or ECC on transfers between the host and drive to improve data reliability. Another suggestion was to add parity to the data interface. It was pointed out that LRC/CRC/ECC would protect data, but not the command or sector addressing. Parity could cover both data, commands, and parameters.

5.5   68 pin ATA proposal from SFF Liaisons

The group discussed the activity within SFF on a 68 pin ATA interface. This SFF specification has not been presented to X3T9.2 yet, but is expected soon. It is intended to allow drives to be compatible with both the ATA interface and the PCMCIA/ATA specifications, and allow the device to detect which environment it is residing and adapt accordingly. This activity was reviewed for general interest.

5.6   Format Track LBA

A proposal for Format Track LBA was received from LeRoy Leach, Maxtor Corp. This document (X3T9.2-185R1) was not discussed at the meeting.

6.0   DADI Presentation

Ron Roberts, Maxtor Corp., presented additional information on his views of a new peripheral interface. He believes his proposal could be the basis for activity on the DADI project. His presentation material will be in a future mailing, X3T9.2-044R0. Several questions were asked, but the lack of details seemed to prevent general understanding of the material presented. Someone suggested that Ron bring forward a detailed proposal that described the interface in more detail, possibly a document to serve as a starting point.

7.   Meeting Schedule

The next meeting of the ATA Working Group is planned for May 17, 1993 from 2:00 p.m. to 8:00 p.m. at the High Mesa Inn, Santa Fe, New Mexico.

8.   Adjournment

The meeting was adjourned at 3:36 p.m. on Monday January 11, 1993.