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Reply to: John Lohmeyer

To: T10 Membership
From: Ralph Weber and John Lohmeyer
Subject: SCSI Commands, Architecture, & Protocol Working Group Meeting -- March 6&8 2000
Dallas, TX

Agenda

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3. Attendance and Membership
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 - 4.2 Comments on SAM multi-port model (rev 8 vs. rev 11) (99-265) [Ericson/Weber]
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 - 4.5 Target-Controlled Congestion Relief (00-127) [Elliott]
 - 4.6 Commands Cleared by Another Initiator (99-311) [Binford]
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 - 6.3 A detailed proposal for access control in SPC-2 (99-245, 99-278) [Hafner]
 - 6.4 Access Controls Alternative (00-123) [Weber]
 - 6.5 Beyond two terabytes (99-259) [Penokie]
 - 6.6 READ/WRITE BUFFER Behavior During Domain Validation (99-306) [Lamers]
 - 6.7 SCSI Socket Services (99-251, 99-252, 99-253, 99-254, 99-255, 99-256, 99-257) [Parker]
 - 6.8 Object-oriented Storage Devices (99-315) [Milligan]
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 - 6.10 Service Action Code assignment format and rules in SPC-2 [Weber]
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 - 6.12 Review of 16-byte operation codes (00-152) [Weber]
 - 6.13 Adding Reserved Bytes to EXTENDED COPY Parameter Data (00-165) [Weber]
 - 6.14 Self Test Log Page [Evans]
 - 6.15 SPC-2 Annex B Issues [Milligan]
 - 6.16 EXTENDED COPY Work in Progress (00-171r0) [Weber]
 - 6.17 SPC-2 and SPC-3 Contents [Weber]
7. New Business
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9. Adjournment

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Results of Meeting

1. Opening Remarks

John Lohmeyer, the T10 Chair, called the meeting to order at 1:00 p.m., Monday, March 6, 2000. He thanked Paul Aloisi of Texas Instruments 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:

6.14 Self Test Log Page [Evans]

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

6.15 SPC-2 Annex B Issues [Milligan]

6.16 EXTENDED COPY Work in Progress (00-171r0) [Weber]

6.17 SPC-2 and SPC-3 Contents [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. Roger Cummings	O	Adaptec (DPT Division)	roger_cummings@adaptec.com
Mr. Matt Wakeley	O	Agilent Technologies	matt_wakeley@agilent.com
Mr. Bill Galloway	P	BREA Technologies, Inc.	billg@breatech.com
Mr. Kyle Walczak	V	Compaq	kyle.walczak@compaq.com
Mr. Robert C. Elliott	P	Compaq Computer Corp.	Rob_Elliott@compuserve.com
Mr. Neil Wanamaker	P	Crossroads Systems, Inc.	ntw@crossroads.com
Mr. John Tyndall	A	Crossroads Systems, Inc.	jtyndall@crossroads.com
Mr. Rick DeMars	V	CTS	rdemars@ctscorp.com
Mr. Charles Tashbook	P	Dallas Semiconductor	charles.tashbook@dalsemi.com
Mr. William Dawkins	O	Dell Computer	bill_dawkins@dell.com
Mr. Ralph O. Weber	A	ENDL Texas	roweber@acm.org
Mr. Mike Taylor	O	Exabyte Corp.	miketa@exabyte.com
Mr. Eugene Lew	P	Fujitsu	elew@fcpa.fujitsu.com
Mr. Nathan Hastad	P	General Dynamics	nathan.j.hastad@gd-is.com
Mr. Stewart Wyatt	P	Hewlett Packard Co.	stewart_wyatt@hp.com
Mr. Tim Anderson	A	Hewlett Packard Co.	tima@core.rose.hp.com
Mr. Steve Jerman	A	Hewlett Packard Co.	steve_jerman@hp.com
Dr. Jim Hafner	V	IBM Corp.	hafner@almaden.ibm.com
Mr. John Lohmeyer	P	LSI Logic Corp.	lohmeier@t10.org
Mr. Charles Binford	A	LSI Logic Corp.	Charles.Binford@lsil.com

