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

Doc. No.: T10/05-387r0

Date: October 21, 2005
Reply to: John Lohmeyer

To: T10 Membership
From: Mark Overby
Subject: SAT Working Group Meeting -- October 17, 2005
          Las Vegas, NV

Agenda

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Results of Meeting

1. Opening Remarks

John Lohmeyer called the meeting to order at 0900 October 17, 2005. John thanked Sumit Puri of Fujitsu for
hosting the meeting.

2. Approval of Agenda

The draft agenda was approved as revised.

3. Attendance and Membership

Attendance at working group meetings does not count toward minimum attendance requirements for T10 member-
ship. Working group meetings are open to any person or organization directly and materially affected by T10's
scope of work. The following people attended the meeting:

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                 Name                     S          Organization
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    Mr. Kenneth Hirata                    A   Emulex
    Mr. Ralph O. Weber                    P   ENDL Texas
    Mr. Wayne Bellamy                     V   Hewlett Packard Co.
    Mr. Dan Colegrove                     P   Hitachi Global Storage Tech.
    Mr. Robert Sheffield                  P   Intel Corp.
    Mr. Steve Johnson                     V   LSI Logic Corp.
    Mr. John Lohmeyer                     P   LSI Logic Corp.
    Mr. Owen Parry                        V   LSI Logic Corp.
    Mr. Mark Evans                        P   Maxtor Corp.
    Mr. Frank Shu                         V   Microsoft
    Mr. Mark Overby                       P   Nvidia Corp.
    Mr. Jim Hatfield                      V   Seagate Technology
    Mr. William Martin                    P   Sierra Logic, Inc.
    Mr. Curtis Stevens                    P   Western Digital


    14 People Present


    Status Key:  P    -   Principal
                 A,A# -   Alternate
                 AV   -   Advisory Member
                 L    -   Liaison
                 V    -   Visitor
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4.   Old Business

4.1   SAT Work Items List (04-391r9) [Sheffield]

Bob Sheffield reviewed the current revision of the work list for SAT. Bob noted that the power mode states should be moved to the completed section of the work item list. A discussion ensued about having a face to face meeting or a webex call to discuss the SAT draft after letter ballot. The consensus was that the February T13 meeting was too soon. Further discussion suggested hosting a meeting at an airport for a day to do review. A straw poll was held and 7 people were in favor of a face to face and 2 were in favor of doing webex. Mark Overby agreed to attempt to schedule a meeting at DIA (Denver International Airport) for Feb. 28th from 1030 to 1800.

4.2   SAT - SEND DIAGNOSTIC Command and Self Test Results (05-245r0) [Bellamy]

Wayne Bellamy reviewed his proposal for a translation of SEND DIAGNOSTIC and how to report self test results. Wayne received feedback from Curtis Stevens, Jim Hatfield, and Dan Colegrove about how to obtain the various results that are necessary for the translation. Jim felt that Wayne's proposal was very close to completion and that only minor revisions needed. Wayne reviewed each of the translation items for which option to use and made changes inline to incorporate those changes. Jim pointed out that the ASC translations cannot use the standard register translations because self-test errors are not reported through the ATA registers. Jim and Curtis suggested using the self-test status byte and creating a small translation in this proposal to define a standard ASC and ASCQ to use. Wayne agreed to bring revision 1 to the November meeting.

4.3   Microsoft Reservations Issue [Overby]

Mark Overby led a discussion about the RESERVE and RELEASE commands that will be required by Microsoft for Vista logo requirements. He noted that in a single initiator environment, there is a clear translation. However, for the multi-initiator environment (e.g. SAS environment with expanders and multiple initiators) there is not a clear translation because it requires SATL to SATL communication (since the environment can contain multiple initiators) and

there is no corresponding ATA command (or set of commands). John Lohmeyer agreed that in a homogeneous environment it could be possible to solve this problem, however there would have to be standardization in order for this work across multiple SATL suppliers. Several possibilities were discussed by attendees. Mark stated that he was working on one possible translation, but this would be SAT-2 work item.

