

Accredited Standards Committee\*  
**InterNational Committee for Information Technology Standards (INCITS)**

Doc. No.: T13/07-156r0
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Date: April 30, 2007

Reply to: Mark Overby

To: T13 Membership  
From: Mark Overby  
Subject: T13 Plenary Meeting (Longmont, CO) -- April 20-22, 2007

## Agenda

1. Opening Remarks
2. Approval of Agenda
3. Attendance and Membership
4. Approval of the Previous Minutes
5. Document Distribution
6. Review of Previous Action Items
7. Old Business
8. New Business
9. Liaison Reports
10. Call for Patents
11. Review of Action Items
12. Meeting Schedule
13. Adjournment

## Results of Meeting

### 1. Opening Remarks

Dan Colegrove, the T13 Chair, called the meeting to order at 0903 Tuesday, April 24th, 2007. Dan Colegrove thanked Aaron Wilson and ST Microelectronics for hosting the meeting.

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 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.

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

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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**

Mark Overby moved, Dan Colegrove seconded, that the agenda be approved as revised. The motion passed by unanimous consent.

## **3. Attendance and Membership**

The Chair reviewed the rules for membership and attendance:

### **3.1 Membership**

An individual from an organization new to T13 must attend at least one T13 plenary meeting before requesting voting membership. After that meeting, the representative may request membership from the T13 chair stating expertise and material interest in the scope of the committee and pay the required fees to INCITS. The time when membership becomes effective has just changed. Membership now becomes effective at the start of the next meeting the organization attends assuming the organization attends one of the next two meetings.

### **3.2 Fees**

Current INCITS memberships fees for Principal or additional Alternates are 800.00 USD. The First Alternate is free with a Principal membership.

Mailings of committee documents are available to any interested party after each plenary meeting. The cost for mailings for one year is 300.00 USD for mailing in the USA and 400.00 USD for mailing to a location outside of the USA.

Persons with questions or requests regarding membership fees and/or subscriptions for mailings should contact Parthenia Purnell, ITI Standards Operations, at [ppurnell@itic.org](mailto:ppurnell@itic.org).

### **3.3 Attendance**

In addition to payment of fees, there are also minimum attendance and participation requirements to maintain voting membership status on T13. A representative from a member organization must attend two of every three plenary meetings and vote on at least every other letter ballot. If a member organization fails to have a representative in attendance at two of the last three T13 plenary meetings or vote on every other letter ballot, they are warned that failing to attend the next T13 meeting or to vote on the next letter ballot will result in their voting membership being terminated.

Attendance at a working group meeting does not affect voting membership status in T13.

The T13 voting membership during the meeting was 22 organizations.

The number of eligible voting members required for establishing a quorum was 8. 17 Member organizations were present at the start of the meeting, thus a quorum was present.

The following individuals attended:

Table 1: Attendance List

Attendee	Company		Attendee	Company
Steve Livaccari	IBM		Paul Chicoine	Phoenix
Jim Hatfield	Seagate		Mark Overby	NVIDIA
Larry Barras	Apple Computer		Joseph Chen	Samsung
Sumit Puri	Fujitsu		Mladen Luksic	Western Digital
Dan Colegrove	Hitachi GST		Curtis Stevens	Western Digital
Wayne Bellamy	HP		Avraham Shimor	SanDisk
Tom Pratt	Dell		Aaron Wilson	ST Microelectronics
Frank Shu	Microsoft		Ken Foust	Kionix
Brian Dees	Intel		Bill Martin	Emulex
John Geldman	Lexar Media		Nathan Obr	Microsoft
Paul Chicoine	Phoenix		Hale Landis	Broadcom
Duncan Penman	Western Digital		Edward Dageforde	Broadcom
Patrick Henry	Toshiba		Cang Nguyen	Marvell

#### 4. Approval of the minutes from the previous T13 plenary meeting (e07100r0)

Dan Colegrove noted that on 7.5.1.5 that it should have stated revision 5, not revision 6. Dan Colegrove moved, Curtis Stevens seconded, that the minutes be approved as revised. The motion passed with unanimous consent.

#### 5. Document Distribution

No documents were distributed by hard copy.

#### 6. Review of Previous Action Items

1. Dan Colegrove to restart the DDT technical report through INCITS {Done}

#### 7. Old Business

##### 7.1 ATA/ATAPI-7: 1532D

##### 7.1.1 ISO Status

Mark Overby reported that ISO has balloted and approved volume 1 as an international standard. Volumes 2 and 3 are being prepared for the ISO editor for editing.

