

Accredited Standards Committee*
X3, Information Technology

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Project:
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Reply to: Gene Milligan

To: Membership of X3T13
From: Lawrence J. Lamers, Secretary X3T13
Gene Milligan, Chair X3T13
Subject: Minutes of X3T13 Working Group
January 22-24, 1997 : San Jose, CA

Agenda

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*Operating under the procedures of The American National Standards Institute.
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- 11. Open Issues List Summary
- 12. Review of New Action Items
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Results of Meeting

1. Opening Remarks

Gene Milligan called the meeting to order at 9:00 a.m., Wednesday January 22, 1997. He thanked Marc Noblitt of Seagate. 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 X3T13 and would be conducted under the X3 rules. Ad hoc meetings take no final actions, but prepare recommendations for approval by the X3 Technical committee. The voting rules for the meeting are those of the parent committee, X3T13. For the ad hoc, other than straw votes, the voting rules are: one vote per participating company

Standing note: Gene Milligan informed the attendees that, as Chair of X3T13, he preferred to be a "Non-voting Chair" with another Seagate employee Marc Noblitt functioning as the voting member. He indicated the motivation was to facilitate an attempt to Chair the meetings without bias to a specific faction's position. However, even in this mode he would reserve the right to cast a vote in the event there were no Seagate representatives present.

The minutes of this meeting will be posted to the X3T13 and the ATA Reflector and will be included in the next X3T13 committee mailing.

2. Approval of Agenda

The electronically distributed agenda was used as a basis for the meeting with adjustments as reflected in these minutes.

3. Attendance

Attendance at working group meetings does not count toward minimum attendance requirements for X3T13 membership. Working group meetings are open to any person or company to attend and to express their opinion on the subjects being discussed. Attendees:

Richard	Kalish	Adaptec, Inc.	P
Lawrence	Lamers	Adaptec, Inc.	A1
Ron	Roberts	Apple Computer	A
Bob	Brinckman	Circuit Assembly Corp.	O
Ian	Morrell	Circuit Assembly Corp.	O
Ben	Chang	Cirrus Logic Inc.	P
Hale	Landis	Consultant	P
Paul	Raikunen	Digital	P
Tony	Goodfellow	GSI	P
J. R.	Sims	Hewlett Packard Co.	P
Dan	Colegrove	IBM Corp.	P

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Pat	La Varre	Iomega	A
Ron	Stephens	Iomega Corp.	P
Pete	McLean	Maxtor Corp.	P
Gregg	Goldman	Meltzer & Lippe	G
Darrin	Bulik	Micro House Int.	P
Christopher	Mayne	O.R. Technology	A
Mike	Christensen	Phoenix Technologies	A
Greg	Elkins	QLogic Corp.	P
Mark	Evans	Quantum Corp.	P
Kenichi	Kojima	Sanyo Electric Co. Ltd.	P
Yasuyuki	Suemori	Sanyo Co., Ltd.	A
Gene	Milligan	Seagate Technology	P
Marc	Noblitt	Seagate Technology	A
Bill	Gintz	Self	G
Yogi	Schaffner	Silicon Systems, Inc.	P
Jeff	Cousins	SyQuest Technology	G
Alan	Longo	SyQuest Technology Corp	P
David	Evans	Symbios Logic	A
Tom	Hanan	Western Digital Corp.	P
Jonathan	Hanmann	Western Digital Corp.	G

4. Document Distribution

The following documents were distributed:

- X3T13 Document Register
- X3T13/1153D Rev 8 ATA/ATAPI-4 [McLean]
- D96153R3 Ultra DMA Proposal for new protocol in ATA/ATAPI-4 [Evans]
- D97102r0 Proposal for Modification of Register Access Restrictions [Schaffner]
- D97105r0 Project Proposal for Tailgate [McLean]
- D97106r0 Proposal for describing orphan sectors [McLean]
- D97107r0 Tailgate Proposal

5. Review of Old Action Items

- 65) Tom Hanan to put a list of ATAPI issues together for Ultra DMA/33. Completed.
- 66) Devon Worrell to provide list of items in word 82 and 85 not applicable to ATAPI. Carry over.
- 67) Devon to bring in MSN 1.03 to next meeting. Complete
- 68) Devon to document the proper behavior of ATAPI soft reset. Carry over.
- 69) Gene Milligan to write letter to Oak regarding patents. Completed.

