

Accredited Standards Committee*

NCITS, National Committee for Information Technology Standards

Doc. No.: T13/D97149R0

Date: August 29, 1997

Project:

Ref. Doc.:

Reply to: Lawrence J. Lamers

To: Membership of T13

From: Lawrence J. Lamers, Secretary T13
Gene Milligan, Chair T13

Subject: Minutes of T13 Working Group
August 20-22, 1997 : Longmont, CO

Agenda

1. Opening Remarks
2. Approval of Agenda
3. Attendance
4. Document Distribution
5. Review of Old Action Items
6. ATA/ATAPI-4 - Project 1153D
 - 6.1 Review of working draft
 - 6.2 SRST protocol for overlapped and queued devices [Hanan] (D97137)
7. Enhanced BIOS Disk Drive Technical Report - Project 1226DT
8. Old Business
 - 8.1 Items from Open Issues List
 - 8.1.1 TE value in Table 31 Multiword DMA data transfer
 - 8.1.2 Can the minimum 40ns be extended to all devices any time it is asserted?
 - 8.1.3 How should removable media devices handle words 54-58?
 - 8.2 PIO Response Tables for Annex E [Landis] (D97134r0)
 - 8.3 Integrity Procedure [Hanan] (D97103r0)
 - 8.4 Autopolling [Goodfellow] (D97142)
 - 8.5 CHS & LBA [Evans] (D97145)
9. New Business
 - 9.1 DMA Question [] ()
 - 9.2 More Software Reset Side Effects [] ()
 - 9.3 Power-up in Standby [] (McLean)
 - 9.4 INTRQ [] ()
10. Call for Patents
11. Open Issues List Summary
12. Review of New Action Items

*Operating under the procedures of The American National Standards Institute.

NCITS Secretariat, Information Technology Industry Council (ITI)

1250 Eye Street NW, Suite 200, Washington, DC 20005-3922

Email: ncits@itic.nw.dc.us Telephone: 202-737-8888 FAX: 202-638-4922

14. Adjournment

Results of Meeting

1. Opening Remarks

Gene Milligan called the meeting to order at 9:00 a.m., Wednesday August 20, 1997. He thanked Yogi Schaffner of Silicon Systems 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 T13 and would be conducted under the NCITS rules. Ad hoc meetings take no final actions, but prepare recommendations for approval by the T13 technical committee. The voting rules for the meeting are those of the parent committee, T13. For the ad hoc, other than straw votes, the voting rules are: one vote per participating company.

Gene Milligan informed the attendees that, as Chair of T13, 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 T13 ftp site and the T13 reflector and will be included in the next T13 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 T13 membership. Working group meetings are open to any person or company to attend and to express their opinion on the subjects being discussed.

Lawrence	Lamers	Adaptec, Inc.	A1
Ron	Roberts	Apple Computer	A
Irv	Tjomsland	Award	P
Ben	Chang	Cirrus Logic Inc.	P
Paul	Raikunen	Digital	P
Kazuo	Nakashima	Fujitsu	G
Anthony	Yang	Hitachi America Ltd.	P
Dan	Colegrove	IBM Corp.	P
Pete	McLean	Maxtor Corp.	P
Gregg	Goldman	Meltzer & Lippe	G
Mike	Christensen	Phoenix Technologies	A
Curtis	Stevens	Phoenix Technologies	P
Mark	Evans	Quantum Corp.	P
Gene	Milligan	Seagate Technology	P
Marc	Noblitt	Seagate Technology	A
Paresh	Sheth	Silicon Systems Inc.	P
Yogi	Schaffner	Silicon Systems, Inc.	A
John	Lohmeyer	Symbios Logic	G

Tokuyuki	Totani	Toshiba America Info.	P
Tom	Hanan	Western Digital Corp.	P

4. Document Distribution

The following documents were distributed:

T13 Document Register - 1997
 T13/1153D Rev 15 ATA/ATAPI-4 [McLean]
 T13/1226 DT Rev 6 EDD [Stevens]
 D96145r2 CHS/LBA Cleanup [Evans]

5. Review of Old Action Items

None.

6. ATA/ATAPI-4 - Project 1153D

6.1 Review of working draft

Pete conducted a review of the change bars in Revision 15.

Mark Evans noted that further investigation indicates that the pull-down resistor for DD7 should be on the connector side of the terminating resistor. However the difference is quite small.

Table 5 needs to be updated to correlate with Table C.1.

5.2.9 paragraph 3 vs. 6.7 paragraph 5 – Solution is to delete the last sentence of 6.7 paragraph 5.

Dan Colegrove moved and Mike Christensen seconded that the definition in item c) in D96145R2 be included in ATA-4. The motion carried 6:3.

Hale Landis moved and Mark Evans seconded that error register descriptions for other media access commands be synchronized with the above motion such that ABORT is allowed for sector addresses that are beyond the user accessible area of the media. The motion carried 10:2.

Mark Evans developed a foil with the wording to implement the prior motion.

IDNF shall be set to one if a user-accessible address could not be found and after an unsuccessful initialize device parameters command [until a valid CHS translation is established] see 8.16.8.
 IDNF shall be set to one if an address outside of the range of user-accessible addresses is requested if ABRT is not set to one.

ABRT shall be set to one if ...
 ABRT may be set to one if the device is not able to complete the command.

Change AMNF for CFA to MED (media error detected).

