

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

Doc. No.: T13/07-176r0

Date: August 24, 2007

Reply to: Mark Overby

To: T13 Membership
From: Mark Overby
Subject: T13 Plenary Meeting (Longmont, CO) -- August 21-23, 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 0905 Tuesday, August 21st, 2007. Dan Colegrove thanked Jim Hatfield and Seagate for hosting.

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.

INCITS Secretariat, Information Technology Industry Council (ITI)

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

Email: incits@itic.org Telephone: 202-737-8888 FAX: 202-638-4922

Policies and Procedures and antitrust guidelines for INCITS are available at the web site at www.incits.org. T13 operates under these policies and procedures augmented by the T13 procedures at the T13 web site at 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 currently 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.

Dan Colegrove noted that the fee structure is changing for next year to \$1200 USD and details of the new fare structure was posted to the T13 website.

Persons with questions or requests regarding membership fees and/or subscriptions for mailings should contact Parthenia Purnell, ITI Standards Operations, at 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 21 organizations.

The number of eligible voting members required for establishing a quorum was 7. 14 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
Bill Martin	Emulex		Mark Overby	NVIDIA
Jim Hatfield	Seagate		Joseph Chen	Samsung
Steven Wells	Intel		Curtis Stevens	Western Digital
Sumit Puri	Fujitsu		Yoni Shternhell	SanDisk
Dan Colegrove	Hitachi GST		Aaron Wilson	ST Microelectronics
Wayne Bellamy	HP		Wonju Lee	Samsung
Patrick Hery	Toshiba		Mladen Luksic	Western Digital
Ken Foust	Kionix		Nathan Obr	Microsoft
Frank Shu	Microsoft		Hale Landis	Broadcom
John Geldman	Lexar Media		Duncan Penman	Western Digital
Joe Scanlon	AMD		Samuel Oh	Samsung

4. Approval of the minutes from the previous T13 plenary meeting (e07164r0)

Dan Colegrove moved, Mark Overby seconded, that the minutes be approved. The motion passed with unanimous consent.

5. Document Distribution

No documents were distributed by hard copy.

6. Review of Previous Action Items

No action items were recorded from the previous meeting.

7. Old Business

7.1 ATA/ATAPI-7: 1532D

7.1.1 ISO Status

Mark Overby stated that Volumes 2 and 3 had been provided to ISO and were being processed. Updated copies had been provided to the ISO WG editor.

7.1.2 ATA/ATAPI-7 Amendment [Overby]

7.1.2.1 INCITS Status

Dan Colegrove stated that the amendment is going through management review and public review with INCITS.

7.2 HBA Amendment 1

Dan Colegrove stated that the amendment is going through management review and public review with INCITS.

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 stated that the amendment is going through management review and public review with INCITS.

7.5 ATA/ATAPI-8 Projects

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

7.5.1.1 *Command Mapping (07173r0)*

Curtis Stevens reviewed a proposal for how command mapping could be enhanced for ATA8-ACS, ATA8-APT, and ATA8-AST. Comments were given to Curtis on suggestions for improvement. Curtis agreed to consider these suggestions and bring a revision to a future meeting.

7.5.1.2 *Letter Ballot Comment Resolution (e07158r0) [Stevens]*

Dan Colegrove noted that the letter ballot failed and the letter ballot results are found in document e07012.

Curtis Stevens led a review of the letter ballot comments and proposed resolutions to those comments. Curtis noted that he was going to address the issues that were controversial or on which there were conflicting comments first. He noted that people who submitted letter ballot comments on editorial items should examine the resolutions that he had posted to this point to determine if the resolution was acceptable.

Curtis requested a straw poll as to if "devices implementing the general feature set" should be replaced with "ATA device". There were 6 in favor of leaving it as is and 6 in favor of changing the text. Curtis left the issue unresolved for further discussion.

Curtis Stevens moved, John Goldman seconded, that the DCO set table be changed to only say the zero indicates "when device configuration identify reports this feature as changeable". The motion failed with 0 ayes, 5 nays, and 7 abstentions.

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

7.5.2.1 *Review of Draft*

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

7.5.3.1 *Review of Draft*

Mladen Luksic reviewed the latest proposed draft of ATA8-AST that maps the command parameters from ATA8-ACS into SATA FIS fields as well as mapping ATA8-AAM models into various components of the SATA documentation. Comments and suggestions for improvement were given to Mladen for incorporation and Mladen agreed to consider this requests and made some changes during the review of the document. Mladen noted that Curtis may be taking over as editor of this document for future revisions.

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

7.5.4.1 *Letter Ballot Comment Resolution*

There were no new comments received on ATA8-AAM for inclusion.

7.5.5 ATA8 Schedule Review

No schedule review was held due to a lack of time.

7.6 ACS-2 Project 2015-D [Stevens]

7.6.1 INCITS Status

Dan Colegrove reported that there was no new status to report.

7.6.2 SCT AV Zone Proposal (e07169r0) [Colegrove]

Dan Colegrove reviewed his proposal to add AV zone capability to the SCT command set. Dan received feedback and agreed to prepare a new revision of the proposal for the next meeting.