6. ATA/ATAPI-4 - Project 1153D

6.1 Review of working draft

Pete McLean conducted a page by page review of the working draft through a substantial portion of the commands section.

It was agreed to add to 5.7.2 - Execution of CHECK POWER MODE does not change the state nor reset the standby timer.

It was agreed that D97106r0 - Orphan sector handling as revised in rev 1 will be incorporated.

The group reviewed Yogi Schaffner's D97102r0 Proposal for Modification of Register Access Restrictions and agreed on resultant changes to the project draft.

It was agreed that DEVICE RESET is mandatory for packet devices and ATA devices that implement overlap & queuing while being prohibited for ATA devices that do not implement overlap & queuing.

Today's hardware lock out of the command register when BSY is set prevents implementing of DEVICE RESET.

How to handle error recovery on FLUSH CACHE. The behavior today is not specified; if an unrecoverable write error occurs does the operation continue or terminate? If it continues and another unrecoverable write error occurs which error is reported? It was agreed to recommend that devices stop on the first unrecoverable write error and remove the failed block from the cache. The host should then issue FLUSH CACHE commands until one completes successfully.

Removable - It was noted that manufacturers are not adhering to the removable media device requirements set forth in Revision 8.

Pete McLean moved and Ron Stevens seconded a motion to remove clause 5.8 and related commands of the removable media feature set. The motion carried 9:2.

Removable media device companies (e.g. SyQuest and Iomega) need to develop a proposal for non-packet devices to include in ATA/ATAPI-4 as a replacement for the definitions that are being removed.. Packet device behavior has several definitions in various documents.

7. Enhanced BIOS Disk Drive Technical Report - Project 1226DT

Curtis Stevens was not able to attend. Consequently the topic was deferred to the February meeting.

8. Old Business

8.1 Items from the Open Issues List [] ()

8.1.1 Access Restrictions in Functional Descriptions of Registers [Schaffner]

Dealt with during the working draft review.

8.1.2 Enhanced FDPT signature of A0h

Curtis Stevens was not able to attend. Consequently the topic was deferred to the February meeting.

8.1.3 Driver types and required pull-ups for Ultra DMA

No one had any specific proposals or action items for this item. The Chair will drop this item from the agenda.

8.1.4 Minimum cleared time for SRST

Agreed to put in a 5 microsecond clear time.

8.2 Security Erase [Colegrove] (D96156r1)

Dan Colegrove reported that he had been able to reach Prof. Schultz, who had requested this function and now had a revised proposal that met their needs. The group agreed to add two words (89 & 90) to indicate the expected time for the operation to complete. Dan will have a revision 2 reflecting the agreed to changes at the next meeting.

Tom Hanan moved and Dan Colegrove seconded that D96156r2 be recommended for incorporation in ATA/ATAPI-4. The motion carried 12:1. Pete McLean stated that he does not believe the government has solidified their requirements and therefore does not believe the proposal is ready.

The Chair noted that SFF 8020i does not seem to be in congruence with the ATA-3 Identify word alignment. Tom Hanan to check all identify words for SFF specifications.

8.3 Proposal for Ultra DMA [Evans] (D96153r3)

Mark Evans reviewed the latest revision, notably clause 5 has been reworked to eliminate redundancy with ATA/ATAPI-4. The group agreed to a few additional editorial changes. Pete McLean moved and Tom Hanan seconded that D96153r4 be recommended for incorporation into ATA/ATAPI-4. The motion carried 14:0.

8.4 Read/Set Maximum Address [Landis] ()

Tom Hanan moved and Dan Colegrove seconded the D97106r0 Proposal for describing orphan sectors [McLean] be recommended for incorporation in ATA/ATAPI-4. The motion carried 14:0.

8.5 Definition of ATAPI protocol for device one only [] (8.8.1.1)

Due to the uncompleted action item, this item had to be deferred until the February meeting.

8.6 Support for Removable Media [] ()

8.6.1 MSN 1.03 Commands [Stephens] ()

Ron Stephens is still working on this proposal with other interested removable media device companies.

