

Accredited Standards Committee*
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Date: November 9, 1999

Reply to: John Lohmeyer

To: T10 Membership
From: Ralph Weber / John Lohmeyer
Subject: SCSI Protocol Working Group Meeting -- November 3, 1999
Monterey, CA

Agenda

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2. Approval of Agenda
3. Attendance and Membership
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 - 4.2 SCSI on Scheduled Transfer (SST) (99-276) [Woelz]
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 - 4.4 Comments on SAM multi-port model (rev 8 vs. rev 11) (99-265) [Ericson/Weber]
 - 4.5 SAM-2 task attribute description errors (Reflector message) [Houlder]
 - 4.6 Project Proposal for SCSI Architecture Model - 3 (SAM-3) (99-293) [Weber]
 - 4.7 Project Proposal for SCSI Primary Commands - 3 (SPC-3) (99-294) [Weber]
 - 4.8 SVP Overview (99-316) [Gardner]
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 - 5.3 Restricting Mode Page Code Usage (99-229) [Weber]
 - 5.4 Adding Read/Write Attribute commands to SPC-2 (99-148) [Jerman]
 - 5.5 A detailed proposal for access control in SPC-2 (99-245) [Hafner]
 - 5.6 List lengths that exceed maximum allocation length (99-258) [Penokie]
 - 5.7 Beyond two terabytes (99-259) [Penokie]
 - 5.8 Description Lengths for 5D ASC/ASCQs (99-266) [Weber]
 - 5.9 Changes made while incorporating Logical Unit Self-tests (99-285) [Weber]
 - 5.10 Project Proposal for SCSI Block Commands - 2 (SBC-2) (99-292) [Weber]
 - 5.11 READ/WRITE BUFFER Behavior During Domain Validation (99-306) [Lamers]
 - 5.12 SCSI Socket Services (99-251, 99-252, 99-253, 99-254, 99-255, 99-256, 99-257) [Parker]
 - 5.13 Project proposal for object-oriented disk command set (OSD) (99-312) [Houlder]
 - 5.14 Proposal to Support Partial Loading & Unloading (99-263) [Suhler]
 - 5.15 Commands Cleared by Another Initiator (99-311) [Binford]
 - 5.16 Operation Code Assignments [Weber]
6. New Business
 - 6.1 Extended Addressing for SPI-4 (99-250) [Monia]
7. Meeting Schedule
8. Adjournment

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Results of Meeting

1. Opening Remarks

John Lohmeyer, the T10 Chair, called the meeting to order at 9:00 a.m., Wednesday November 3, 1999. He thanked Larry Lamers of Adaptec for hosting the meeting.

As is customary, the people attending introduced themselves and a copy of the attendance list was circulated.

2. Approval of Agenda

The draft agenda was approved with the following additions and changes:

- 5.14 Proposal to Support Partial Loading & Unloading (99-263) [Suhler]
- 5.15 Commands Cleared by Another Initiator (99-311) [Binford]
- 6.1 Extended Addressing for SPI-4 (99-250) [Monia]

The following agenda items were added during the course of the meeting:

- 4.10 Task Set Full Clarification (99-343) [Snively]
- 5.16 Operation Code Assignments [Weber]

3. Attendance and Membership

Attendance at working group meetings does not count toward minimum attendance requirements for T10 membership. 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:

| Name | S | Organization | Electronic Mail Address |
|------------------------|---|------------------------------|------------------------------|
| Mr. Lawrence J. Lamers | P | Adaptec, Inc. | ljlamers@ieee.org |
| Mr. Mark Delsman | A | Adaptec, Inc. | mdelsman@corp.adaptec.com |
| Mr. Charles Monia | V | Adaptec, Inc. | cmonia@corp.adaptec.com |
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| Mr. Matt Wakeley | A | Agilent Technologies | matt_wakeley@agilent.com |
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| Mr. Bill Galloway | P | BREA Technologies, Inc. | billg@breatech.com |
| Mr. Dennis Lang | A | Circuit Assembly Corp. | dennisl@circuitassembly.com |
| Mr. Robert C. Elliott | P | Compaq Computer Corp. | Robert.Elliott@compaq.com |
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| Mr. Arthur Bizley | V | CTS Interconnect | arthur.bizley@is.ctscorp.com |
| Mr. Titkwan Hui | V | Dallas Semiconductor | tk.hui@dalsemi.com |
| Mr. Dave Ford | O | Data General / Clariion | dford@orca.com |
| Mr. Keith W. Parker | V | Diogenes SCSI | diogenes@europa.com |
| Mr. Roger Cummings | P | Distributed Processing Tech. | cummings_roger@dpt.com |
| Mr. Mike Taylor | O | Exabyte Corp. | miketa@exabyte.com |
| Mr. Eugene Lew | P | Fujitsu | elew@fcpa.fujitsu.com |
| Mr. Tim Mackley | A | General Dynamics | timothy.a.mackley@gd-is.com |