7.6.3 Additional device statistics - Usage Length (e06180r2) [Chen]

This item was deferred to the next meeting.

7.6.4 Additional device statistics - Errors [Chen]

This item was deferred to the next meeting.

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

This item was deferred to the next meeting.

7.6.6 Additional device statistics - Temperature [Chen]

Joseph Chen briefly discussed his temperature statistics proposal and stated that he felt that it was getting close to being ready for approval.

7.6.7 Additional device statistics - Solid State Media / NV Cache (e06184r6) [Chen]

Joseph Chen reviewed the latest revision of the proposal for device statistics for solid state devices. Samsung gave a presentation on the nature of failures of NAND memory cells to explain why they are seeking some of the statistics for this proposal. There was discussion about tracking erase failures versus program failures and what is possible and when the failures should be tracked. There was further discussion about how these counters are intended to be used. Frank Shu stated that he wanted to use these counters to help determine the drives health. John Goldman noted that each device will have a different number for the erase or program failures before data is at risk. Dan Colegrove and Jim Hatfield both stated that they could not support identifying when that number is too high as that reveals too much data about the internal implementations and will just lead to devices not stating the number accurately.

Further discussion was held about tracking the number of LBA's that have failed. Multiple parties noted that the raw number of LBA's that have failed is not useful data because without knowing the exact location and type of the failures the data has no context. There was general agreement that the gas gauge approach of reporting the total number of spares available is a better prediction of capability and more closely matches what hard drives report today. It was agreed that further discussion was needed during future teleconferences that were authorized (see 13.2).

7.6.8 Transport Statistics [Chen] (e07168r1)

Joseph Chen reviewed a device statistics proposal for transport statistics. It was discussed how useful just tracking the D2H FIS count over a lifetime. Mark Overby noted that depending on the environment a large number of D2H FIS's may be normal. Mladen Luksic noted that since D2H FIS count was required for PHY event counters, that statistic is already being tracked. Joseph thought that two statistics would be useful one to track D2H lifetime and a second to track ASR events. There was general consensus that this would be useful. John Goldman noted that by themselves the lifetime counters are not as useful and could be misleading because it becomes difficult or impossible to track if the problem that is causing the counter to increment has been fixed or not. Discussion then ensued about having a short term tracking counter that could be examined to see if the problem identified by the lifetime counters was currently active. Joseph agreed to examine the feedback that he was given and revise the proposal for the next meeting.

7.6.9 Data Path Protection [Stevens]

This item was deferred to the next meeting.

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

This item was deferred to the next meeting.

7.6.11 Reporting Footprint (e06161r1) [Bellamy]

Wayne Bellamy presented his proposal to report form factor of the device and the cache size of the device. During discussion of the proposal it was identified that there is significant complexity to identifying form factor because a given specification may have multiple options for that form factor and that form factors are constantly evolving.

7.6.12 Freefall Feature Set Enhancements (e06120r0) [Chen]

This item was deferred to the next meeting due to a lack of time.

7.6.13 Request Sense for ATA (e07123r3) [Overby]

Mark Overby presented his revised proposal for a request sense for ATA. Jim Hatfield provided comments to clarify the behaviors in certain conditions. Mark agreed to revise the proposal and did so on the fly. Jim Hatfield moved, Joseph Chen seconded, that e07123r3 as revised (r4) be incorporated in ATA8-ACS. The motion passed with 6 ayes, 1 nay, and 0 abstentions.

7.6.14 Security Command Update [Chen/Hatfield]

This item was deferred to the next meeting.

7.6.15 Remove Input/Output Structures (e07134) [Bellamy]

Wayne Bellamy asked that this be removed from the agenda for future meetings.

7.6.16 Proactive Reporting and Correcting [Shu]

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

7.6.17 Set Features Grant Permissions (e07121r3) [Hatfield]

Jim Hatfield presented the latest revision of his proposal to create a mechanism to exchange policy information between the device and host.

7.6.18 Solid State Drive Proposals

7.6.18.1 SSD Identify (e07153r1) [Shu]

Frank Shu reviewed revision one of his proposal to add a mechanism to specifically identify solid-state drives and the optimal write size for the device. A lengthy discussion was held about what the proposal was trying to accomplish. This led to a discussion about if new words in IDENTIFY DEVICE was necessary. Nathan Obr suggested that the purpose of the proposal was to give guidance to the operating system what the nominal allocation (cluster) operation should be. It was then suggested that the existing physical and logical sector ratio and sizing could be used. Joseph Chen stated that he believed that the existing definitions of the physical and logical sectors would not work. John Goldman suggested that those definitions probably need to be reworked for solid-state devices regardless of this proposal. Frank agreed to consider the feedback and bring a revision of the proposal to the next meeting.

