

Accredited Standards Committee\*  
NCITS, National Committee for Information Technology Standards

Doc. No.: T13/D97127R0  
Date: 5/12/97  
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  
April 23-24, 1997 : Irvine, CA

---

### 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 Set Max [Colegrove] (D97119)
  - 6.3 Annex B changes from EDD
  - 6.4 Annex C changes from Ultra DMA (D97128)
7. Enhanced BIOS Disk Drive Technical Report - Project 1226DT
8. Old Business
  - 8.1 Items from Open Issues List
    - 8.1.1 ID Not Found if seek address out of range
    - 8.1.2 ATA/ATAPI-4 read only device or read only modes
    - 8.1.3 Bit 13 word 49
  - 8.2 Support for Removable Media [] (D97120r0)
  - 8.3 Tailgate [Hanmann] (D97107r3)
  - 8.4 PDIAG in 80 Conductor cable [Evans]
  - 8.5 Compact Flash Feature Set [Landis] (D97116r1)
  - 8.6 44 & 66 MT/s [Evans] (D97117r0)
9. New Business
  - 9.1 Advanced Power Management [Colegrove] (D97126)
  - 9.2 Cable Select [Goodfellow] (D97129)
  - 9.3 T13 IEEE World Wide ID procedure [McLean]
  - 9.4 GT 8 GB & CHS Addressing
10. Call for Patents

\*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

- 11. Open Issues List Summary
- 12. Review of New Action Items
- 13. Meeting Schedule
- 14. Adjournment

---

## Results of Meeting

### 1. Opening Remarks

Gene Milligan called the meeting to order at 9:00 a.m., Wednesday April 23, 1997. He thanked Jonathan Hanmann of Western Digital 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 ITCITS rules. Ad hoc meetings take no final actions, but prepare recommendations for approval by the 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 and the ATA 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 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.	P
Wen	Lin	Adaptec	G
Lawrence	Lamers	Adaptec, Inc.	A1
Bill	Mable	Amphenol Interconnect	G
Ron	Roberts	Apple Computer	A
Irv	Tjomsland	Award	O
Lang	Dennis	Circuit Assembly Corp.	O
Ben	Chang	Cirrus Logic Inc.	P
Hale	Landis	Consultant	P
Paul	Raikunen	Digital	P
Don	Vohar	Fujitsu Computer Products	A
Tony	Goodfellow	GSI	P

Richard	Harcourt	GSI	A1
Tom	Wood	GSI	G
Anthony	Yang	Hitachi America Ltd.	P
Dan	Colegrove	IBM Corp.	P
Terry	Miller	Iomega Corp.	G
Pete	McLean	Maxtor Corp.	P
Christopher	Mayne	O.R. Technology	A
Mike	Christensen	Phoenix Technologies	A
Greg	Elkins	QLogic Corp.	P
Mark	Evans	Quantum Corp.	P
John	Mangan	SanDisk	G
Yasuyuki	Suemori	Sanyo Electric Co., Ltd.	A
Gene	Milligan	Seagate Technology	P
Marc	Noblitt	Seagate Technology	A
Jeff	Reid	Seagate Technology	G
Yogi	Schaffner	Silicon Systems, Inc.	P
Jeff	Cousins	SyQuest Technology	G
Tokuyuki	Totani	Toshiba America Info.	P
Tom	Hanan	Western Digital Corp.	P
Jonathan	Hanmann	Western Digital Corp.	G

#### 4. Document Distribution

The following documents were distributed:

T13 Document Register - 1997  
 T13/1153D Rev 11 ATA/ATAPI-4 [McLean]  
 D97119r1 IDENTIFY DRIVE bit for minimum standby timer  
 D97126r0

#### 5. Review of Old Action Items

76) Tom Hanan to develop a proposal for error register use on packet devices. Carried over.

#### 6. ATA/ATAPI-4 - Project 1153D

##### 6.1 Review of working draft

Pete McLean stated that rev 11 is available. Pete conducted a review of the flow diagrams and change bars. Numerous changes to the flow diagrams were agreed to.

The DEVICE RESET command is no longer mandatory for non-packet devices that support queuing.

##### 6.2 Set Max [Colegrove] (D97119)

Dan Colegrove reviewed rev 1 of the proposal. In this version SET MAX does not change with INITIALIZE DRIVE PARAMETERS, all SET MAX commands are based on native addressing. A value volatile (VV) bit has been added to SET MAX to allow the capacity to be temporarily altered. Dan agreed to define the term native.

There was concern expressed for anti-virus protection and the handling of removable media. Dan will investigate whether the SET MAX ADDRESS should be aborted when in frozen mode. Add a restriction that only one non-volatile setting per power up is allowed. The consensus is to not allow Set Max feature set on removable devices.

##### 6.3 Annex B changes from EDD

Mike reported that Curtis Stevens is not prepared to deal with this at this time.

Hale Landis suggested that Annex B be placed into Project 1226 DT and removed from Project 1153 D.

In the absence of objection the working group recommended that the information contained in Annex B be included in Project 1226 DT.

#### **6.4 Annex C changes from Ultra DMA (D97128)**

Mark Evans plans to complete this proposal in the near future.