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| Mr. Stewart Wyatt | A# | Hewlett Packard Co. | stewart_wyatt@hp.com |
| Mr. Steve Jerman | V | Hewlett Packard Co. | steve_jerman@hp.com |
| Mr. Thomas J. Kulesza | P | Honda Connectors | tkulesza@hondaconnectors.com |
| Mr. George O. Penokie | P | IBM Corp. | gop@us.ibm.com |
| Dr. Jim Hafner | V | IBM Corp. | hafner@almaden.ibm.com |
| Mr. Carlos Fuente | V | IBM Corp. | carlos_fuente@us.ibm.com |
| Mr. Dennis Moore | P | KnowledgeTek, Inc. | dmoore@ix.netcom.com |
| Mr. John Lohmeyer | P | LSI Logic Corp. | lohmeier@t10.org |
| Mr. Ralph O. Weber | A | LSI Logic Corp. | roweber@acm.org |
| Mr. Charles Binford | V | LSI Logic Corp. | Charles.Binford@lsil.com |
| Mr. R. Kent Koening | V | Myricom | kent@myri.com |
| Mr. Edward A. Gardner | P | Ophidian Designs | eag@ophidian.com |
| Mr. Mark Evans | P | Quantum Corp. | mark.evans@quantum.com |
| Mr. James McGrath | A# | Quantum Corp. | JMCGRATH@QNTM.COM |
| Mr. Gerald Houlder | A | Seagate Technology | gerry_houlder@notes.seagate.com |
| Mr. Paul Suhler | V | Seagate Technology | paul_a_suhler@notes.seagate.com |
| Mr. Dave Anderson | V | Seagate Technology | dave_anderson@notes.seagate.com |
| Mr. Yoshihisa Takayama | V | Sony Corporation | yoshihisa_takayama@strg.sony.co.jp |
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| Mr. Erich Oetting | P | Storage Technology Corp. | erich_oetting@stortek.com |
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| Mr. Robert N. Snively | P | Sun Microsystems Computer Co | bob.snively@sun.com |
| Mr. Paul D. Aloisi | P | Texas Instruments | Paul_Aloisi@ti.com |
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| Mr. Paresh Sheth | A# | Texas Instruments | paresh.sheth@ti.com |
| Mr. Jeffrey L. Williams | P | Western Digital Corporation | Jeffrey.L.Williams@wdc.com |

45 People Present

Status Key: P - Principal
 A,A# - Alternate
 O - Observer
 L - Liaison
 V - Visitor

4. SCSI Architecture Model and Protocol Topics

4.1 SAM-2 Review [Weber]

Ralph Weber gave an overview of his intentions for the multi-port task management proposal. Several of those present objected to the concepts for target reset, specifically it was felt that target reset should affect all ports. Ralph agreed to follow the group's advice in drafting the proposal.

4.2 SCSI on Scheduled Transfer (SST) (99-276) [Woelz]

In the absence of Don Woelz, no action was taken on this proposal.

4.3 SAM-2 TASK SET FULL Clarifications (99-233) [Weber]

Ralph Weber requested that this item be removed from the agenda.

4.4 Comments on SAM multi-port model (rev 8 vs. rev 11) (99-265) [Ericson/Weber]

Ralph Weber and George Penokie asked that discussion of this topic be deferred to the next meeting.

4.5 SAM-2 task attribute description errors (Reflector message) [Houlder]

Gerry Houlder asked the group to provide input on the relationship between the Abort Task Set task management function and Contingent Allegiance. Details of Gerry's concern (copied from the original reflector message) are as follows:

The description of CLEAR TASK SET specifically includes the sentence "A contingent allegiance (NACA=0) shall be cleared...". The description of ABORT TASK SET doesn't include this sentence.

When I referred back to SCSI-2, both the ABORT and CLEAR QUEUE messages (and other things) are listed as events that clear contingent allegiance. I believe the ABORT TASK SET description in SAM should include the sentence about clearing contingent allegiance.