##### 7.1.2 ATA/ATAPI-7 Amendment [Overby]

##### 7.1.2.1 INCITS Status

Dan Colegrove is working with INCITS to complete processing of the amendment.

## 7.2 HBA Amendment 1

Dan Colegrove stated that public review was scheduled for April 2007.

## 7.3 HBA-2 Standard Project: 2014-D

Mark Overby reported that there was nothing new at this time.

## 7.4 DDT Technical Report

Dan Colegrove reported that the project has been restarted and is progressing.

## 7.5 ATA/ATAPI-8 Projects

### 7.5.1 AT Attachment 8 - Command Set (ATA8-ACS)

#### 7.5.1.1 NVCache Identify Issues [Obr]

Curtis Stevens moved, Jim Hatfield seconded, that issue number 184 be accepted into ATA8-ACS. The motion passed with 18 ayes, 0 nays, and 1 abstention.

#### 7.5.1.2 ATA Feature Summary (e05144r1) [Chen]

Joseph Chen stated that this can be removed from the agenda.

#### 7.5.1.3 HPA State Machine Diagram (e03124) [Chen]

Joseph Chen presented revision 10 of the HPA document. Minor changes were made during review and style discussions were held and made. Joseph Chen moved, Jim Hatfield seconded, that e03124r11 be incorporated into ATA8-ACS. The motion passed with 14 ayes, 0 nays, and 3 abstentions. John Goldman noted that r11 had already been posted to the website and it was realized that the wrong revision had been reviewed. The group then reviewed revision 11 for the same changes needed. Curtis Stevens moved, Jim Hatfield seconded, that the previous motion be reconsidered. The motion passed with unanimous consent. The main motion was amended to read e03124r12. The amended motion passed with 14 ayes, 0 nays, and 3 abstentions.

#### 7.5.1.4 How does HPA affect word 86 bit 8 (e06161r0) [Chen]

Joseph Chen stated that he felt that this has been handled in the HPA state diagram.

#### 7.5.1.5 ATA8-ACS Endianness clarifications (e07129r0) [Bellamy]

Mark Overby moved, Curtis Stevens seconding, that this agenda item be deferred to ATA8-ACS2 agenda. The motion passed with 15 ayes, 0 nays, 3 estimations.

#### 7.5.1.6 SATA IO Commands for ATA8 (e07131r0) [Stevens]

Curtis Stevens reviewed the latest revision of the document that incorporates material from SATA-IO into ATA8-ACS. Various editorial comments were provided to Curtis for incorporation into the proposal.

Discussion was held about if the NCQ commands should have EXT appended to the name because they use 48-bit addressing. Some parties believed that it adds no value, other parties believed that it would be inconsistent with existing commands without the EXT. No consensus was reached and the command will remain unchanged.

Later during the plenary, Curtis reviewed a revised version of the proposal incorporating feedback during the initial review.

Curtis Stevens moved, Jim Hatfield seconding, that e07131r3 be incorporated into ATA8-ACS. The motion passed with 16 ayes, 0 nays, and 1 abstention.

#### 7.5.1.7 Remove Input Output Structures (e07134) [Bellamy]

Wayne Bellamy asked that this be deferred to ATA8-ACS2.

#### *7.5.1.8 Little Endian World Wide Name (e07132) [Bellamy]*

Wayne Bellamy asked that this be removed from future agenda.

#### *7.5.1.9 RPM and Form Factor Reporting (e07155) [Bellamy]*

Wayne Bellamy reviewed the latest revision of his proposal to report RPM and form factor. Wayne noted that the document has a new number compared to the previous revision. There was significant discussion about the form factors and how to report the form factor in a meaningful way. There was discussion about needing or not needing connector information. In addition, there was discussion about the fact that some of the documents that describe the form factors. A straw poll was conducted if there was a desire to see this material incorporated into ATA8-ACS. There were 3 in favor and 4 opposed.

Mark Overby moved, Curtis Stevens seconded, that this proposal be deferred to ATA8-ACS2. During discussion of the motion Mark and Curtis both noted that they felt the proposal has merit, but with the long discussions over form factor and other items that it will be the long pole for completing ATA8-ACS and should be deferred to ACS2 for further work. Wayne stated that he would split his proposal and remove the controversial material. Mark withdrew his motion and agreed that would resolve the issue.

Wayne Bellamy moved, Sumit Puri seconded, e07155r1 be approved for inclusion to ATA8-ACS. The motion passed with 12 ayes, 1 nay, and 3 abstentions. Jim Hatfield stated that he voted no because he felt it was incomplete and not ready for inclusion.