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

Curtis Stevens was not present. The working group again requested the revision 2 electronic draft.

### **8. Old Business**

#### **8.1 Items from Open Issues List**

##### **8.1.1 ID Not Found if seek address out of range**

Quantum reported that this bit is used if the seek address is out of range.

##### **8.1.2 ATA/ATAPI-4 read only device or read only modes**

The current draft requires implementing Write commands; the draft should be modified to allow read-only devices to be compliant. The group recommended that the following wording be included. On page 17, below the list of mandatory commands; "Read only devices shall abort the write command."

##### **8.1.3 Bit 13 word 49**

The sense of the bit is inverted. The group recommends that this be corrected in the draft. However the inverted sense is the way the bit is defined in ATA-3 and in ATA-2.

This device supports a minimum timer value greater than 5 minutes. Lump words 49 and 50 together; The new function will be in bit zero.

#### **8.2 Support for Removable Media [] (D97120r0)**

The proposal will be worked on by Iomega and SyQuest, with the intent of completing it by May.

#### **8.3 Tailgate [Hanmann] (D97107r3)**

Pete reported that revision 3 is available. The next meeting is 5/5-6/97 in Natick, MA. Co-located with SBP-2 working group.

#### **8.4 PDIAG in 80 Conductor cable [Evans]**

Mark Evans had an electronic version, however there is an issue where some drives do not release PDIAG. The current draft does not require the release of PDIAG. If one of these old devices was on the 40-conductor cable it would appear to be an 80-conductor cable.

This will be revisited when Mark has a solution for PDIAG.

#### **8.5 Compact Flash Feature Set [Landis] (D97116r1)**

Hale Landis reviewed a summary of the changes to revision 1. There was some debate because at least one drive vendor indicated that some of the vendor specific codes proposed for CFA were currently in use. It was agreed that if a device reports that it is a CFA device the commands are CFA commands if not they are vendor-specific.

Pete McLean moved and Tony Goodfellow seconded that the proposer be directed to complete revision 2 and that the CFA feature set has technical merit and should be included in a future draft standard. The motion carried 15:1. Tom Hanan stated that his no vote is due to possible conflicts with existing hardware.

Pete McLean moved and Hale Landis seconded that the working group recommended that the CFA feature set be incorporated into ATA/ATAPI-4. The motion carried 12:3.

### **8.6 44 & 66 MT/s [Evans] (D97117r0)**

Mark Evans reported that there are some unresolved issues. The document is still not completed; this is an ATA-5 proposal.

## **9. New Business**

### **9.1 Advanced Power Management [Colegrove] (D97126)**

Dan requested two set feature codes, identify data words/bits be allocated for APM.

Tom Hanan moved and Mike Christensen seconded that a revision to the proposal be developed and it be made an agenda item for the next meeting. The motion carried unanimously.

Dan Colegrove moved and Pete McLean seconded that word 83 bit 3, word 86 bit 3, and word 91 and set features codes 05h and 85h be allocated for APM until such time as the proposal is disposed of. The motion carried unanimously.

### **9.2 Cable Select [Goodfellow] (D97129)**

Tony Goodfellow stated that there is an issue with cable select in the after market. The existing definition of cable select is not electrically correct, causing drives to change their logical assignment if a second device is attached.

Tony has a better cable that does position the devices correctly, however the draft in figure 3 needs some modification. Tony will bring in a proposal for changes.

### **9.3 T13 IEEE World Wide ID procedure [McLean]**

Marc Noblitt moved and Mark Evans seconded a motion to recommend D97124r1 as the registration for IEEE world wide Ids for T13. The motion carried unanimously.

### **9.4 GT 8 GB & CHS Addressing**

The following set of rules were agreed to:

CHS allowed for LT 8 GB addresses  
LBA required for GT 8 GB addresses  
Identify Words 54-58 limited to LT 8 GB  
IDP aborted for GT 8 GB  
Commands with CHS GT 8 GB return ID NOT FOUND

## **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 items were added to the list at this meeting:

- 4) Synchronization of Status and Alternate Status Registers with Busy.
- 5) Should the 'or' in Figure 13 be eliminated.
- 6) Figure 17 - Should the requirement to release when the Bus Device Release Interrupt is enabled be removed?.

**12. Review of New Action Items**

There were none.

**13. Meeting Schedule**

The next plenary meeting of T13 will be April 25, 1997 at the Western Digital facility, in Irvine, CA hosted by Western Digital.

The next working meeting will be May 21-23, 1997 at the Stanley Hotel, in Estes Park, CO hosted by Seagate.

The subsequent working group meeting will be June 18-20, 1997 at the Western Digital facility, in Irvine, CA hosted by Western Digital.

Date	Location	Host	Contact
May 21-23, 1997	Estes Park, 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*	Maui, 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	Ft. Collins, CO	Symbios Logic	Mike Winchell
March 25-27, 1998	Longmont, CO	Maxtor	Pete McLean
April 15-17, 1998	Irvine, CA	Western Digital	Tom Hanan
May 20-22, 1998			
June 17-19, 1998	Irvine, CA	Western Digital	Tom Hanan
July 22-24, 1998			

\* Plenary

**14. Adjournment**

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