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Reply to: Lawrence J. Lamers

To: Membership of X3T13
From: Lawrence J. Lamers, Secretary X3T13
Gene Milligan, Chair X3T13 (acting)
Subject: Minutes of X3T13 Working Group
February 21-22, 1996 : Milpitas, CA

Agenda

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 - 11.10 READ DEFECTS [Totani] (D96116r0)
 - 11.11 Shared IRQs [Stevens] ()
12. New Business

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- 12.1 Vendor Specific & Optional Command Zero Budgeting [Evans]
- 12.2 Microsoft Power Management Architecture
- 12.3 MSN Proposals

- 13. Call for Patents
- 14. Open Issues List Summary
- 15. Review of New Action Items
- 16. Meeting Schedule
 - 16.1 Authorization of Working Group Meetings
- 17. Adjournment

Results of Meeting

1. Opening Remarks

Gene Milligan called the meeting to order at 9:30 a.m., Wednesday February 21, 1996. He thanked Mark Evans of Quantum Corp. for hosting the meeting. Mary Turco reported that the expenses for this meeting were within the amount budgeted by Quantum and that a meeting fee would not be charged for this meeting.

The Chair requested that Larry Lamers complete the minutes for this meeting and thanked him for agreeing to 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 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

Gene Milligan informed the attendees that, if appointed Chair of X3T13 by X3, he preferred to be a "Non-voting Chair" with another Seagate employee functioning as the voting member. He indicated the motivation was to facilitate an attempt to Chair the meetings without bias to specific factional positions. However even in this mode he would reserve the right to cast a vote in the event there were no Seagate representatives present. In order to preserve a basis for volunteering for Chair he intends to remain the Principal member for Seagate until X3 has appointed a Chair for X3T13. Gene asked if there were objections to this concept. Since there were none, he requested that Marc Noblitt cast any votes as the Seagate representative if votes were needed during this ad hoc meeting.

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 agenda was approved with the following additions

- 8.1 ATAPI Command Sets
- 11.7 A-D Pins
- 11.8 Two GB Barrier
- 11.9 Eight GB Barrier
- 12.1 Vendor Specific & Optional Command Zero Budgeting

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.

Charles	Brill	AMP, Inc.	G
Tony	Kwan	Adaptec, Inc.	G
Lawrence	Lamers	Adaptec, Inc.	A1
Ron	Roberts	Apple Computer	A
Marc	Noblitt	Seagate Technology	A
Hale	Landis	Consultant	P
Paul	Raikunen	Digital	P
I. Dal	Allan	ENDL	P
Robert	Liu	Fujitsu Computer Products	P
Anthony	Yang	Hitachi America Ltd	P
Dan	Colegrove	IBM Corp.	P
LeRoy	Leach	Maxtor Corp.	A
Pete	McLean	Maxtor Corp.	P
Curtis	Stevens	Phoenix Technologies	P
Mark	Evans	Quantum Corp.	P
Gene	Milligan	Seagate Technology	P
Tokuyuk	Totani	Toshiba America Info.	P
Tom	Hanan	Western Digital Corp.	P
Devon	Worrell	Western Digital Corp.	A1
Masa	Morizumi	Yamaha	P

4. Document Distribution

The following documents were distributed:

- D96102r1 Use of pins A-D On 44-pin connectors [McLean]
- D96104r1 ATA Overlap Proposal [McLean]
- D96015r0 An Alternate to Proxyinterrupt [McLean]
- D96106r0 Flush Cache [Schnell]
- D96107r1 ATA Device Segmentation Proposal [Stevens]
- D96112r1 Response to ATA-3 letter ballot comments [McLean]
- D96123r0 Get Features [Schnell]
- Proposal for X3T13 1153D ATA-4 [McLean]

5. Review of Old Action Items

- 41) Gene Milligan to continue efforts to secure ANSI patent statement from Compaq regarding security. Continuing. He has received verbal confirmation from Compaq that they will provide a statement in compliance with the ANSI patent policy. Completed. The favorable response has been sent to X3. See D96122r0
- 42) Larry Lamers to provide list of members of ATA WG and X3T10 to Pete McLean for dpANS. Completed.
- 45) Mark Evans to generate meeting announcements for the two subsequent plenaries. Overtaken by events. See future meetings.
- 46) Gene Milligan to survey system vendors on the use of pins A-D in 44-pin environments. Dal Allan included a request for inputs in an article published this month in *ira*. Paul Raikunen surveyed the Digital portables. Overtaken by events at this meeting.

47) Gene Milligan to draft letter to X3T10 regarding development of CD command sets. Gene Milligan discussed this with the X3T10 Chair and will send the letter. Carryover.

48) Gene Milligan to extend an invitation to manufacturers of non-fixed disk removable media to attend the next X3T13 meeting to present a statement of their needs vis-à-vis ATAPI. Gene Milligan contacted one of the manufacturer's and Dal Allan included a request for inputs in an article published this month in Asia. Carryover.

49) Gene Milligan to pursue resolution of the restriction against abstentions on technical issues. In process. Gene has had discussions on this issue with X3 and will pursue a written position. Carryover.