7.6.18.2 Dataset Management (e07154) [Shu]

Frank Shu and Nathan Obr presented a proposal for giving information to the device about the usage of a given logical block address range so that the device could optimize behavior for how sectors are managed. Various options for hints that the OS could give to the device were presented and discussed. There was significant concern that large numbers of logical block ranges could require significant operating memory for the drive controllers and that, similar to NV cache, that the device needs to indicate that there is no more room for additional LBA ranges. In addition, for devices that can move from system to system it was requested that there be an option to clear the hints for the device so that the new host can track from scratch. This would also apply if the device were being formatted with a new file system. Frank and Nathan took input and will bring a new revision of the proposal to a future meeting.

7.6.19 Change Host Vendor Specific to Scratch Pad (e07159r0) [Stevens]

This item was deferred to the next meeting.

7.6.20 Write Barrier [Obr]

Nathan Obr presented a proposal in dealing with staging of writes out of the cache. Nathan showed the use by file systems and applications of how they deal with journaling and maintaining consistency of data. He also stated that the goal was to provide a mechanism that would have a minimal impact on performance such that the existing problems with FUA and flush cache operations would be avoided. Nathan explained the proposal in great detail as well as the problem set being solved. Feedback was provided to Nathan about suggestions for additions and improvements to the write barrier operations and Nathan agreed to take this feedback and revise the proposal for a future meeting.

7.7 EDD Erratum

7.7.1 INCITS Status

Dan Colegrove stated that the erratum was being prepared for INCITS executive board and public review.

7.8 T13 reflector, FTP, and web site setup

7.8.1 Web Site and Reflector Items

Mark Overby noted that the option to remember your login on the website does not seem to be functioning. Jim Hatfield noted that if, when sending items to the reflector, your e-mail server changes your e-mail address to something other than what was registered the mail will be rejected.

7.9 INCITS Membership and Meeting Attendance Policy

Dan Colegrove noted that the membership fees for 2008 had been revised and encouraged people to view the documents posted to both the T10 and T13 sites describing the new membership and fee structure.

8. New Business

8.1 Items from the Reflector

There were no items from the reflector that needed to be addressed.

9. Liaison Reports

9.1 T10 [Colegrove]

9.1.1 SCSI to ATA Translation (SAT) Working Group Report

Mark Overby requested on behalf of the SAT WG that all T13 hosts starting in December that Monday be allocated for the T10 SAT WG.

9.1.2 General T10 Report

This item was deferred due to a lack of time.

9.2 T11 [Colegrove]

This item was deferred due to a lack of time.

9.3 IEEE

This item was deferred due to a lack of time.

9.4 Trusted Computing Group [Hatfield]

This item was deferred due to a lack of time.

9.5 SFF [Colegrove]

This item was deferred due to a lack of time.

9.6 IDEMA [Colegrove]

This item was deferred due to a lack of time.

9.7 CFA [Geldman]

John Geldman agreed to become the CFA liaison to T13.

9.8 Serial ATA IO [Hatfield]

Jim Hatfield informed the committee that the SATA-IO organization had designated him as the new liaison to T13.

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. 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

1. Dan Colegrove to check with INCITS to see if ANSI patent policy letters have been received by INCITS for material incorporated into ATA8-ACS by companies who declared patents during previous call for patents.

12. Approved Proposals

ACS-2:

e07123r4 - REQUEST SENSE for ATA

13. Meeting Schedules

13.1 Meeting Length

The October meeting will remain at 3 days.

13.2 Authorization of Ad-Hoc Working Groups

Curtis Stevens moved, Dan Colegrove seconded, that a face to face working group, hosted by Western Digital in Lake Forest, CA, for ATA8-ACS letter ballot review be authorized for September 25th (1100 - 1700) and September 26th / September 27th (0900 - 1700). The motion passed with unanimous consent.

Dan Colegrove moved, Mark Overby seconded, that four teleconferences be authorized as follows: September 10th, 1p - 4p PT for data set management; September 14th, 1p - 4p for device statistics; October 15th from 1p - 4p PT for ATA8-APT; and October 18th from 1p - 4p PT for data set management. The motion passed with unanimous consent.

13.3 Long-Term Meeting Schedule

Table 2: 2007 Dates

Date	Location	Host	Contact
October 23-26, 2007	Fort Myers, FL	CPR Tools	Wally Bretzer
December 11-14, 2007	Redmond, WA	Microsoft	Frank Shu

Table 3: 2008 Dates

Date	Location	Host	Contact
February 19-22, 2008	Lake Forest, CA	Western Digital	Curtis Stevens
April 22-25, 2008	Las Vegas, NV	Hitachi GST	Dan Colegrove
June 24-27, 2008	Longmont, CO	ST Microelectronics	Aaron Wilson
August 18-22, 2008	San Jose, CA	Samsung	Joseph Chen
October 21-24, 2008	San Jose, CA or Las Vegas, NV	Fujitsu	Sumit Puri
December 16-19, 2008	Austin, TX or Seattle, WA	NVIDIA	Mark Overby

14. Adjournment

Mark Overby moved, Dan Colegrove seconding, that the meeting be adjourned at 1700 Thursday, 23 August 2007. The motion passed with unanimous consent.