Accredited Standards Committee*
X3, Information Processing Systems

To: **Membership of X3T10**

From: **Lamers/Milligan**

Subject:**Minutes of X3T10 ATA Working Group - May 10-11, 1995**

Agenda

1.   Opening Remarks

Gene Milligan convened the meeting at 1:00 p.m. He thanked Charles Brill of AMP for hosting the meeting. He also requested that Larry Lamers take the minutes and thanked him for accepting the request.

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 X3T10 and would be conducted under the X3 rules. Ad hoc meetings take no final actions, but prepare recommendations for approval by the X3T10 technical committee. The voting rules for the meeting are those of the parent committee, X3T10. For the ad hoc, other than straw votes, the voting rules are: one vote per participating company.

The minutes of this meeting will be posted to the X3T10 BBS and the ATA Reflector and will be included in the next X3T10 committee mailing.

Gene announced that the ATAPI project had been approved as project 1120D.

2.   Attendance and Membership, Introductions

Attendance at working group meetings does not count toward minimum attendance requirements for X3T10 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	Company	Telephone	Email
Mr. Lawrence J. Lamers	Adaptec, Inc.	(408) 957-7817	ljlamers@aol.com
Mr. Ron Apt	Advanced Micro Devices		
Mr. Charles Brill	AMP, Inc		
Mr. Ron Roberts	Apple Computer	(916) 677-5714	rkroberts@aol.com
Mr. Gerry Johnsen	Ciprico		
Mr. Joe Chen	Cirrus Logic Inc.	510-226-2101	chen@cirrus.com
Mr. Edward Haske	CMD Technology		
Mr. David Evans	Compaq	713-374-0618	devans@bangate.compaq.com
Mr. Charles Monia	Digital Equipment Corp.		
Mr. I. Dal Allan	ENDL	(408) 867-6630	2501752@mcimail.com
Mr. Kevin Calvert	Future Domain Corp.	(714) 253-0522	kevinc@fdc.mhs.compuserve.com
Mr. Pat Edsall	Hewlett Packard Co.		
Mr. J. R. Sims	Hewlett Packard Co.	(303) 635-6774	robsims@depeche.lvld.hp.com
Ms. Nancy Cheng	Hitachi Micro Systems, Inc.		
Mr. Dan Colegrove	IBM Corp.	(507) 286-5558	colegrove@vnet.ibm.com
Mr. Duncan Penman	IIX Consulting	(408) 730-2565	penman@netcom.com
Mr. Mark Shipman	Intel Corp.	503-696-2318	mark_shipman@ccm2.hf.intel.com
Mr. Dean Wallace	Linfinity Micro		
Mr. LeRoy Leach	Maxtor Corp.	(303) 678-2828	leroy_leach@maxtor.com
Mr. Pete McLean	Maxtor Corp.	(303) 678-2149	pete_mclean@maxtor.com
Mr. Kirit Patel	Oak Technology, Inc.		
Mr. Stephen F. Heil	Panasonic Technologies, Inc	(609) 987-3948	sfh@research.panasonic.com
Mr. Bill McFerrin	Philips KMG	719-593-4564	bill_mc@lms.com
Mr. Curtis E. Stevens	Phoenix Technologies	(714) 440-8330	curtis_stevens@bannet.ptltd.com
Mr. James McGrath	Quantum Corp.	(408) 894-4504	jmcgrath@qntm.com
Mr. Gene Milligan	Seagate Technology	(405) 324-3070	gene_milligan@notes.seagate.com
Mr. Ron Werbow	Seagate Technology	(805) 582-3815	ron_werbow@notes.seagate.com
Mr. Stephen G. Finch	Silicon Systems, Inc.	(714) 573-6808	5723283@mcimail.com
Mr. Akram Atallah	SyQuest Technology, Inc.		
Mr. Yas Hashimoto	Toshiba America Info. Sys.	(408) 451-6960	
Mr. Devon Worrell	Western Digital Corp.	(714) 932-7042	worrell@dt.wdc.com
Mr. Tom Hanan	Western Digital Corp.	(714) 932-7472	hanan_t@a1.wdc.com

3.   Document Distribution

X3T10/95-154r1 ATA Version Information Proposal
X3T10/95-194r1 Command Overlap and Queuing Proposal
X3T10/95-205r0 ATAPI and ATA Differences
X3T10/95-216r0 SFF Status
X3T10.1/2008 rev 1 ATA-3 working draft

4.   Approval of Agenda

There was considerable debate regarding items carried on the agenda and the venue in which the work should be done. The agenda was approved as amended.

