Accredited Standards Committee*
National Committee for Information Technology Standards (NCITS)

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Date: November 7, 2000
Reply to: John Lohmeyer

To: T10 Membership
From: Ralph Weber and John Lohmeyer
Subject: SCSI Commands, Architecture, & Protocol Working Group Meeting -- November 1, 2000
Monterey, CA

Agenda

1. Opening Remarks
2. Approval of Agenda
3. Attendance and Membership
4. SCSI Architecture Model Topics
   4.1 Multi-Port Model Discussion (00-268) [Penokie]
   4.2 ASCQ references in section 5.4 (00-340) [Elliott]
   4.3 Long SCSI Device IDs (00-279) [Gardner]
   4.4 Command Reference Number in SAM-2 (00-345) [Peterson]
5. SCSI Protocol Topics
   5.1 Margin Control (99-264) [Lamers]
   5.2 Renaming SVP (00-390) [Gardner]
   5.3 64-bit Tags in SVP (00-354r1) [Gardner]
   5.4 Scatter-Gather Lists for SVP (00-410) [Gardner]
   5.5 Access Controls Actions for FCP-2 (99-245r9) [Snively]
6. Command Set Topics
   6.1 Asymmetrical SCSI Behavior (00-232) [Moe]
   6.2 Bi-directional XDWRITEREAD command for SBC-2 (00-315) [Elliott]
   6.3 SCSI Device Memory Export Protocol (00-312) [Wayda]
   6.4 Mandating Large LBA in SBC-2 (00-356) [Gardner]
   6.5 Identifying Devices (00-357) [Gardner]
   6.6 Unit attention issue (00-359) [Gardner]
   6.7 CDB Structure Rewrite (00-269) [Weber]
   6.8 Three minor modifications to Access Controls in SPC-3 (00-381) [Hafner]
   6.9 Increased defect list lengths for SBC-2 (00-395) [Elliott]
   6.10 EXTENDED COPY: URI target descriptor (00-398) [Peterson]
   6.11 Mode Page Equivalent of ECP (00-396) [Elliott]
   6.12 SSS Report [Parker]
7. New Business
   7.1 iSCSI [Peterson]
   7.2 Aborting commands when changing in/out of packetized mode (00-403r0) [Galloway]
8. Review of Documents
   8.1 FCP-2 Letter Ballot Comments Resolution (00-150) [Snively]
   8.2 SPC-2 Letter Ballot Comments Resolution (00-267) [Weber]
   8.3 SBC-2 Review [Milligan]
   8.4 SVP Review [Gardner]
9. Meeting Schedule
10. Adjournment

Results of Meeting

1.   Opening Remarks

John Lohmeyer, the T10 Chair, called the meeting to order at 9:00 p.m., Wednesday November 1, 2000. 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 changes:

5.3	64-bit Tags in SVP (00-354r1) [Gardner]	
6.8	Three minor modifications to Access Controls in SPC-3 (00-381) [Hafner]	
6.9	Increased defect list lengths for SBC-2 (00-395) [Elliott]	
6.10	EXTENDED COPY: URI target descriptor (00-398) [Peterson]	
6.11	Mode Page Equivalent of ECP (00-396) [Elliott]	
6.12	SSS Report (00-407) [Parker]	

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

5.4	Scatter-Gather Lists for SVP (00-410) [Gardner]
5.5	Access Controls Actions for FCP-2 (99-245r9) [Snively]
7.1	iSCSI [Peterson]
7.2	Aborting commands when changing in/out of packetized mode (00-403r0) [Galloway]

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:

