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**Date:** 5 March 2003  
**Reply to:** Pete McLean

**To:** Membership of T13  
**From:** Curtis Stevens, Secretary of T13, and Pete McLean, Chairman of T13  
**Subject:** Minutes of the authorized T13 working group meeting at Irvine, CA.  
March 4 and 5, 2003

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### Agenda

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### Results of the Meeting

#### 1 Opening remarks

Pete McLean, the T13 Chair, called the meeting to order at 9:00 A.M. on Tuesday, March 4, 2003. Pete thanked Curtis Stevens and Pacific Digital for hosting the meeting and John Masiewicz and Western Digital for providing the refreshments.

As is customary, the people in attendance introduced themselves, and a copy of the attendance list was circulated. Copies of the agenda were made available to those in attendance.

The Chair briefly reviewed the meeting rules: T13 is a Technical Committee of INCITS and operates under INCITS rules. Anyone with interest in the work of the committee is free to attend and take part in discussions. However, motions and votes are limited to member organizations, one vote per member organization.

The Chair noted that since this is a working group meeting no actions taken are final. All actions are recommendations to the T13 plenary.

The Chair also noted that T13 operates under the INCITS antitrust guidelines. There should never be discussion of the following topics at any INCITS or an INCITS subgroup meeting:

- Any company's prices or pricing policies;
- Specific R&D, sales and marketing plans;
- Any company's confidential product, product development or production strategies;
- Whether certain suppliers or customers will be served;
- Prices paid to input sources; or
- Complaints about individual firms or other actions that might tend to hinder a competitor in any market.

Policies and Procedures and antitrust guidelines for INCITS are available at the web site at [www.incits.org](http://www.incits.org). T13 operates under these policies and procedures augmented by the T13 procedures at the T13 web site at [www.t13.org](http://www.t13.org).

## 2 Approval of agenda

Ron Roberts moved and Curtis Stevens seconded that the agenda be approved as reflected in these minutes. The motion was approved unanimously.

## 3 Membership and attendance

The Chair noted that since this is a working group meeting, attendance does not count toward maintaining T13 voting membership.

The following individuals attended:

|                  |                             |                |                 |
|------------------|-----------------------------|----------------|-----------------|
| Ron Roberts      | Adaptec                     | Don Doan       | Pacific Digital |
| Steven Fairchild | HP                          | Craig Stuber   | Petalynx        |
| Dan Colegrove    | Hitachi Global Storage Tech | Larrie Carr    | PMC-Sierra      |
| Knut Grimsrud    | Intel                       | Jim Hatfield   | Seagate         |
| Pete McLean      | Maxtor                      | David Crespi   | Vixel           |
| Curtis Stevens   | Pacific Digital             | Kenneth Hirata | Vixel           |
| Jalil Fadavi     | Pacific Digital             | John Masiewicz | Western Digital |

## 4 Review of ATA/ATAPI-7 Volume 3

Starting by reviewing the outline...

There was discussion on First Party DMA. The issue is that the transport layer is defined, but the command layer is not. More information is contained in SATA II phase 1. Everyone was asked to query their organizations to determine if First Party DMA should be defined in ATA/ATAPI-7 or should it be placed in a future revision possibly when SATA II is available for inclusion.

There was discussion on the definition of a host. In some places the host includes the adapter and in others it does not. Are the standard PATA registers required for standard devices? How should the “emulation” of the PATA registers be documented? One issue is the concept of Shadow Registers. New definitions were created for Shadow Command Block and Shadow Control Block. Debate continued on what comprises a host and a new definition of Host and Host Adapter was created.

There is currently no definition of a register. In the parallel case the registers are a physical hardware entity. In the serial case the registers are fields within a FIS.

There was discussion on the EIA specifications that are called out in some of the tables. Are they a requirement or a recommendation? If they are a requirement, then the test procedures become part of the requirements.

There was a lot of confusion expressed on the terms “phy” and “phy layer” and what they represent or include. Suggestion was made that a “Phy (Physical Layer Electronics)” section be defined and that all references to phy and phy layer be removed in favor of terms that are more specific and can reference sections in the physical layer. Need to add Phy to glossary.

There was discussion on how to handle the Align Primitive. The function is generally implemented in the phy, but all the other primitives are defined in the link layer section.

There was discussion on the FIS notation that has adjacent fields marked as reserved. Some of the reserved fields are reserved in all the FIS types while others are reserved in specific FISes. There was no resolution.

There was some discussion on DMA Terminate. The group generally did not see the value of this primitive. The maximum amount of data that can be transferred in a frame is 8k. The DMA Terminate could limit the amount of data to less than 8k.

Because there is no clear ATA command that performs the BIST function, the BIST FIS must be generated in a vendor specific way.

There was discussion on Annex J. The information was intended as a summary of how to issue commands. In practice it is used as an implementation piece and ends up generating a lot of questions. Pete McLean recommended creating a technical report that provides implementation guidelines. Another approach would be to modify the procedures to reference the various areas of the document for the normative information and leave in the extra stuff. Another approach would be to move the additional information into the relevant areas of the document.

There was an issue brought forward that the host-side state machines are in volume 2, tied to the parallel interface.

We completed the outline review at 11:40 5-Mar.

The word Character is used in several different ways. Characters can be ASCII characters, or different types of 8b/10b things. The group agreed that use of the word character is context sensitive. Definitions of Data Character and Control Character have been added to the glossary.

Discovered an issue with cross-references that span volumes. One solution would be to insert a full document map into each volume.

Ended the review at FUA (Forced Unit Access).

Jim Hatfield moved and Dan Colegrove seconded that the changes agreed to be included in a new ATA/ATAPI-7 Revision 2a and that the working group recommend to the plenary that this revision be adopted as the ATA/ATAPI-7 working draft. Motion passed unanimously.

## **5 Action Items**

1. Steven Fairchild to bring in a proposal for how to describe tracking and non-tracking implementations and how to organize the description of elasticity buffers.
2. Knut Grimsrud will bring in a list of the FIS type fields that need to be reserved for SATA II.
3. Pete McLean will create a new revision (2a) of d1532.
4. Jim Hatfield agreed to print copies of the updated volume 3 for the April meeting.

## **6 Open Issues**

1. Should First Party DMA be removed from ATA/ATAPI-7?
2. Should DMA Terminate be removed from ATA/ATAPI-7?
3. Should DMA Setup be removed from ATA/ATAPI-7?
4. Should clause 19 be kept together or broken up and error handling distributed to the appropriate sections?
5. Should Annex J be kept or removed?
6. Should some of the host-side state transition diagrams be moved or duplicated into volume 1 or 3.
7. Should the mechanical drive drawings remain in volume 2 or should they be moved or duplicated elsewhere?
8. Do we include references to SFF-8070i in the normative references?
9. Cross references in common areas such as the glossary will have broken links using the current notation.

## **7 Adjournment**

Dan Colegrove moved Curtis Stevens and seconded that the meeting be adjourned on March 5, 2003 at 3:40 pm.