5.   Review of Action Items

7)   Jeff Rabbe to check to see if Intel will release for open control the definitions presently published in SFF 8038 by 2/15/95. Carried over. Mark Shipman of Intel agreed to check on the status of this item within Intel.

8)   Devin Worrell to add appropriate specificity to the interaction of command overlap and power modes by 2/15/95. Completed.

9)   Devin Worrell to adjust the overlap and queuing proposal according to the results of the 1/26/95 meeting and in particular to recast it in specification format suitable for detailed technical review and, if accepted, to have portions or the entire proposal integrated into the ATA Working Draft 2/15/95. Completed.

16)   Tom Hanan to provide the maxpower specification developed internally for 1.8-inch power management. Carried over.

17)   Gene Milligan to request input from SI group on set multiple usage. Completed.

18)   Pete McLean to prepare revision 1 of ATA-3. Completed.

19)   Tom Hanan to prepare revision 0 of ATAPI (X3T10/1120). In process and carried over.

6. ATAPI

6.1. ATAPI Status in SFF [Allan]

See X3T10/95-216.

6.2. ATAPI Project 1120

6.2.1. ATAPI Status [Hanan]

The document is being converted to Word. This will be completed by June 21, 1995.

Devon Worrell stated that the sections of SFF-8020 that are being incorporated into the ATAPI working draft have only had editorial changes.

Steve Finch moved and Tom Hanan seconded that the ATAPI working draft be based on revision 2.4 of SFF-8020 to incorporate the editorial changes from version 2.2 to 2.4. The motion carries 17:1.

Tom reported that questions have arisen within his circle regarding how ATAPI will be worked on. Tom asked if separate additional meetings could be scheduled. He reported that some SFF members voiced a complaint regarding the convenience of the meeting locations.

Steve Finch moved and Curtis Stevens seconded that the working group recommend the ATA-3 and ATAPI projects be combined into a single document and the revised project proposal be subject to a letter ballot at X3T10. The motion carried 11:5 after the following motion failed.

Dal Allan moved and Larry Lamers seconded that the Finch motion be amended to a combined follow-on project be instituted. The motion to amend failed 4:7.

Larry Lamers moved and Steve Finch seconded that a new technical committee be requested to address projects in the ATA marketplace. The motion carried 9:4.

6.3. ATAPI Release Service []

No activity.

6.4. ATAPI and ATA differences []

Pete McLean reviewed the differences he and Tom Hanan had identified. He emphasized that this was not a problem list but a difference list. See 95-205 for details on the differences.

Steve Finch moved and Curtis Stevens seconded that the technical editor of ATAPI be instructed to extract and forward to the technical editor of ATA-3 those clauses related to signals, registers, reset responses, ATA level commands and protocols and that the editors determine the best method to combine this information into the ATA-3 document. The motion carried 8:3.

7. ATA-3 Project 2008

7.1. Informational Exception Condition Reporting [Colegrove]

Dan Colegrove withdrew his proposal in favor of SFF-8035i. Jim McGrath introduced SFF 8035i which is being submitted to SFF as an information document. At the moment the content of SFF 8035i has not been proposed by anyone for the ATA standard. See 10.3.

7.2.   SFF Version Indication [Milligan]

Gene Milligan presented the latest revision of the version indication proposal. As requested by the Longmont Ad Hoc the minor version is now back in.

Pete McLean moved and Tom Hanan seconded that 95-154r1 be accepted for incorporation into ATA-3. The motion carried 14:0.

7.3.   Working Draft Status [McLean]

Pete McLean reviewed the document status.
Larry Lamers moved and Pete McLean seconded that ATA-3 revision 1 be recommended for acceptance as the current working draft and that a version number be assigned. The motion carried 11:1.