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        Name          S        Organization         Electronic Mail Address
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Mr. Lawrence J. Lamers P  Adaptec, Inc.            ljlamers@ieee.org
Mr. Litko Chan        O  Agilent Technologies     lito_chan@agilent.com
Mr. Bill Galloway     P  BREA Technologies, Inc.  billg@breatech.com
Mr. Robert Snively    P  Brocade Comm. Systems,   rsnively@brocade.com
                          Inc.
Mr. David Peterson    P  Cisco Systems, Inc.      dap@cisco.com
Mr. Edward Haske      P  CMD Technology           haske@cmd.com
Mr. Robert C. Elliott P  Compaq Computer Corp.    Rob_Elliott@compuserve.
                                                   com
Mr. Neil Wanamaker    P  Crossroads Systems, Inc. ntw@crossroads.com
Mr. Ronald Stockford  P  Dell Computer Corp.      ron_stockford@dell.com
Mr. Kevin Marks       A  Dell Computer Corp.      kevin_marks@dell.com
Mr. Keith W. Parker   V  Diogenes SCSI            diogenes@europa.com
Mr. I. Dal Allan      A  ENDL                     endlcom@acm.org
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Mr. Ralph O. Weber        P   ENDL Texas                roweber@acm.org
Mr. Eugene Lew            P   Fujitsu                   elew@fcpa.fujitsu.com
Mr. Nathan Hastad        P   General Dynamics          nathan.j.hastad@gd-is.com
Mr. George O. Penokie    P   IBM / Tivoli Systems      gpenokie@tivoli.com
Dr. Jim Hafner           V   IBM Corp.                 hafner@almaden.ibm.com
Mr. Bill Troop           V   IBM Corp.                 troop@us.ibm.com
Mr. Cris Simpson         V   Intel Corp.               cris.simpson@intel.com
Mr. John Lohmeyer        P   LSI Logic Corp.           lohmeyer@t10.org
Mr. Rob Haydt            V   Microsoft                 robhay@microsoft.com
Mr. Dave Ford            O   Network Appliance         dford@orca.com
Mr. Edward A. Gardner    P   Ophidian Designs          eag@ophidian.com
Mr. Mark Evans           P   Quantum Corp.             mark.evans@quantum.com
Mr. Gerald Houlder       A   Seagate Technology        gerry_houlder@notes.
                                                       seagate.com
Mr. Erich Oetting        P   Storage Technology Corp.  erich_oetting@stortek.com
Mr. Kenneth Moe          P   Sun Microsystems, Inc.    kenneth.moe@sun.com
Mr. Seth Abrahams        V   Sun Microsystems, Inc.    seth.abrahams@sun.com
Mr. Donald R. Getty      A#  Texas Instruments         donald_getty@ti.com

29 People Present

Status Key:  P   -  Principal
             A,A# -  Alternate
             O   -  Observer
             L   -  Liaison
             V   -  Visitor
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4.   SCSI Architecture Model Topics

4.1   Multi-Port Model Discussion (00-268) [Penokie]

George Penokie reviewed the figures in the working model for devices with multiple ports (00-268r2). After the group asked for only minor changes, George stated that general agreement on the model had been reached. He stated that the minor figure revisions and words to match the figures will be brought to the next meeting for discussion.

4.2   ASCQ references in section 5.4 (00-340) [Elliott]

Rob Elliott presented a proposal to cleanup ASCQ related wording in SAM-2 (00-340r1). In the absence of any objections, the group unanimously recommended that 00-340r1 be approved for inclusion in SAM-2.

4.3   Long SCSI Device IDs (00-279) [Gardner]

Ed Gardner asked that discussion of this item be deferred to the next meeting.

4.4   Command Reference Number in SAM-2 (00-345) [Peterson]

Dave Peterson presented a proposal to add command reference number (CRN) to the Execute Command function in SAM-2 (00-345r0). The group requested wording changes in the CRN description and Dave agreed to make the changes. Dave Peterson moved that 00-345r1 (r0 as revised) be approved for inclusion in SAM-2. Bob Snively seconded the motion. The motion passed on a vote of 11:4:3.

5.   SCSI Protocol Topics

5.1   Margin Control (99-264) [Lamers]

Ron Roberts requested that discussion of this topic be deferred to the next meeting.

5.2   Renaming SVP (00-390) [Gardner]

Ed Gardner presented a discussion of why SVP should be renamed (00-390r0). The group discussed what the new name should be but left the final decision to the T10 plenary meeting.

5.3   64-bit Tags in SVP (00-354r1) [Gardner]

Ed Gardner presented an additional revision of the already approved 00-354 document, discussing issues that arose while trying to incorporate the approved proposal. The group requested wording changes and Ed agreed to make those changes. In the absence of any objections, the group unanimously recommended 00-354r2 (r1 as revised) for inclusion in SVP.