Ms. Jie Fan	P	Madison Cable Corp.	jfan@madisoncable.com
Mr. Pete McLean	P	Maxtor Corp.	pete_mclean@maxtor.com
Mr. Jay Neer	P	Molex Inc.	jneer@molex.com
Mr. Edward A. Gardner	P	Ophidian Designs	eag@ophidian.com
Mr. Mark Evans	P	Quantum Corp.	mark.evans@quantum.com
Mr. Pak Seto	V	Quantum Corp.	pseto@tdh.qntm.com
Mr. Gene Milligan	P	Seagate Technology	Gene_Milligan@notes. seagate.com
Mr. Gerald Houlder	A	Seagate Technology	gerry_houlder@notes. seagate.com
Mr. Jim Coomes	V	Seagate Technology	jim_coomes@notes.seagate. com
Mr. Paul Suhler	V	Seagate Technology	paul_a_suhler@notes. seagate.com
Mr. Ron Roberts	V	Sierra-Pac Technology	rkr Roberts@aol.com
Mr. Goldie Sandhu	V	Sony Electronics	goldie_sandhu@asd.sel. sony.com
Mr. Erich Oetting	P	Storage Technology Corp.	erich_oetting@stortek.com
Mr. Robert N. Snively	P	Sun Microsystems Computer Co	bob.snively@sun.com
Mr. Paul D. Aloisi	P	Texas Instruments	Paul_Aloisi@ti.com
Mr. Donald R. Getty	A#	Texas Instruments	donald_getty@ti.com
Mr. Mike Kosco	V	Texas Instruments	mike@mvbuilders.com
Mr. Kenneth J. Hallam	P	UNISYS Corporation	ken.hallam@unisys.com
Mr. Arlan P. Stone	A	UNISYS Corporation	arlan.stone@unisys.com

39 People Present

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

4. SCSI Architecture Model Topics

4.1 SAM-2 Review [Weber]

Ralph Weber stated that no new draft of SAM-2 is available for review at this meeting.

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

On the recommendation of Ralph Weber, the group agreed to defer consideration of this topic to the May meeting.

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

Bob Snively reviewed 99-343r0 and made several editorial changes.

Gerry Houlder objected to the proposal because the new wording outlaws their current implementations. A single 'shall' in the proposal became the focus of Gerry's concern. Gene Milligan moved that the 'shall' be changed to a 'should'. Ralph Weber seconded the motion. The motion passed 7:4.

Gene Milligan moved to recommend 99-343r1 (r0 as revised) be included in SAM-2. Bill Galloway seconded the motion. The motion to recommend failed 5:6. After a discussion of parliamentary procedure, Bob moved to reconsider the defeated motion. The motion to reconsider passed 13:3. The reconsideration of the motion passed 9:5:1.

4.4 Multi-Port Model Discussion [Penokie]

Ralph Weber presented 99-235r0 on the naming of objects in a multi-port SCSI device. The group discussed the naming concepts and the effects of target reset in a multi-port device. George Penokie agreed to prepare more formal proposal based on 99-235r0 for changes in SAM-2.

4.5 Target-Controlled Congestion Relief (00-127) [Elliott]

Rob Elliott asked that discussion of this topic be deferred to the May meeting.

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

Charles Binford reviewed the concepts of a proposal to add a COMMAND CLEARED status for commands cleared by target reset and similar functions (99-311r1). The group identified several problems with non-responding initiators resulting in the target's inability to deliver the status and Charles took notes for future revisions of the proposal. Charles agreed to bring a more formal proposal to the May meeting.

4.7 Bug in SAM-2 Task Identifier definition (00-140) [Weber]

Ralph Weber described a problem he discovered while reviewing FCP-2. Among the possible resolutions, Ralph proposed that the I_T_L_Q nexus concept be added to SAM-2. The group discussed this concept and with a few exceptions like it. Ralph agreed to prepare for the May meeting a specific proposal for adding the I_T_L_Q nexus concept to SAM-2.

5. SCSI Protocol Topics

5.1 FCP-2 Letter Ballot Comments Resolution (00-150) [Snively] {Monday p.m.}

Bob Snively reported that a new revision of the letter ballot comments resolution document was available for review during this meeting (00-150r1). He then led a review of technical comments. Review was completed for the comments from Crossroads Systems, ENDL and Hewlett Packard.

As a result of the review, Bob received an action item to generate a correction proposal for FC-FS table 79 that currently contains incorrect definitions for the reason codes for LS_RJT.

5.2 SVP Review [Gardner]

Ed Gardner stated that revision 0 of SVP will be available prior to the May meeting. In response to questions from George Penokie, Ed Gardner described the relationship between the SCSI VI Protocol and Infiniband. Ed also described the specific issues for relating SVP to Infiniband (00-172r0).

In response to a request from the floor, the group unanimously supported making all structures in SVP big endian.

6. Command Set Topics

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

Gerry Houlder asked that discussion of this item be deferred to the May meeting.

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

Steve Jerman presented a new revision of the proposal to add READ and WRITE ATTRIBUTE commands. The group discussed several comments and Steve agreed to bring a revised proposal to the May meeting.

6.3 A detailed proposal for access control in SPC-2 (99-245, 99-278) [Hafner]

Jim Hafner presented an overview of the access control proposal (99-278r3). Jim noted that the next revision of the proposal will have the LUN Map 'owned' by the partition access manager, whereas the current proposal has the LUN Map 'owned' by the target. The group discussed several open issues in the proposal and offered several suggestions that Jim noted. Jim agreed to bring a revised proposal to the May meeting.

