Accredited Standards Committee
X3, Information Processing Systems

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Project: 791-D
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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 January 11, 1993 Working Group Meeting

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Agenda

1. Opening Remarks
2. Attendance and Membership
3. Approval of Agenda
4. ATA Revision 3.3
5. ATA Extensions
5.1 Local Bus
5.2 Other Areas of Consideration
6. DADI
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 Jim Smith of Tandem 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:

Name	Status	Organization	Phone Number EMAIL Address
Mr. Norm Harris	P	Adaptec, Inc.	(408) 945-8600 x2230 nharris@adaptec.com
Mr. Thomas Newman	A	Adaptec, Inc.	(408) 945-8600 71246.1573@compuserve.com
Mr. Bob Gannon	O	C&M Corp.	(203) 774-4812
Mr. Joe Chen	P	Cirrus Logic Inc.	(510) 226-2101
Mr. John Geldman	A	Cirrus Logic Inc.	(510) 226-2368
Mr. Bernie Russick	O	Conner Peripherals	(303) 651-2881
Mr. Steve Todd	O	Data General Corp.	steve@genesis24.webo.dg.com
Mr. Edward A. Gardner	A	Digital Equipment Corp.	(719) 548-2247
Mr. Matt Giovanetti	V	Digital Equipment Corp.	
Mr. Richard Whalen	V	Digital Equipment Corp.	whalen@starch.enet.dec.com
Mr. Dale Robertson	V	Digital Equipment Corp.	
Mr. Skip Jones	P	Emulex Corp.	(714) 668-5058
Mr. I. Dal Allan	P	ENDL	(408) 867-6630
Mr. Jeffrey L.Williams	P	Hewlett Packard Co.	(208) 323-5030 jlw@hplnd48.boi.hp.com
Mr. Levi Lebo	O	Hewlett Packard Co.	(208) 323-4652
Mr. George Penokie	P	IBM Corp.	(507) 253-5208
Mr. Kevin R. Pokorney	O	Intellistor, Inc.	(303) 682-6649
Mr. Ron Roberts	A	Maxtor Corp.	(408) 432-3875 ron_roberts@maxtor.com
Mr. Reginald J. Murray	S	Ministor Peripherals Corp.	
Mr. Robbie Shergill	P	National Semiconductor	(408) 721-7959
Mr. John Lohmeyer	P	NCR Corp.	(719) 596-5795 x362 john.lohmeyer@ftcollinsco.ncr.com
Mr. Dennis P. Trupski	O	Olivetti	(408) 366-3254
Mr. Hale Landis	A	Seagate Technology	(408) 439-2443
Mr. Gene Milligan	A	Seagate Technology	(405) 324-3070
Mr. Stephen G. Finch	P	Silicon Systems, Inc.	(714) 573-6808 5723283@mcimail.com
Mr. Ricardo Dominguez	P	Texas Instruments	(512) 250-6204 dominguez@dsg.ti.com
Mr. Dean Wallace	O	Texas Instruments	(214) 997-5973
Mr. Tom Hanan	O	Western Digital	(714) 932-7472

28 People Present

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

3. Approval of Agenda

The draft agenda was approved.

4. ATA Revision 3.3

Dal Allan updated the group on the status of document X3.221, the ATA (AT Attachment) document. The document has been updated to revision 3.3. The document was further updated by the X3T9.2 editor which resulted is a nicely formatted document at revision 3.3A. Revision 3.3A is in the mailing that just went out. In addition, a letter ballet for approval of this document has also been sent out. Revision 3.3 is available on the SCSI BBS. Note that the only difference between revision 3.3 and 3.3A is "style", there are no technical differences.

5. ATA Extensions

With the forwarding of the ATA document, work can now begin in earnest on the ATA Extensions project. Steve Finch of Silicon Systems, Inc. volunteered to be the editor of ATA Extensions. He can be reach at: (714) 573-6808 (voice); (714) 573-6914 (fax); 5723283@mcimail.com (EMAIL); or Silicon Systems, 14351 Myford Rd., Tustin, CA 92680-7022 (US mail).