8.7 LUNS [Worrell] ()

Due to the uncompleted action item, this item had to be deferred until the February meeting.

8.8 Overlap/Queueing [] ()

The proposal has been included in ATA/ATAPI-4. This item will be dropped as a separate item in the next agenda.

8.9 Word 73 [McLean/Worrell] ()

The conflict was resolved in the draft. But see action items 73 and 74.

9. New Business

9.1 Tailgate [McLean] (D97105r0)

Tailgate is a bridge controller with a 1394 physical SBP-2 transport on one side and ATA/ATAPI-4 on the other side. Compaq, Seagate, WD, Quantum, Symbios, and SSI were reported to be the core developers. Jonathan L. Hanmann is editing the technical document (see D97107r0 rev E). Document D97105r0 contains a proposal for the Tailgate project within X3T13.

Tom Hanan moved and Pete McLean seconded that D97105r0 be recommended as a project proposal for Tailgate. The motion carried 9:0:6.

10. Call for Patents

This is a regular agenda item to identify any potential patent issues related to complying with standards and draft standards within the scope of X3T13.

A document is available from ANSI, "Procedures for the Development and Coordination of American National Standards", at no charge. Annex I contains the ANSI patent policy.

The Chair requested that any participant aware of patents or patent disclosures that may be required to comply with any publications resulting from X3T13 projects provide an early disclosure of such patent and offer to license such patents under reasonable and non-discriminatory terms in accordance with the ANSI Patent Policy.

10.1 European Patent Application Number 95201658.2

The chair noted that he had received the telephone number of the legal consul representing Oak and would attempt to contact her. (Chair's note: The contact has been completed and relevant material supplied to Oak.)

11. Open Issues List Summary

No items were added to the list at this meeting and the only carryover item is:

- 1) Enhanced FDPT signature of A0h.

12. Review of New Action Items

- 70) Tom Hanan to generate a proposed replacement for sub-clause 5.3 of ATA/ATAPI-4.
- 71) Dan Colegrove to revise Fig 5 & 6 into a single flow chart.
- 72) Tom Hanan to define the effects of all possible values in byte count low and byte count high.
- 73) Tom Hanan to check all identify words in the SFF specifications relative to ATA/ATAPI-4.
- 74) Tom Hanan to check on major version and minor version in ATAPI as it is not compliant with ATA-3.
- 75) Pete McLean to rewrite the BSY bit wording in 6.2.13.

13. Meeting Schedule

The next plenary meeting of X3T13 will be April 25, 1997 at the Western Digital facility, in Irvine, CA hosted by Western Digital.

A X3T13 Tailgate ad hoc meeting (authorized subsequently by the plenary) will be held in conjunction with an X3T10 SBP-2 ad hoc February 12-13 in Redmond, WA hosted by Microsoft.

The next all topic working group meeting will be February 18-21, 1997 at the Marriott Hotel, in Fort Collins, CO hosted by Symbios Logic, Inc.

The subsequent working meeting will be March 18-21, 1997 at the Seagate facility hosted by Seagate.

The long term meeting schedule is:

Date	Location	Host	Contact
February 18-21, 1997	Boulder, CO	Symbios Logic	Mike Winchell
March 18-21, 1997	San Jose, CA	Seagate	Marc Noblitt
April 23-25, 1997 *	Irvine, CA	Western Digital	Tom Hanan
May 21-23, 1997	Boulder, CO	Seagate	Marc Noblitt
June 18-20, 1997	Irvine, CA	Western Digital	Tom Hanan
July 23-25, 1997 *	San Jose, CA	Seagate	Marc Noblitt
August 20-22, 1997	Longmont, CO	SSI/TI	Yogi Schaffner
September 24-26, 1997	Irvine, CA	Phoenix Technologies	Curtis Stevens
October 22-24, 1997*	TBD, HI	Quantum	Mark Evans
December 3-5, 1997**	Irvine, CA	Western Digital	Tom Hanan
January 21-23, 1998*	San Jose, CA	Seagate	Marc Noblitt
February 18-20, 1998		Symbios (?)	
March 25-27, 1998		Maxtor (?)	

* Plenary ** Please note this is a change authorized by the plenary to due a change by X3T11

14. Adjournment

The meeting was adjourned upon completion of all the agenda items.