6. ATA-2 - Project 0948Q[Larry Lamers]

Larry Lamers reported that the work is in the queue.

7. ATAPI - Project 1120D Status

Gene Milligan reported that according to the instructions of the X3T13 plenary this project is on hold.

8. Other ATAPI items

8.1 ATAPI Command Set

Devon Worrell noted that there would be additional command sets which will be proposed and he believes X3T13 should address these upcoming command sets. Dal thinks there should be an ATA oriented group coordinating the ATAPI commands since there are distinct differences in application of ATAPI as compared to full fledged SCSI. Ron Roberts noted that MMC has requested a joint meeting with the X3T13 ad hoc Wednesday of the April meeting week. They are considering having an ATAPI section which will be noted as SAM non-compliant.

9. ATA-3 - Project 2008D

9.1 ATA-3 Letter Ballot Results and Comment Resolution

Pete McLean reviewed the deferred Apple comment on the INTRQ. The working group recommended acceptance of the suggested note and while reviewing it also noted that Table 4 should be changed to make it clearer which are pull-ups and which are pull-downs.

On the deferred Quantum comment Pete pointed out that the sector addressing table B.1 was correct but the second paragraph of 7.2 was incorrectly stated. The net result is that the Plenary should not have accepted comments 10 and 11. The working group also recommended that clause B.2 include a note that "This allocation reserves a gap at 16, 384 to support the legacy of a maintenance cylinder"

10. ATA+PI - Project 1153D

10.1 Project 1153D proposed draft

Pete reviewed the document he produced based on the suggestions made at the plenary. The document is mainly ATA-3 Rev 6 plus the latest he had on 1120D.

Curtis Stevens moved and Hale Landis seconded that the title of the document be changed to AT Attachment - 4 with Packet Interface Extensions (ATA/ATAPI-4). The motion passed 10-2.

Several items are being considered:

1) change "ATA" to "this standard"

- 2) look at the usage of the term "data block"
- 3) modify the document to define registers used, modified and ending states
- 4) add "not applicable" to the empty cells in the command tables
- 5) resolve handling of ATAPI 'commands' when secure mode set in ATA
- 6) Tom Hanan will put a note on the reflector dealing with removable devices and applicability to ATAPI devices. Devon noted that SFF 8020 has some problems with regards to handling removable devices.
- 7) delete last sentence from paragraph of 7.7
- 8) make ATAPI soft reset Device Reset Command (mandatory for ATAPI, optional for ATA devices)
- 9) draft commands in the form used for Security Mode

10.2 Strong Command Overlap and Command Queuing [McLean] (96D104r1)

There was considerable discussion under this item and 10.3 relative to the question of whether or not strong command overlap and command queuing was a beneficial task for the ATA interface. Although a consensus could not be claimed, the decision remains that it is beneficial, on the assumption that there will be implementations, to have a definition that has been addressed by a broad representation of industry representatives. Pete noted that he had received a detailed set of editorial suggestions from John Masiewicz which Pete thought made the proposal clearer. The ad hoc agreed to put in John's editorial changes.

10.3 Proxy Interrupt Glitch [Evans] (96D105r0)

Mark Evans presented D96105r0 which documents his proposal. Devon pointed out, that the proposal matched his original definition and has a lot of merit. However he recommends that changes should be limited to only one end of the cable to facilitate uncoordinated implementations. He also has reservations about unexpected interrupts. Mark noted that without a well defined definition, a change at the device end only would leave a legacy of compatibility problems. Pete noted that the HBA or bridge chip would prevent unexpected interrupts to the drivers. Hale supported Pete's position. Devon postulated that the HBA and bridge chip manufacturer's will not implement strong overlap and command queuing until devices are already available and demonstrated with significant performance improvements.

Pete McLean moved and Marc Noble seconded that D96105r0 replace the proxy interrupt definition in 96104r1. The motion passed 12:1.

11. Old Business

11.1 D96107r1 ATA Device Segmentation Proposal [Stevens]

Curtis Stevens reviewed revision 1. Hale Landis pointed out that the last two entries in Clause five should be referencing offset 2. Devon Worrell requested that capability be included to utilize the segments with small buffers. Dal requested that Curtis include the concept of boot time stamps for recovery utilities.

11.2 Items from the Open Issues List [] ()

At the moment there are none.

11.3 ATA Mode X Analog Issues [] ()

No one had any business to conduct.

11.4 ATA Cable Issues and Definitions [McGrath] ()

Totani-san reported that the 80 conductor cable did not show any better performance but did show improved FCC characteristics. Mark Evans reported that terminators have not yet been received. Dal predicts that terminators will sweep the market.

11.5 Cache Flush [Schnell] ()

Richard Schnell provided a proposal but was unable to attend this meeting and asked to present his proposal at the next ad hoc meeting. The consensus of the attendees was for the set features disable cache function to be used.

11.6 X3T13 Reflector, ftp, and Web Site Setup [Hanan]

The incoming directory is now in \pub\standards\X3T13\incoming.

The summary page for the mailings will be in the mailings subdirectory. The mailings subdirectory will eventually have password protection.