6.4 Access Controls Alternative (00-123) [Weber]

Based on the excellent work done by Jim Hafner, Ralph Weber asked that this item be removed from future agendas.

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

George Penokie presented the proposal to add 16-byte CDBs for commands to be used by disks with more than two terabytes of storage (99-259r3). The group noted a few minor changes in the proposal and George agreed to produce a new revision. In the absence of any objections, the group recommended that 99-259r4 (r3 as revised) be included in SPC-2 and SBC-2.

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

Rob Elliott reviewed a proposal for changes in the echo buffer behavior (in SPC-2) to support concurrent domain validation operations from multiple initiators (99-306r1). The group edited the proposal, making several minor changes. In the absence of any objections, the group unanimously recommended that 99-306r2 (r1 as revised) be included in SPC-2.

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

In the absence of Keith Parker, action on this item was deferred to the next meeting.

6.8 Object-oriented Storage Devices (99-315) [Milligan]

Gene Milligan reported that he has processed about 24 pages of the comments from Hewlett Packard and updated a working draft. Gene asked if the interim draft should be distributed. Gene stated that a draft incorporating all comments and converted to standard format will be available before the May meeting. The group asked Gene to defer distributing the draft at least until all the Hewlett Packard comments had been incorporated.

6.9 SPC-3 Echo Buffer Size (00-109) [Lamers]

Rob Elliott reviewed the changes made since the January Working Group meeting (00-109r2). The group requested a minor change and Rob agreed to produce a revised proposal. In the absence of any objections, the group unanimously recommended that 00-109r3 (r2 as revised) be included in SPC-2.

6.10 Service Action Code assignment format and rules in SPC-2 [Weber]

Ralph Weber described a mechanism for assigning service action codes for the variable length CDBs. The mechanism would insert the device type value (from INQUIRY data) in the high order five bits of the service action code with the effect that all device type specific uses of the variable length CDB are not required to be cataloged in SPC-x.

Questions were raised about SPC uses of the variable length CDB, and Ralph proposed using the 1Fh device type code in such instances. The working group asked Ralph to add text effecting this concept in the next revision of SPC-2.

6.11 Removing Optical Devices from SBC-2 (reflector message) [Milligan]

Gene Milligan reported that he has received requests to keep the current optical device documentation in SBC-2. Therefore, Gene requested that no action be taken and that this item be removed from future agendas.

6.12 Review of 16-byte operation codes (00-152) [Weber]

Ralph Weber reviewed the current assignments of operation codes for 16-byte CDBs (00-152r0). The group raised no issues with the assignments.

6.13 Adding Reserved Bytes to EXTENDED COPY Parameter Data (00-165) [Weber]

Ralph Weber presented a proposal to add reserved bytes to the parameter data for the EXTENDED COPY command (00-165r0). In the absence of any objections, the group unanimously recommended that 00-165r0 be included in SPC-2.

6.14 Self Test Log Page [Evans]

Mark Evans described a problem with the log parameter data for the logical unit self test. The parameter data does not contain a field for the test number in the self test log parameter format. Three options for encoding the test number were discussed: changes to the self-test segment number field, use of the reserved nibble in the high order part of byte 16, or extend the parameter list by four bytes. The preference of the group was to change the self-test segment number field. The working group instructed the SPC-2 editor to modify the description of the self-test segment number as follows:

old wording:

The self-test segment number field identifies the number of the segment that failed during the self-test.

new wording:

The self-test segment number field identifies the number of the segment or the number of the segment and number of the test that failed during the self-test.

6.15 SPC-2 Annex B Issues [Milligan]

Gene Milligan sought and received guidance for incorporating the contents of SPC-2 annex B in SBC-2.

6.16 EXTENDED COPY Work in Progress (00-171r0) [Weber]

Ralph Weber informed the group of potential future proposals for changes in EXTENDED COPY (00-171r0).

6.17 SPC-2 and SPC-3 Contents [Weber]

Ralph Weber stated that he intends to request a letter ballot on SPC-2 following the May meeting. He also stated that he will lobby against inclusion of major changes in SPC-2 at the May meeting.

7. New Business

No new business was brought before this meeting.

8. Meeting Schedule

The next meeting of the SCSI Commands, Architecture, and Protocols Working Group will be Monday, May 15, 2000 from 1:30 p.m. to 6 p.m., then reconvening Wednesday, May 17, 2000 from 9 a.m. to 7 p.m. (or until all agenda items are completed). The meeting will be at the Sheraton Nashua Hotel in Nashua, NH (603) 888-9970, hosted by Hitachi Cable Manchester.

9. Adjournment

The meeting was adjourned at 5:55 p.m. on Wednesday March 8, 2000.