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

To: T10 Membership
From: Ralph Weber and John Lohmeyer
Subject: SCSI Commands, Architecture, & Protocol Working Group Meeting -- Nov 9-10, 2004
            Austin, TX

Agenda

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    4.2   SAM-3 SAS-1.1 FCP-3 - Retry Delay (04-297) [Penokie]
    4.3   SAM-4 SAS-1.1 I_T NEXUS LOSS task management function (04-372) [Elliott]
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        5.2.3   Response to T10 Letter Ballot comments on SPC-3 (04-355) [Weber]
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        5.3.2   SBC-2 Revision 15 T10 letter ballot comment resolution as of revision 15b (04-274) [Elliott]
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    5.4   SCSI Enclosure Services Proposals
        5.4.1   SES-2 Define a SAS Expander element (04-374) [Elliott]
        5.4.2   SES-2 Download Microcode diagnostic page (04-377r0) [Elliott]
        5.4.3   SES-2 Subenclosure Nickname diagnostic page (04-382r0) [Elliott]
    5.5   Other Proposals
6. SCSI Protocol Topics
    6.1   Fibre Channel Protocol
        6.1.1   FCP-3 SPC-3 return check condition when FCP_DL too small (03-393) [Oetting]
7. Old Business
    7.1   ATA Command Pass-Through (04-262) [Stevens]
    7.2   Common Storage Management Interface (04-284) [Fairchild]
8. New Business
9. Review of Working Drafts
    9.1   SRP-2 Review (SRP-2) [Simpson]
10. Review of Recommendations to the Plenary
11. Meeting Schedule
12. Adjournment

Results of Meeting

1. Opening Remarks

John Lohmeyer called the meeting to order at 1:30 p.m. Tuesday, Nov 9, 2004. He thanked Dexter Anderson and Rosa Flanders of Crossroads Systems for hosting the meeting.

As is customary, the people attending introduced themselves.

2. Approval of Agenda

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

    5.2.4   SPC-3: Log Parameter Subpages (04-389r0) [Butt]
    5.4.2   SES-2 Download Microcode diagnostic page (04-377r0) [Elliott]
    5.4.3   SES-2 Subenclosure Nickname diagnostic page (04-382r0) [Elliott]

No items were added/revised during the course of the meeting.

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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Ms. Pat Thaler                    P  Agilent Technologies
Mr. Robert Snively                P  Brocade Comm. Systems, Inc.
Mr. David Peterson                P  CNT
Mr. Dexter Anderson               P  Crossroads Systems, Inc.
Mr. Kevin Marks                   P  Dell, Inc.
Mr. Gary S. Robinson              P  EMC Corp.
Mr. Kenneth Hirata                A  Emulex
Mr. Robert H. Nixon               P  Emulex
Mr. Ralph O. Weber                P  ENDL Texas
Mr. Walt Hubis                    V  Engenio Information Tech.
Mr. Mike Fitzpatrick              P  Fujitsu
Mr. Michael Banther               V  Hewlett Packard Co.
Mr. Rob Elliott                   P  Hewlett Packard Co.
Mr. Chris Martin                  V  Hewlett Packard Co.
Mr. Zane Daggett                  P  Hitachi Cable Manchester
Mr. George O. Penokie             P  IBM / Tivoli Systems
Mr. Kevin Butt                    V  IBM Corp.
Mr. Robert Sheffield              P  Intel Corp.
Mr. Steffen Hellmold              V  Lexar Media, Inc.
Mr. John Lohmeyer                 P  LSI Logic Corp.
Mr. Mark Evans                    P  Maxtor Corp.
Mr. Robert Griswold               V  Medusa Labs (Finisar Corp)
Mr. Mark Overby                   V  Nvidia Corp.
Mr. Bill Galloway                 P  Pivot3, Inc.
Mr. Craig W. Carlson              A  QLogic Corp.
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Mr. Ting Li Chan                    V   QLogic Corp.
Mr. Greg Elkins                     V   QLogic Corp.
Mr. Paul Entzel                     P   Quantum Corp.
Mr. Jim Coomes                      A   Seagate Technology
Dr. Paul Suhler                     V   Seagate Technology
Mr. William Martin                  V   Sierra Logic
Mr. Erich Oetting                   P   Storage Technology Corp.
Mr. Charles Binford                 A   Sun Microsystems, Inc.
Mr. Vit Novak                       P   Sun Microsystems, Inc.
Mr. Roger Cummings                  P   Veritas Software
Mr. Curtis Stevens                  P   Western Digital
Mr. Rich Ramos                      V   Xyratex

37 People Present

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

4.1 SAM-4:Converting to UML part 1 (04-023) [Penokie]

George Penokie requested that discussion of this topic be deferred to the next meeting.