The group interpreted the issue as an error in the content of SAM-2 and supported copying the CLEAR TASK SET text to the ABORT TASK SET description, with editorial changes as necessary. Ralph Weber agreed to make this change in the next revision of SAM-2.

4.6 Project Proposal for SCSI Architecture Model - 3 (SAM-3) (99-293) [Weber]

Ralph Weber presented a project proposal for SAM-3 and immediately noticed a typographical error. Jeff Williams expressed concerns that there should be no need for a SAM-3. Ralph Weber volunteered to be the project editor for SAM-3. On a vote of 12:2:6, the working group recommended T10 approval of 99-293r1 (r0 as revised) as a new project proposal for SAM-3.

4.7 Project Proposal for SCSI Primary Commands - 3 (SPC-3) (99-294) [Weber]

Ralph Weber presented a project proposal for SPC-3. George Penokie asked that the proposed work on the processor command set be removed from the proposal and Ralph agreed. Ralph Weber volunteered to be the project editor for SPC-3. In the absence of any objections, the working group unanimously recommended T10 approval of 99-294r1 (r0 as revised) as a new project proposal for SPC-3.

4.8 SVP Overview (99-316) [Gardner]

Ed Gardner presented an overview (99-316) of the proposed SCSI on Virtual Interface (SCSI on VI Protocol, or SVP) standards development project (99-246r1). The presentation included an introduction to VI. Ed reported that the first draft of SVP will be available in late January, and he requested time during the March T10 meeting week to discuss SVP.

4.9 Review of Op Code Assignments [Weber]

As this is a command set topic, it was covered under the newly added item 5.16.

4.10 Task Set Full Clarification (99-343) [Snively]

Bob Snively presented a proposal to define Task Set Full as only being returned when the target has a task outstanding for the initiator to which the Task Set Full status is being returned. Gerry Houlder and Jeff Williams objected because the new wording outlaws their current implementations. Concerns were raised about the interaction of this proposal with the new status proposed in item 5.15. Bob agreed to bring a revised draft of the proposal to the next meeting, unless other actions make that unnecessary.

5. Command Set Topics

5.1 Device locks command (98-225) [Houlder]

Gerry Houlder reported that work on the Device Locks command will proceed toward a review of the proposal at the March working group meeting.

5.2 MRIE behavior with TEST bit asserted (99-208) [Elliott]

Rob Elliott described a difference between SSC and SPC-2 regarding the test mode for informational exceptions. The group requested a minor change and Rob agreed to provide a new revision. In the absence of any objections, the group unanimously recommended that 99-208r2 (r1 as revised) for inclusion in SPC-2.

5.3 Restricting Mode Page Code Usage (99-229) [Weber]

Ralph Weber requested that this item be removed from the agenda.

5.4 Adding Read/Write Attribute commands to SPC-2 (99-148) [Jerman]

Steve Jerman reviewed key aspects of the detailed Read/Write Attributes proposal (99-148r3). The group requested several changes and Steve agreed to prepare a revised proposal for review via electronic mail by the end of the month.

5.5 A detailed proposal for access control in SPC-2 (99-245) [Hafner]

Jim Hafner presented a revised overview (99-278r1) of access controls proposal. He noted that the detailed revised proposal is available in 99-245r1. Questions were raised about how access controls are managed and several individuals agreed to contact Jim directly.

5.6 List lengths that exceed maximum allocation length (99-258) [Penokie]

George Penokie presented a proposal to modify general behavior for allocation lengths in SPC-2 and the handling of allocation length in READ DEFECT DATA (10) in SBC-2. The group recommended changes in the proposal and George agreed. In the absence of any objections, the group recommended that 99-258r2 (r1 as revised) be approved for inclusion in SPC-2 and SBC-2.

5.7 Beyond two terabytes (99-259) [Penokie]

George Penokie presented a proposal for specific changes to support devices with more than two terabytes of data. Difficulties were encountered assigning operation codes to the proposed new commands. Gerry Houlder noted that the proposal must cover the contents of the reservations conflicts table in the SPC-2 device model clauses. George agreed to prepare a revised proposal for the next working group meeting.

The group agreed to add an item to future agendas to discuss how to handle the dwindling number of assignable operation codes.