#### *7.5.1.10 DCO and Identify Data Structure (e07117) [Chen]*

Joseph Chen reviewed the latest revision of his document containing each ATA feature and how it interacts with DCO and SET FEATURES. It was suggested during this review that this be moved to the website and discussed as part of that as the material is not headed to one of the standards.

#### *7.5.1.11 SET FEATURES Indicate power Source (e07121) [Hatfield]*

Jim Hatfield reviewed the latest revision of his proposal. A lengthy discussion ensued about the usefulness of telling the drive what the power condition of the platform is (AC vs. DC). Discussion resolved around if this was really about performance and not power. There were other discussions that stated that there were needs for this soon so that the drives can intelligently decide when to do things such as background scans versus conserving power. Nathan Obr stated that this is counter to what the operating systems are attempting to do with telling the drive to take a specific action and have that action complete in a specific manner such that impacts to power and other states are managed.

Jim agreed to bring this proposal back to the next meeting.

#### *7.5.1.12 ATA8-ACS Open Issues (e06122) [Stevens]*

Curtis Stevens reviewed the latest revision of his open issues list. Resolutions to the open issues were reflected in the document and Curtis agreed to post a new revision of the open issues list with those resolutions.

Jim Hatfield moved, Curtis Stevens seconded, that issue #186 be incorporated into ATA8-ACS. The motion passed with 9 ayes, 3 nays, and 3 abstentions. Joseph Chen stated that he voted no because he believes that this is a change in behavior from ATA-7 that will make drives non-compliant. Wayne believed that there is a validation that has to occur that cannot be done and makes this an untestable requirement and that it causes command completion without doing anything. Mark Overby stated that he voted no for the same reasons as Joseph and that existing hosts now have to maintain two paths for this behavior.

#### *7.5.1.13 Draft Review [Stevens]*

##### *7.5.1.13.1 Comments on ATA-8 ACS From Reflector*

Curtis Stevens covered comments from the reflector about ATA8-ACS and solicited feedback and incorporated feedback into the open issues list as necessary.

*7.5.1.13.2 Seagate comments on ATA8-ACS (e07139) [Hatfield]*

Curtis Stevens and Jim Hatfield reviewed the remaining comments that Seagate had provided in regards to ATA8-ACS and resolutions were generated for the Seagate comments.

Jim Hatfield requested that everyone research item 194 of the open issues list for the next meeting.

7.5.2 AT Attachment-8 - Parallel Transport (ATA8-APT)

*7.5.2.1 Review of Draft*

This item was deferred due to lack of time.

7.5.3 AT Attachment-8 - Serial Transport (ATA8-AST)

*7.5.3.1 Review of Draft*

Mladen Luksic reviewed the proposed draft of the ATA8-AST document and solicited feedback from the members. Mladen agreed to incorporate the feedback for the next revision.

7.5.4 AT Attachment-8 - Architecture Model (ATA8-AAM)

*7.5.4.1 Letter Ballot Comment Resolution*

No comments have been received, so no review was held.

7.5.5 ATA8 Schedule Review

This item was deferred due to lack of time.

**7.6 ACS-2 Project 2015-D [Stevens]**

7.6.1 INCITS Status

This item was deferred due to lack of time.

7.6.2 Additional device statistics - Usage Length [Chen]

This item was deferred due to lack of time.

7.6.3 Additional device statistics - Errors [Chen]

This item was deferred due to lack of time.

7.6.4 Additional device statistics - Free Fall (e06182) [Chen]

This item was deferred due to lack of time.

7.6.5 Additional device statistics - Temperature [Chen]

This item was deferred due to lack of time.

7.6.6 Additional device statistics - Solid State Media / NV Cache (e06184) [Chen]

Joseph Chen discussed the teleconferences for the device statistics that included the solid state media and NV cache statistics and displayed the proposal that incorporated the discussions from that meeting. The proposal provides statistics that are useful for solid state drives as well as NV caches. Discussion was held about the block and erase size statistics and if they provide useful data to a host or not. In addition, a lengthy discussion was held about the usefulness of statistics on this topic and how differing architectures can

Mark Overby moved, John Gledman seconding, that two teleconference be authorized to discuss flash memory statistics. The motion passed with 9 ayes, 0 nays, and 3 abstentions.

7.6.7 Data Path Protection [Stevens]

This item was deferred due to lack of time.

7.6.8 SCT Capabilities (action codes) (e06174r0) [Bellamy]

This item was deferred due to lack of time.

7.6.9 Reporting RPM, Footprint, Connector Type (E06176r0) [Bellamy]

This item was deferred due to lack of time.