4.2 SAM-3 SAS-1.1 FCP-3 - Retry Delay (04-297) [Penokie]

George Penokie presented a proposal to define a mechanism to help initiators determine how long a Busy or Task Set Full status will be returned by a target (04-297r0). The group requested numerous changes and George agreed to prepare a new revision for consideration at the next meeting.

4.3 SAM-4 SAS-1.1 I_T NEXUS LOSS task management function (04-372) [Elliott]

Rob Elliott presented a proposal to add an I_T nexus loss (renamed I_T nexus reset by the SAS working group) to SAM-4 and SAS-1.1 (04-372r0). The group requested changes and Rob agreed to prepare a new revision for consideration at the next meeting.

4.4 SAM-4 SAS-1.1 Task priority cleanup (04-376) [Elliott]

Rob Elliott presented a proposal to clarify task priority definitions in SAM-4 and SAS-1.1 (04-376r0). The group requested minor changes and Rob agreed to prepare a new revision.

Rob Elliott moved that 04-376r1 (r0 as modified) be recommended for incorporation in SAM-4 and SAS-1.1. Bob Nixon seconded the motion. In the absence of any objections, the motion passed unanimously.

5. Command Set Topics

5.1 Reservations Proposals

No reservations proposals were brought before the group.

5.2   SCSI Primary Commands Proposals

5.2.1   SPC: Time Of Day Settings (04-271) [Butt]

Kevin Butt moved that the SPC-3 editor be instructed to incorporate 04-271r4 in SPC-3 as part of the letter ballot comment resolution. Bob Nixon seconded the motion. In the absence of any objections, the motion passed unanimously.

5.2.2   SPC-3 MMC-5 Merge PREVENT ALLOW MEDIUM REMOVAL commands (04-349) [Elliott]

Rob Elliott reviewed a proposal (04-349r0) designed to combine the SPC-3 and MMC-4 definitions of the PREVENT ALLOW MEDIUM REMOVAL command so that MMC-5 need not contain its own definition.

MMC-5 editor Bill McFerrin asked that the PREVENT ALLOW MEDIUM REMOVAL command be removed from SPC-3. Various members of the group noted that doing so would require addition of the command to SBC-2, SSC-3, and SMC-3. Since SMC-3 is a project without an editor, removing PREVENT ALLOW MEDIUM REMOVAL from SPC-3 appeared to not be an option.

Bill stated that the 04-349r0 proposal confused all the MMC-5 working group members who tried to read it. Emily Hill stated that the group found it impossible to separate the medium changer aspects of the proposal from the MMC-5 usage, which does not discuss medium changes at all.

It was proposed that the SPC-3/4 discussion of PREVENT ALLOW MEDIUM REMOVAL be divided into two subclauses: one for medium changers (mostly the current text) and one for non-medium changers (mostly the MMC-4 text). Bill agreed to prepare a proposal for the content of the MMC-4.

All agreed that this item should be removed from future agendas.

5.2.3   Response to T10 Letter Ballot comments on SPC-3 (04-355) [Weber]

Ralph Weber led the group in a review of several SPC-3 letter ballot comments (04-355r1). Agreed resolutions will be reflected in 04-355r2. Ralph noted that SPC-3 letter ballot comment resolution will continue following the T10 plenary on Thursday.

5.2.4   SPC-3: Log Parameter Subpages (04-389) [Butt]

Kevin Butt presented an initial revision of a proposal to define subpage codes for log pages (04-389r0). The group requested numerous changes and Kevin agreed to prepare a revised proposal for consideration at the next meeting.

5.3   SCSI Block Commands Proposals

5.3.1   Background Media Scan (04-198) [Houlder]

Jim Coomes presented a proposal to add background media scan controls to SBC-2 and SPC-3 (04-198r1). Concerns were raised about automatically clearing the pre-scan bit after a power cycle and Jim noted the issue for possible changes in a future revision.

The group discussed the implications on SPC-3, the lack of ability to extend the existing self-test mode and log pages, and how to incorporate as much of the block-specific definition in SBC-2/3 instead of SPC-3/4.