5. New Business

5.1 SAT: Control mode page translation (05-359r1) [Overby]

Mark Overby reviewed revision 1 of his proposal for a control mode page translation. Ralph Weber provided comments that the formula needed to be changed to match T10 styles and that the steps need to explicitly state where the data is coming from. Mark made those changes inline and reviewed with the group. Wayne Bellamy also noted that footnote b in the table seemed to be saying the same thing twice. Mark noted that the intent of that footnote was to indicate that if a SATL only wanted to support the mandatory behavior than the changeable is a no. However, if the optional (described) behavior was supported then the field could be changeable. Discussion ensued and it was generally agreed that the footnote was accurate and did not need to be changed. Bill Martin pointed out that the field name was wrong for the extended self-test completion time (it read extended self completion time). Mark made that change.

Mark reviewed the changes with the group made in this proposal. Mark Overby moved, Jim Hatfield seconded, that 05-359r1, as modified, be recommended for inclusion into SAT. The motion passed with unanimous consent.

5.2 SAT comparison of SCSI and ATA queuing (05-364r0) [Weber]

Ralph Weber reviewed his proposal to create preamble text to describe the differences between how SCSI and ATA handle various aspects of command queuing. Jim Hatfield reviewed his comments from the teleconference about the proposal. Jim requested that a row be added to the table that describes how non-queued commands are handled when there are queued commands outstanding. Ralph added a row and Curtis Stevens and Jim provided text to indicate how the queues are aborted if non-queued commands are sent while queued commands are outstanding.

Jim also requested clarification about what queue participation meant. Discussion ensued between Ralph, Curtis, and Jim about how to indicate how queue tags are managed and how a full queue is managed. Ralph added text to indicate the queue depth

Ralph Weber moved, Mark Overby seconded, that 05-364r0 as revised be incorporated into SAT. The motion passed with unanimous consent.

5.3 SAT - MOST RECENT TEMPERATURE READING for Informational Exceptions log page (05-385r0) [Bellamy]

Wayne Bellamy reviewed his proposal to add temperature sensing information to the informational exceptions log page translation. Wayne stated that his intention is to just provide the same level of information that is available in SCSI today using information available at the ATA interface. Curtis Stevens noted that SCT provides the temperature. Jim Hatfield noted that the T13 committee is considering a proposal to make public the SMART attributes that would contain temperature data. This would allow Wayne to obtain the information from SMART READ DATA command. Wayne will continue working on his proposal and will look at incorporating the SCT mechanism.

6. Review of (SAT) Working Draft

Bob Sheffield lead a review of revision 6 of the SAT working draft. Ralph Weber noted to Bob that are some problems with the textual formatting of the table of contents. A discussion revolved around the density code field and why it was defined for byte 0 for SPC, but not for SBC-2. Ralph pointed out the text in SPC-3 that says (in two different places) that SBC-2 devices do not use the SPC-3 definition of the block mode parameters and instead

always use the command set defined mode parameter. Ralph pointed out during review that the text for TEST UNIT READY is fairly broken and needs work. Mark Overby agreed to do a proposal to correct this translation.

A length discussion ensued about the ATA translation column in both the mode parameters and log parameters tables. The discussion was centered around what, if any, value that that column provided. In addition, there was a discussion held about why mode pages for which there is no translation defined were still listed in the column. There was general agreement that those entries should be removed. To provide guidance, Bob Sheffield asked for a straw poll on if the ATA translation column should be deleted from the mode page and log page tables. 10 were in favor and 0 opposed.

Another lengthy discussion was held about the DXCPT field and the behavior on if SMART should be disable when the field is set to zero. Curtis and Jim both pointed out to Wayne that the disabling of SMART also disables other SMART related commands that are used for other translations. Attendees also discussed why SMART may want to be disabled (e.g. performance) Curtis agreed to bring a proposal in to eliminate this restriction. Bob requested a straw poll on if Clause 11 should be removed from normative test. 8 people were in favor of removal and 0 opposed. A second straw poll was requested by Steve Johnson on if the text should be put into an informative annex. 3 people were in favor, 5 opposed.

Other editorial suggestions were provided to the editor for incorporation.

7.   Review of Recommendations

The following items were recommended to the plenary for inclusion into SAT:

05-364r1 SAT comparison of SCSI and ATA queuing
05-359r2 SAT: Control mode page translation

8.   Meeting Schedule

A SAT Working Group meeting is scheduled for:

Tuesday November 8, 2005 from 9:00 a.m. to 6:00 p.m. in Austin, TX at the Driskill, hosted by Dell.

Monday December 12, 2005 from 9:00 a.m. to 5:00 p.m. in Las Vegas, NV at the Golden Nugget, hosted by HGST

9.   Adjournment

The meeting was adjourned at 1630 October 17, 2005.