5.4   Scatter-Gather Lists for SVP (00-410) [Gardner]

In response to questions from Ed Gardner, those present stated a preference for adding Scatter Gather Lists in SVP and asked Ed to study the details. One person not present but represented by a committee member had concerns. Ed Gardner stated that details of Scatter Gather Lists for SVP will be discussed at a SVP working group meeting to be held late in November (exact dates were agreed to at the T10 plenary meeting).

5.5   Access Controls Actions for FCP-2 (99-245r9) [Snively]

Bob Snively asked whether he was expected to include 99-245r9 into FCP-2. John Lohmeyer noted that T10 had voted to accept 99-245r9 into FCP-2 (and several other documents) at its May 2000 meeting. In July 2000, T10 amended this action by accepting 00-261r0, which reduced the editorial effort somewhat. The group approved for 99-245r9 in FCP-2 subject to editorial corrections.

6.   Command Set Topics

6.1   Asymmetrical SCSI Behavior (00-232) [Moe]

Ken Moe presented a revision of the proposal to add commands for devices with asymmetric behaviors across several access ports (00-232r2). Ken also reviewed the comments regarding the proposal recently received from Compaq. One of the issues raised was persistence through power cycles. Compaq proposed optional persistence but Bob Snively argued that persistence is mandatory.

George Penokie raised several issues about the usage of terminology, issues significant enough to cause Bob Snively to describe the needed changes as a total rewrite. Bob noted that Ken may want to consider the implications of the proposed terminology changes before agreeing to the rewrite. Ken Moe agreed to consider the inputs from the working group and to bring a revised proposal containing at least the Compaq requested changes to the next meeting.

Concerns were raised about reserving the ASC/ASCQ definitions in the proposal. Ralph agreed to add the ASC/ASCQ definitions as an SPC-2 letter ballot comment as soon as the description text is agreed to.

6.2 Bi-directional XDWRITEREAD command for SBC-2 (00-315) [Elliott]

Rob Elliott presented a proposal to add a bi-directional XDWRITEREAD command to be added to SBC-2 (00-315r1), noting the minor changes from r0. In the absence of any objections, the group unanimously recommended 00-315r1 for inclusion in SBC-2.

6.3 SCSI Device Memory Export Protocol (00-312) [Wayda]

In the absence of Jim Wayda, discussion of this topic was deferred to the next meeting.

6.4 Mandating Large LBA in SBC-2 (00-356) [Gardner]

Ed Gardner returned with the proposal first presented in September whose effect would be to make 64-bit LBAs mandatory in SBC-2. Details of the proposal were objectionable to several people present.

Larry Lamers moved that READ(16) and WRITE(16) be made mandatory in the SBC-2 direct-access device type command set. Ed Gardner seconded the motion. The motion passed on a vote of 9:3:4.

6.5 Identifying Devices (00-357) [Gardner]

Ed Gardner described the issues associated with identifying devices in combinations of InfiniBand fabrics and Fibre Channel fabrics. Ed took several notes and agreed to bring more proposal information to the SVP working group meeting to be held late in November (exact dates were agreed to at the T10 plenary meeting).

6.6 Unit attention issue (00-359) [Gardner]

Ed Gardner asked that discussion of this item be deferred to the next meeting.

6.7 CDB Structure Rewrite (00-269) [Weber]

Ralph Weber reported that this subject will be discussed during the SPC-2 letter ballot resolution meeting following the T10 plenary meeting on Thursday.

6.8 Three minor modifications to Access Controls in SPC-3 (00-381) [Hafner]

Jim Hafner presented a proposal to open up vendor specific options in Access Controls and to correct a bug in the Access Controls changes to EXTENDED COPY (00-381r0). The addition of vendor specific fields caused some concerns. The lack of a specific ASC/ASCQ for the EXTENDED COPY error case produced a little concern but was found acceptable. In the absence of any objections, the group unanimously recommended 00-381r0 for inclusion in SPC-3.

6.9 Increased defect list lengths for SBC-2 (00-395) [Elliott]

Rob Elliot presented a proposal concerning defect reporting and management in SBC-2 (00-395r0). Rob Elliott moved that 00-395r0 be recommended for inclusion in SBC-2. Mark Evans seconded the motion. The motion passed on a vote of 8:1:5.