The ATA Extensions will be based on revision 3.3 of the ATA document. The new ATA Extensions document will be document X3T9.2/93-009 and will start at revision 1.0. This document will be updated as necessary to reflect the activities of the ATA Extensions project. The first version will be published only after some changes are made. The editor asked that we only address issues for which a written proposal exists. This gives us a starting point for discussions and facilitates communications and discussions.

5.1 Local Bus

Jim McGrath of Quantum presented a need for placing disk drives on internal busses of computers. He described what the publishing media have dubbed "local bus" connections. VL-bus and PCI were mentioned as two examples of local busses. Jim proposed that ATA Extensions address the need for attachment of disk drives to this type of bus by including in the ATA Extensions project interface specifications which allow directly connecting of ATA type disk drives to such a "local bus". He highlighted areas that need to be addressed when adding such capabilities to ATA Extensions (93-007). Jim also provided another industry paper addressing basic speed improvements in ATA as reference material (93-008).

Discussion of these ideas provided the following comments: the key is BIOS compatibility and, therefore, this belongs in ATA Extensions; we could end up supporting five different local busses; goal should be improved speed without excess cost (e.g., EISA had the speed but cost too much).

A suggestion was made that what was needed was a transfer cycle time of 120 nanoseconds per sixteen bit transfer. In addition, the goal might be to provide a generic interface which could easily be adapted to individual local busses. The interface should not change the transfers, but speed them up.

Basically: we want to add a mode for faster transfers, without changes to the signally protocol. The next question was how to address this idea in ATA Extensions? There is a need to address this now as some companies are starting to implement "local bus" disk drives.

There are two areas that need to be addressed: hardware timing and software protocol.

Jim McGrath volunteered to provide a proposal on the software changed needed to implement a faster mode of transfers. This document will provide a starting point for discussions on the software issues.

Tom Hanan offered to host a Special Subject Working Group (SSWG) to address the hardware timing issues. The SSWG is being scheduled for Thursday, January 28, 1993 at Western Digital in Irvine, CA. Tom will send a meeting notice out on the SCSI Reflector in time to meet the two weeks meeting notice requirements.

5.2 Areas of Consideration

Next the Working Group addressed the issue of what might be included in the ATA Extensions project.

Steve Finch present a list of subjects which were previously submitted and were deferred from ATA to ATA Extensions:

68 Pin definition from the Small Form Factor industry group
Download of Micro code for ATA (X3T9.2/92-168)
Enhanced Power Mode Features (X3T9.2/92-132)
Lock and Unlock command

These areas shall be considered for ATA Extensions. The document that Jim McGrath will provide on local bus software will be included in the list, as will any output of the SSWG addressing related hardware issues. The floor was opened for solicitation of addition areas that should be considered.

Tom Hanan stated that the Lock and Unlock issue also requires some changes to the Identify Drive command. Tom stated he would combine the changes to the Identify Drive Command and the Lock and Unlock Commands and submit a new proposal.

Steve Finch would like to see a definition of Voh/Vol (voltage output high/low) and Vih/Vil (voltage input high/low) be added to the ATA standard. He stated he would write a proposal to that effect.

Tom Hanan suggested an Enhanced PIO transfer mode which allowed high speed PIO transfers without the use of IOCHRDY. He stated that if a data underrun or overrun were to occur during such operations, that an unique error status allow appropriate error recovery to be performed. He said he would write up a proposal and submit it for consideration.

The was a desire to obsolete some of the current ATA commands. Hale Landis of Seagate Technology stated he would submit a recommendation at a future time.

6. DADI

Ron Roberts of Maxtor addressed the need for a new disk interface. Ron made a formal presentation and the overheads he presented are contained in document X3T9.2/93-010. Ron noted that the number of disk interfaces is increasing at an alarming rate and this needs to be addressed. He suggested that a new mid-level interface be defined and that DADI might be the appropriate place to do this standardization. This mid-level interface could be adapted to existing and future interface standards (higher-level interfaces), but need not change for each higher-level interface. In addition, this mid-level interface could be made available to the user of disk drives, thus the desire for a standard. Ron stated that he will make a full proposal at a future meeting.

7. Meeting Schedule

The next meeting of the ATA Working Group is planned for March 15, 1993 from 2:00 p.m. to 8:00 p.m. at the Hyatt Newporter, in Newport Beach, CA.

8. Adjournment

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