7.4.   ATA Project Schedule []

Depending upon the outcome of the recommendation to combine ATA and ATAPI into a single document, the project is still on schedule for the next publication. Curtis Stevens stated that, since ATA-3 is not delivering all its promised items, the schedule should not be adhered to. Furthermore, command overlap and command queuing, are significant and should be in any further ATA documents.

8.   Pending Proposals

8.1.   Strong Command Overlap and Command Queuing [McLean]

Pete McLean reviewed his proposal (95-194r1) for command overlap and queuing.

Several Items were identified for follow up:
1)   CS setup by the host;
2)   make interrupt signal shared and define new register to report who has the INRQ asserted;
3)   give PCI host adapter mode for host interlock;
4)   justify need for using semaphores for interlock;
5)   provide timing diagrams for INTRQ, DMARQ, DMACK, host semaphore, etc.
6)   consult with Phoenix and Intel to uncover other issues.

Accepting that the hardware will have to change - the goal is to minimize the cost.

8 in favor of a May study group
17 in favor of a June study group

8.2.   GT 16.6 MB [Chen]

No business to discuss at this meeting.

8.3.   28 bits [Stevens]

This proposal has been included in the latest ATA draft and need not be a separate agenda item in the future.

8.4.   Drive Detection []

This item has been addressed by agreeing to add a 10K ohm pull down resistor in the host on DB7. However the agreement is not yet in the ATA draft.

9.   Old Business

9.1.   Multiple Connector ATA Implementations [McGrath]

This was issued as SFF- 8034i document.

9.2.   EDDS revision status [Stevens]

This document has been released by Phoenix and is available on the ftp site. Version 1.1 is the current release.

10.   New Business

10.1.   Boot Engineering Extension Record

This activity is occurring in the System Issues study group. It affects how the drives are presented to the system, and how the boot records are managed. The int 13 extensions are incorporated.

10.2.   Input from System Issues study group on SET MULTIPLE usage

SI did not have anything to add to the prior discussion on this item.

10.3.   Self-monitoring, Analysis and Reporting Technology

Jim McGrath stated that SFF-8035i is in the public domain and is being distributed for industry awareness. Dal stated that SFF-8035 is an information bulletin.

10.4.   Project Proposal for ATA+PI

Curtis Stevens moved and Tom Hanan seconded that 95-219r0 be recommended for consideration as a new project by X3T10. The motion passed unanimously

11.   Call for Patents

Gene Milligan requested that anyone aware of any patents required for the proposals be disclosed early in accordance with the ANSI patent policy.

The following is a reminder from prior minutes: "The Secure Mode proposal involves patents pointed out by Pete McLean and he stated that a letter has been submitted by Maxtor. He also mentioned an IBM patent and Dan Colegrove noted that document 94-125 contains the letter regarding the ANSI patent policy."

12.   Action Items

20)   Gene Milligan to request a technical committee be formed for ATA projects.
21)   Pete to generate rev 2 of ATA-3
22)   Tom Hanan to generate rev 0 of ATAPI
23)   Duncan Penman to discuss system issues with the Systems Issues study group.

13.   Meeting Schedule

Chairman's note: A Command Overlap ad hoc was added for June 2, 1995 at Phoenix in Irvine, CA hosted by Phoenix subsequent to this meeting.
June 21-22, 1995 at the Crown Sterling Suites in Milpitas, CA hosted by Quantum.
July 18-20, 1995 at the Crown Sterling Suites in Milpitas, CA hosted by Quantum.
August 23-25, 1995 at the Crown Sterling Suites in Milpitas, CA hosted by Quantum.
September 20-22, 1995 at the Crown Sterling Suites in Milpitas, CA hosted by Quantum.
October 18-20, 1995 at the TBD in Irvine, CA hosted by Phoenix Technologies.
November 29-December 1, 1995 - at the TBD in Irvine, CA hosted by Western Digital.

14.   Adjournment

The meeting adjourned at 12:00 p.m. on May 11, 1995.