There was a request to add the reflector traffic to the CD mailing.

The web site is still waiting for ip number assignment.

11.7 Pins A-D on 44-pin Connector [] (D96102R0)

Dan Colegrove suggested that no jumpers mean drive 0 and that a jumper between D and B be used to indicate that CSEL determines drive 0 and 1. There was consensus for this approach.

11.8 Two Giga Byte Barrier [Stevens] (D96127R0)

Curtis Stevens presented a proposal to resolve a 2 Giga-byte problem with many existing BIOSs. Systems that hang with large drives are the most serious issue. A dual mode of operation is proposed for devices. The drive folks will hold a conference call to discuss this after folks have a chance to check back at the ranch. Watch the reflector for further information.

11.9 Eight Giga Byte Barrier [McGrath]

Curtis Stevens reported that a project proposal for a technical report to publish the EDD document is being developed.

11.10 READ DEFECTS [Totani] (D96116r0)

The consensus was to not pursue this item further.

11.11 Shared IRQs [Stevens] ()

Curtis Stevens reported that he was not ready as yet to make a specific proposal.

12. New Business**12.1 Vendor Specific & Optional Command Zero Budgeting [Evans](96-1250)**

Item 1) accepted

Item 2) needs further work

Item 3) accepted as modified to include ATAPI commands

Item 4) accepted

the definition of obsolete needs words added to require use as previously defined

Item 5) accepted

Item 6) accepted

Item 7) add phrase "no implied relationship between logical and physical sector address"

Item 8) accepted

Item 9) debate on which reset takes out of sleep mode, goes on open issues list

Item 10) delete idle mode transition clause - wait till the next working group

Item 11) Accepted

Item 12-16) See 47-49

Item 47-49) Accepted, includes implied acceptance of 12-16

Item 18-20) goes to issues list for removable features set

Item 21) Rejected

Item 22) Accepted as modified

Item 23) Accepted, FORMAT TRACK removed by unanimous consent

Item 24) Word 47, 49, 51, 52 change to obsolete, words 0, 7, 8, 9 under investigation

Item 25) Revisit - ASCII needs better definition

Item 26) Revisit - conflict in document regarding Standby Timer

Item 27) Accepted

Item 28) Revisit - review Schnell's Get Features Proposal

Item 29) Rejected - still used by PCMCIA

Item 30) see item 28

Item 31) Accepted

Item 32) Accepted - need to track the ramifications in other parts of the document

Item 33) Accepted

Item 34) Being used for specific function by Microsoft, needs to be defined as an immediate command

Item 35) Revisit

Item 36) Revisit

Item 37) Accepted

Item 38) Accepted

Item 39) Accepted

Item 40) Accepted

Item 41) Rejected

Item 42) Deferred

Item 43) Revisit

Item 44) Deferred

Item 45) Accepted

Item 46) Accepted

Item 50) Deferred

Item 51) Accepted

Item 52) Deferred

Item 53) Accepted

Item 54) Accepted

12.2 Microsoft Power Management Architecture

Gene Milligan reported that Microsoft is making information and test software available concerning their power management architecture. Mike Flora is the evangelist for the power management architecture. He has proposed it to PCMCIA and will address it at Winhec 96.

12.3 MSN Proposals

Devon Worrell commented that Microsoft is specifying changes to removable media requirements and suggested that participants access the Microsoft ftp site for details.

13. Call for Patents

This is a regular agenda item to identify any potential patent issues with developing standards.

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 conditions in accordance with the ANSI Patent Policy. No additional patents were identified by the attendees in response to this call.

14. Open Issues List Summary

The following items were added to the list at this meeting:

- 1) Power management regarding leaving sleep mode with "soft"/"hard" reset
- 2) Removable device feature set needs further work

15. Review of New Action Items

- 50) Marc Noblitt to coordinate a follow up telecon to address the proposal to resolve a 2 Giga-byte problem with many existing BIOSs and to post the information for the telecon on the reflector.

16. Meeting Schedule

The next plenary meeting of X3T13 will be April 26, 1996 in the San Jose area hosted by Quantum. The hotel is the Holiday Inn Milpitas.

Mary Turco confirmed that the arrangements made by Tom Hanan for the October meeting will be finalized by Quantum without the need for a meeting fee. The meeting will be in Hawaii to facilitate participation by organizations in Asia.

Tom Hanan confirmed that Western Digital could host additional meetings to assist in the avoidance of meeting fees. Marc Noblitt also volunteered to host additional meetings by Seagate in either Colorado or San Jose without meeting fees.

Dal Allan reviewed the arrangements he has made to handle credit card payments of fees should they be needed in the future.

16.1 Currently scheduled ad hoc (Working Group) Meetings

X3T13 Working Group on March 27-29, 1996 at the Boulderado Hotel, in Boulder, CO.

X3T13 Working Group on April 24-25, 1996 at the Holiday Inn in Milpitas, CA. (Note: an early portion of this meeting will be a joint session with the X3T10 MMC ad hoc.)

17. Adjournment

The meeting was adjourned upon completion of all agenda items.