Revised Table 4 Note 6 to remove "If host uses level sensitive interrupt controller..". Also added 10k to host column of INTRQ.

The consensus of the group is to letter ballot rev 16 of ATA/ATAPI-4.

6.2 SRST protocol for overlapped and queued devices [Hanan] (D97137)

Not available.

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

Letter ballot has been issued. It is set to close on September 10, 1997

8. Old Business

8.1 Items from Open Issues List

8.1.1 TE value in Table 31 Multiword DMA data transfer

A value of 50ns for tE was put in. Clause 10.1 add “..at the connector of the selected device..”

8.1.2 Can the minimum 40ns be extended to all devices any time it is asserted?

Consensus is no. The draft will remain as worded.

8.1.3 How should removable media devices handle words 54-58?

No changes needed.

8.2 PIO Response Tables for Annex E [Landis] (D97134r0)

Hale did not have an updated proposal at this meeting.

8.3 Integrity Procedure [Hanan] (D97103r0)

No business to conduct.

8.4 Autopolling[Goodfellow] (D97142)

No business to conduct.

8.5 CHS & LBA [Evans] (D97145)

Mark Evans reviewed revision 2 of the proposal. Pete McLean raised the question of whether words 54-58 as written are correct for removable devices (see also 8.1.3).

The following replaces paragraph 2 in clause 6.2:

Devices shall support translations as described below:

- All devices shall support LBA translation.
- If the device's capacity is greater than or equal to one sector and less than or equal to 16,514,064 sectors the device shall support CHS translation.
- If the device's capacity is greater than 16,514,064 sectors, then the device may support CHS translation.
- If a device supports CHS translation, then, following a power-on or hardware reset, the CHS translation enabled by the device is known as the default translation.
- If a device supports CHS translation, then a device may allow a host to use the INITIALIZE DEVICE PARAMETERS command to select other CHS translations.
- If a device supports CHS translation, then IDENTIFY DEVICE words 1,3, and 6 describe the default translation, and words 53-58 describe the current translation.

The recommendation of the working group was to incorporate D97145R3 into the working draft.

9. New Business

9.1 DMA Question [] ()

If a megabyte of data is to be transferred can the DMA engine be programmed once and multiple commands sent to the drive and the transfers occur?

The draft does not preclude a device working in this mode, it is essentially a host issue, and chip set specific.

Is DREQ biased on the host so that a tristate of the signal by the device does not cause an inadvertent transfer? The current draft requires a pull-down on the signal so compliant device will work if the host is ATA/ATAPI-4 compliant.

9.2 More Software Reset Side Effects [] ()

The response to the question on reset posted to the reflector is that it is too late to resolve all the side effects of software reset. It remains device dependent.

9.3 Power-up in Standby [] (McLean)

Pete McLean suggested a set features option to specify a boot device so that only one drive would spin up at power on with the remaining devices powering up in standby.

Dan Colegrove suggested that a signature be added for drives in standby mode. This would aid the BIOS boot process for drives that come up in standby mode. Higher rpm drives, higher current requirements, and longer spin up times are driving this. The 5 second time-out for the IDENTIFY COMMAND is not being met by a number of BIOSs today.

It was suggested that a partial IDENTIFY DATA bit be added.

Pete McLean agreed to prepare a proposal to further the discussion.

Tom Hanan moved and Curtis Stevens seconded that the proposal for the power-up standby be deferred to a future standard. The motion carried 6:3.

9.4 INTRQ [] ()

Educational discussion.

10. 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 T13 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.

11. Open Issues List Summary

The following item was added to the list at this meeting:

None.

12. Review of New Action Items

77) Chair to issue meeting cancellation notice of September working group.

13. Meeting Schedule

In view of the fact that ATA/ATAPI-4 should still be in the ballot period, the group recommended that the September working group be canceled.

The next plenary meeting of T13 will be October 24, 1997 at the Aston Wailea Hotel, in Wailea, HI hosted by Quantum.

The next working group meeting will be October 22-23, 1997 Aston Wailea Hotel, in Wailea, HI hosted by Quantum.

The long term meeting schedule is:

Date	Location	Host	Contact
October 22-24, 1997*	Wailea, Maui, HI	Quantum	Mark Evans
<i>December 3-5, 1997+</i>	Irvine, CA	Western Digital	Tom Hanan
<i>January 21-23, 1998+</i>			<i>Marc Noblitt</i>
February 17-20, 1998*	Ft. Collins	Symbios Logic	Dave Evans
<i>March 25-27, 1998+</i>			<i>Marc Noblitt</i>
April 14-17, 1998 *	San Jose, CA	Seagate	Marc Noblitt
<i>May 20-22, 1998+</i>			<i>Marc Noblitt</i>
June 16-19, 1998*	Irvine, CA	Western Digital	Tom Hanan
<i>July 22-24, 1998 +</i>			<i>Marc Noblitt</i>
August 18-21, 1998*	Boulder, CO	Maxtor	Pete McLean
<i>September 23-25, 1998+</i>			<i>Curtis Stevens</i>
October 20-23, 1998*	Wailea, Maui, HI	Quantum	Mark Evans
December 1-4, 1998*	Irvine, CA	Western Digital	Tom Hanan

* indicates that Friday will be used for the plenary meeting.

+ indicates this meeting is tentative and may be canceled.

14. Adjournment

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