Jim stated that a new revision of the proposal would be presented at the next meeting.

5.3.2   SBC-2 Revision 15 T10 letter ballot comment resolution as of revision 15b (04-274) [Elliott]

Rob Elliott moved that 04-274r2 be recommended as resolving the SBC-2 letter ballot comments, that SBC-2 r16 be recommended as containing the resolution of the Letter Ballot comments, and that SBC-2 r16 be forwarded to INCITS for processing towards first Public Review. Bill Galloway seconded the motion. In the absence of any objections, the motion passed unanimously.

5.3.3   SBC-2: Proposal for USB Solid State Drive Mode Sense specification (04-362) [Furuhjelm]

Steffen Hellmold presented a proposal for defining a mode page for USB solid-state drives (04-362r0). The group recommended using a VPD page instead of a mode page for most of the proposed data, as well as other changes in the proposal.

George Penokie noted that the proposal contains three types data:

- Unchangeable data that can be represented in a VPD page
- Data that the host wants to set that can be represented in a Mode page
- Data that needs to be polled (e.g., the health indicator) which needs to be represented by a Log page (with unit attention), polling with Request Sense, or polling with a specialized command

Steffen agreed to prepare a revised proposal for consideration at the next meeting.

5.4   SCSI Enclosure Services Proposals

5.4.1   SES-2 Define a SAS Expander element (04-374) [Elliott]

Rob Elliott presented a proposal to define an element format for SAS Expanders (04-374r0). The group requested several changes and Rob agreed to prepare a new revision of the proposal for consideration at the next meeting.

5.4.2   SES-2 Download Microcode diagnostic page (04-377r0) [Elliott]

Rob Elliott presented a proposal to define a mechanism for downloading microcode to attached SES devices (04-377r0). The group requested several changes and Rob agreed to prepare a new revision of the proposal for consideration at the next meeting.

5.4.3   SES-2 Subenclosure Nickname diagnostic page (04-382r0) [Elliott]

Rob Elliott presented a proposal to define a Subenclosure Nickname page for SES devices (04-382r0). The group requested several changes and Rob agreed to prepare a new revision of the proposal for consideration at the next meeting.

5.5   Other Proposals

No other proposals were brought before the group.

6. SCSI Protocol Topics

6.1 Fibre Channel Protocol

6.1.1 FCP-3 SPC-3 return check condition when FCP_DL too small (03-393) [Oetting]

Dave Peterson reported that the FCP-3 group has decided not to report incorrect FCP_DL values using sense data. Also, the FCP-3 group has decided not to obsolete the FCP_DL field. The group raised no concerns regarding this approach. There is no need to consider this proposal further by the CAP group.

7. Old Business

7.1 ATA Command Pass-Through (04-262) [Stevens]

Curtis Stevens presented the latest revision of the ATA command pass-through proposal (04-262r6) planned for incorporation in SAT. The group requested some changes and Curtis agreed prepare a new revision. Curtis requested the assignment of operation and sense data descriptor codes and the following codes were agreed:

- Operation code A1h — ATA COMMAND PASS THROUGH(12)
- Operation code 85h — ATA COMMAND PASS THROUGH(16)
- Sense data descriptor code 09h — ATA Return

7.2 Common Storage Management Interface (04-284) [Fairchild]

The group agreed that this topic should be removed from this and future agendas.

8. New Business

No new business was brought before the group.

9. Review of Working Drafts

9.1 SRP-2 Review (SRP-2) [Simpson]

In the absence of Cris Simpson, the SRP-2 working draft was not reviewed.

10. Review of Recommendations to the Plenary

Ralph Weber noted that the following recommendations have been made to the T10 plenary:

    For SAM-4 and SAS-1.1:
    04-376r1 (Task priority cleanup) [Elliott]

    Resolving SBC-2 Letter Ballot comments:
    04-274r2 (SBC-2 r16) [Elliott]

11. Meeting Schedule

The next meeting of the SCSI Commands, Architecture, and Protocols Working Group will be Tuesday, January 18, 2005 commencing at 1:30 p.m. and continuing Wednesday, January 19, 2005 from 9 a.m. to 6 p.m. (or until all agenda items are completed). The meeting will be in Las Vegas, NV at the Tropicana Hotel (800-643-4000), hosted by Hitachi GST.

12. Adjournment

The meeting was adjourned at 5:50 p.m. on Wednesday November 10, 2004.