7.6.10 Freefall Feature Set Enhancements (e06120) [Chen]

This item was deferred due to lack of time.

7.6.11 Request Sense for ATA (e07123) [Overby]

*7.6.11.1 TCG Command Error Code Mechanism [Chen]*

This item was deferred to lack of time.

7.6.12 Security Command Update

This item was deferred due to lack of time.

7.6.13 Proactive Reporting and Correcting [Shu]

Frank Shu requested that this be deferred to the next meeting.

**7.7 EDD Erratum**

7.7.1 INCITS Status

This item was deferred due to lack of time.

**7.8 T13 reflector, FTP, and web site setup**

7.8.1 Web Site and Reflector Items

No items were raised that needed committee attention.

**7.9 INCITS Membership and Meeting Attendance Policy**

Dan Colegrove reported no new information was available at this time.

**8. New Business**

**8.1 Solid State Drive**

8.1.1 SSD Identify (e07153r0) [Shu]

Frank Shu presented a proposal to identify solid state device. Frank displayed the results of internal testing that he did that revealed a need for having a way to identify that a device is a solid state device and how to optimize the access to the device. Frank requested that there be a bit to identify it as a SSD device and then characteristics of the flash such as block and page size. This launched a lengthy discussion about the merits of exposing this level of information from the device. Frank stated that there was a desire to avoid defrag operations on an SSD because it impact wear leveling with no value. There was general consensus that this was a good thing. Frank went on to state that they wanted to do more optimization by concatenating data within a block of flash. Other people argued that this only is valuable data if you know the full internal architecture of the device. No resolution was reached on these disputes and Frank agreed to continue work on the proposal and bring to the next meeting.

8.1.2 Notification for Deleted Data (e07154r0) [Shu]

Frank Shu presented a proposal that gives a mechanism for the file system to notify the device that data in an LBA is no longer needed by the host. Frank stated that the desire was to give a notification to the device that it could use that during optimization of how flash block management was done when merging data from other physical blocks. A discussion ensued about what happens if a hard drive receives this command and also what data should a device return if the deleted LBA was read before it was written with new data.

Frank Shu stated that he would revise the proposal and consider the items raised during review.

**8.2 Items from the Reflector**

No items were reported as needing action.

## **9. Liaison Reports**

### **9.1 T10 [Colegrove]**

#### **9.1.1 SCSI to ATA Translation (SAT) Working Group Report**

This item was deferred due to lack of time.

#### **9.1.2 General T10 Report**

This item was deferred due to lack of time.

### **9.2 T11 [Colegrove]**

This item was deferred due to lack of time.

### **9.3 IEEE**

This item was deferred due to lack of time.

### **9.4 Trusted Computing Group [Hatfield]**

This item was deferred due to lack of time.

### **9.5 SFF [Colegrove]**

This item was deferred due to lack of time.

### **9.6 IDEMA [Colegrove]**

This item was deferred due to lack of time.

### **9.7 CFA**

This item was deferred due to lack of time.

### **9.8 Serial ATA IO [Dees]**

This item was deferred due to lack of time.

## **10. Call for Patents**

The Chair explained the patent policy. A document is available from ANSI, "Procedures for the Development and Coordination of American National Standards", at no charge. This document is also on the INCITS web site at [www.incits.org/help/ansi\\_sdo.html](http://www.incits.org/help/ansi_sdo.html). Section 1.2.11 of that document contains the ANSI patent policy.

The Chair then called for patents and/or patent applications that may be necessary to comply with the requirements in T13 standards, draft standards, technical reports, or draft technical reports.

There was no response to the call for patents.

## **11. Review of Action Items**

No action items were recorded.

## **12. Approved Proposals**

ATA8-ACS:

e03124

e07131

e07155

## **13. Meeting Schedules**

### **13.1 Meeting Length**

The June meeting will remain at 3 days.

### 13.2 Authorization of Ad-Hoc Working Groups

Two teleconferences was authorized, to be announced, to discuss flash memory (SSD and non-volatile) statistics.

### 13.3 Long-Term Meeting Schedule

Table 2: 2007 Dates

Date	Location	Host	Contact
June 19-22, 2007	San Jose, CA	NVIDIA	Mark Overby
August 21-24, 2007	Longmont, CO	Seagate	Jim Hatfield
October 23-26, 2007	Fort Myers, FL	CPR Tools	Tony Alvarez
December 11-14, 2007	Redmond, WA	Microsoft	Frank Shu

## 14. Adjournment

Mark Overby moved, Dan Colegrove seconding, that the meeting be adjourned at 1702 Thursday, 26 February 2007. The motion passed with unanimous consent.