6.10 EXTENDED COPY: URI target descriptor (00-398) [Peterson]

Dave Peterson presented a proposal to add URI (Universal Resource Identifier) to the EXTENDED COPY command (00-398r0). The proposed format failed to conform with the fixed length 32 byte format specified for Target Descriptors. The uniqueness of the URI was also questioned and Dave offered the IPv4 identifier as a substitute.

Later in the day, Dave presented 00-398r1 that used an IPv4 address instead of a URI. The group requested changes in the descriptor format. Dave Peterson moved that 00-398r2 (r1 as modified) be approved for inclusion in SPC-2. Erich Oetting seconded the motion. The motion passed on a vote of 8:1:8.

6.11 Mode Page Equivalent of ECP (00-396) [Elliott]

Rob Elliott presented a proposal to provide Expander Control Protocol data using mode pages (00-396r2). One aspect of the proposal was defining subpage codes for mode pages. In the absence of any objections, the group unanimously recommended 00-396r2 for inclusion in SPC-3 and SPI-4.

6.12 SSS Report [Parker]

Keith Parker reported that no progress has been made on SSS.

7.   New Business

7.1 iSCSI [Peterson]

Dave Peterson suggested that the iSCSI work might be better done in T10. Larry Lamers felt that face-to-face meetings would be helpful to solve iSCSI problems; he suggested co-located meetings. George Penokie noted that many of the iSCSI problems are beyond the scope of T10 expertise. Bob Snively noted that expertise always appears and lack of expertise should not be taken as an issue. Dave clarified his interest as being having T10 work on an iSCSI project in place of IETF but in proper cooperation with IETF, and stated that his request for a straw poll covered just that issue. John Lohmeyer, Ed Gardner, and Larry Lamers all were adamant that cooperation with IETF was critical. In the absence of any objections, the straw poll was recorded as unanimously favoring placing iSCSI under T10.

7.2 Aborting commands when changing in/out of packetized mode (00-403r0) [Galloway]

Bill Galloway discussed the areas of confusion in 00-403r0, do all commands for all initiators get aborted or just the commands for the initiator that changed in/out of packetized mode? The answer was just the commands for the initiator making the change get aborted but all other commands are unaffected.

Bill also discussed the question of where to put this information. He stated that there are no really good places to put it. His recommendation was to put the text in the overview section with cross-references as needed.

Rob Elliott raised concerns about 8-bit verses 16-bit tags and it was agreed to address the issue in a separate proposal.

8.   Review of Documents

8.1 FCP-2 Letter Ballot Comments Resolution (00-150) [Snively]

Bob Snively reported that the FCP-2 letter ballot review was conducted in the Joint T10/T11.3 Meeting on Monday (minutes in 00-411).

8.2 SPC-2 Letter Ballot Comments Resolution (00-267) [Weber]

Ralph Weber reported that the SPC-2 letter ballot resolution will be discussed in a meeting following the T10 plenary meeting on Thursday. (Secretary's note: the results of the meeting are summarized in 00-407.)

8.3 SBC-2 Review [Milligan]

In the absence of Gene Milligan, action on this item was deferred to the next meeting.

8.4 SVP Review [Gardner]

Ed Gardner discussed the situation surrounding the addition of a scatter-gather capability to SVP. Dave Ford stated his support for adding scatter-gather and Ed noted that others have expressed interest in the feature. Bob Snively questioned the usefulness of scatter-gather and Ed explained how it could be used. Bob explained the degree to which scatter-gather complicates the interface and suggested that it may result in non-interoperable implementations. Additional discussion of scatter-gather lists occurred as part of item 5.4.

9. Meeting Schedule

The next meeting of the SCSI Commands, Architecture, and Protocols Working Group will be Wednesday, January 17, 2001 from 9 a.m. to 7 p.m. (or until all agenda items are completed). The meeting will be at the Grosvenor Resort (407) 828-4444 in Lake Buena Vista, FL, hosted by Adaptec, Inc.

10. Adjournment

The meeting was adjourned at 5:30 p.m. on Wednesday January 17, 2001.