5.8 Description Lengths for 5D ASC/ASCQs (99-266) [Weber]

Ralph Weber presented a request to change the wording of the descriptions for several ASC equals 5Dh codes. The group requested a change in one of the proposed new wordings and Ralph agreed. In the absence of any objections, the group unanimously recommended approval of 99-266r2 (r1 as revised) for inclusion in SPC-2.

5.9 Changes made while incorporating Logical Unit Self-tests (99-285) [Weber]

Ralph Weber reviewed the changes he made while incorporating the Logical Unit Self-Test proposal in SPC-2 revision 12. Concerns were raised and later withdrawn about the added complexity introduced to allow SES functions to proceed while a background self test is in progress. Ralph noted that several individuals have uncovered places where additional editorial changes are needed since revision 12 was finished, and these changes will be made in the next SPC-2 revision.

The group discussed the effect of an ABORT TASK SET task management function on a background self test. It was agreed that the effect should be identical to the effect on a REWIND command with the IMMED bit set, which is no effect at all. The group agreed that this should be described in the definitions of the ABORT TASK SET and CLEAR TASK SET task management functions, and Ralph agreed to draft a proposal for specific changes.

5.10 Project Proposal for SCSI Block Commands - 2 (SBC-2) (99-292) [Weber]

Ralph Weber presented a project proposal for SBC-2. Jeff Williams asked that the proposed work on read and write commands be removed from the proposal and Ralph agreed. George Penokie reported that Gene Milligan has volunteered to be the project editor for SBC-2. In the absence of any objections, the working group unanimously recommended T10 approval of 99-292r1 (r0 as revised) as a new project proposal for SBC-2.

5.11 READ/WRITE BUFFER Behavior During Domain Validation (99-306) [Lamers]

Larry Lamers presented a proposal for changes in the behavior of the read and write buffer commands' echo buffer function in the presence of requests from multiple initiators. The group requested several changes in the proposal and Larry agreed to present a revised draft of the proposal to the plenary for approval.

5.12 SCSI Socket Services (99-251, 99-252, 99-253, 99-254, 99-255, 99-256, 99-257) [Parker]

Keith Parker reported on activities in support of socket services.

5.13 Project proposal for object-oriented disk command set (OSD) (99-312) [Houlder]

Gerry Houlder presented a project proposal for Object Based Storage Devices Command Set (OSD). The group discussed details of the proposal. There was discussion of the mechanisms by which close liaison would be maintained with the Storage Networking Industry Association.

Ed Gardner stated that he planned to invoke the two-week rule regarding the proposal during the plenary meeting. Gerry Houlder asked that the proposal be recommended for consideration at the plenary. On a vote of 16:1:3, the working group recommended that the plenary approve the OSD project proposal.

5.14 Proposal to Support Partial Loading & Unloading (99-263) [Suhler]

Paul Suhler described a proposal to allow loading media sufficiently to read the media auxiliary memory without loading the media to the point of accessibility. Ralph Weber recommended changes to the proposed ASC/ASCQ values. Paul agreed to prepare a specifically worded proposal for the next working group meeting.

5.15 Commands Cleared by Another Initiator (99-311) [Binford]

Charles Binford presented an overview of a proposal to add a new status code that targets would return as status on tasks that have been cleared by a task management function from another initiator. Jeff Williams and Gerry Houlder questioned the relationship between the proposed status and the 'commands cleared by another initiator' unit attention case.

5.16 Operation Code Assignments [Weber]

Ralph Weber reviewed operation code assignments with the group and agreed to reflect the agreed operation code assignments in the next revision of SPC-2.

6. New Business

6.1 Extended Addressing for SPI-4 (99-250) [Monia]

This item was carried over from the Physical Working Group meeting (minutes 99-309).

Charles Monia reviewed the changes in the proposal made as a result of the discussion at the September working group meeting. Questions were raised about the interaction between extended addressing and quick arbitration.

Charles stated that work remains to be done on the fairness model and then the proposal will be complete. Jeff Williams asked for information about why LUN bridges do not solve the problem this proposal attempts to address. Charles declined to comment on LUN bridges.

7. Meeting Schedule

The next meeting of the SCSI Protocol Working Group will be Wednesday, January 12, 2000 from 9 a.m. to 7 p.m. (or until all agenda items are completed). The meeting will be at the Marriott Resort Hotel (+61-7-5592-9800) in Surfer's Paradise, Queensland, Australia hosted by ENDL Pacific Technologies.

8. Adjournment

The meeting was adjourned at 5:30 p.m. on Wednesday November 3, 1999.