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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 -- July 11-12, 2007
Colorado Springs, CO

Agenda

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 - 5.2.1 SBC-3, Clarifications for Background Scan Results log page (07-271) [Evans]
 - 5.2.2 SBC-3 WRITE LONG Additional Sense code option to support SAT-2 (07-302) [Wolford]
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 - 5.3.1 SES-2 Enclosure element Power Cycle request (07-118) [Elliott]
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 - 5.4.1 OSD-2 Attributes Enhancements (07-273) [Weber]
 - 5.4.2 Several OSD-2 Corrections and Clarifications (07-270) [Weber]
 - 5.4.3 OSD-2 CLEAR command, PUNCH command, & range-based FLUSH (07-274) [Weber]
 - 5.4.4 OSD-2 Task Management Function Catchup (07-275) [Weber]

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- 5.4.5 OSD-2 Security Enhancements (07-301) [Weber]
- 6. SCSI Protocol Topics
- 7. Security
 - 7.1 SPC-4: Establishing a Security Association using IKEv2 (06-449) [Ball & Black]
 - 7.2 Capability based Command Security (07-069) [Penokie]
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 - 7.4 ESP-SCSI for Parameter Data (07-169r0) [Weber]
 - 7.5 The SA Creation protocol in 06-449r5 (07-226) [Weber]
 - 7.6 SPC-4: Command Security Model (07-262) [Weber/Penokie]
 - 7.7 IKEv2-SCSI – 06-449 – Update (07-320) [Black]
- 8. Old Business
- 9. New Business
- 10. Review of Working Drafts
- 11. Review of Recommendations to the Plenary
- 12. Meeting Schedule
- 13. Adjournment

Results of Meeting

1. Opening Remarks

John Lohmeyer called the meeting to order at 9:00 a.m. Wednesday, July 11, 2007. He thanked LSI for hosting the meeting. As usual, the people present introduced themselves.

2. Approval of Agenda

The draft agenda was approved with no additions or changes.

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 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
Mr. Chris Fore	P	Adaptec, Inc.
Mr. David Peterson	P	Brocade
Mr. Gideon Avida	P	Decru
Mr. Kevin Marks	P	Dell, Inc.
Mr. David Black	A	EMC Corp.
Mr. Gary S. Robinson	P	EMC Corp.
Mr. Robert H. Nixon	A	Emulex
Mr. Ralph O. Weber	P	ENDL Texas
Mr. Mike Fitzpatrick	P	Fujitsu
Mr. Michael Banther	A	Hewlett Packard Co.
Mr. Rob Elliott	P	Hewlett Packard Co.
Mr. Dan Colegrove	P	Hitachi Global Storage Tech.
Mr. Glen Jaquette	V	IBM

Mr. Kevin Butt	A	IBM Corp.
Mr. George O. Penokie	P	IBM Corp.
Mr. Sivan Tal	V	IBM Corp.
Dr. Mark Seidel	A	Intel Corp.
Mr. Joel Silverman	P	Kawasaki Microelectronics Am
Mr. John Geldman	P	Lexar Media, Inc.
Mr. Walt Hubis	V	LSI Corp.
Mr. John Lohmeyer	P	LSI Corp.
Mr. David Geddes	P	Marvell Semiconductor, Inc.
Mr. Mark Benedikt	P	Microsoft Corp.
Mr. Landon Noll	A	NeoScale Systems Inc.
Mr. Frederick Knight	A	Network Appliance
Mr. Mark Overby	P	Nvidia Corp.
Mr. Geoffrey Barton	V	Overland Storage
Mr. Tim Symons	P	PMC-Sierra
Mr. Matthew Ball	V	Quantum Corp.
Mr. Paul Entzel	P	Quantum Corp.
Dr. Paul Suhler	A	Quantum Corp.
Mr. Michael Rogers	A	Samsung
Mr. Avraham Shimor	P	SanDisk Corporation
Mr. Gerald Houlder	P	Seagate Technology
Mr. Gary D. Moorhead	V	Seagate Technology
Mr. Stephen Finch	P	STMicroelectronics, Inc.
Mr. Erich Oetting	P	Sun Microsystems, Inc.
Mr. Raymond Gilson	A	Symantec Corporation
Mr. Jim Scott	P	Vitesse Semiconductor
Mr. Mark Evans	P	Western Digital
Mr. Curtis Stevens	A	Western Digital

41 People Present

Status Key: P - Principal
 A,A# - Alternate
 AV - Advisory Member
 E - Emeritus
 L - Liaison
 V - Visitor

4. SCSI Architecture Model Topics

4.1 SAM-4 Response Fence for protocol services (06-341) [Elliott]

Rob Elliott requested that discussion of the proposal to reflect transport layer ordering of commands and task management functions in SAM-4 (06-341r1) be deferred to the next meeting.

4.2 SAM-4: Task Tag Length and FCP (07-139) [Peterson]

Dave Peterson asked that discussion of the proposal to remove the task tag size statements in SAM-4 (07-139) be deferred to the next meeting.

4.3 SAM-4: Changes requested from 03/2007 editing session (07-157) [Penokie]

George Penokie presented a collection of UML changes that arose from discussions during the March SAM editing session (07-157r2). The group requested several changes to regularize the definitions of SAM-4 classes and George agreed to prepare a new revision for presentation to the next meeting.

4.4 SAM-4 SPC-4 TASK ABORTED status clarifications (06-026) [Elliott]

Rob Elliott presented a proposal to clarify the instances in which TASK ABORTED status is returned (06-026r3). He noted the sense of the proposal had reversed course since r1 based on statements from Charles Binford that the original intent of defining the TASK ABORTED status was to apply it to logical unit resets, and this intention had been broken by early revisions of this proposal.

The group requested several minor changes and Rob agreed to prepare a new revision.

Rob Elliott moved that 06-026r4 (r3 as revised) be recommended for inclusion in SAM-4. Mark Evans seconded the motion. The motion passed 15:0:5.

4.5 SAM-4 Peripheral device and logical unit addressing errors (07-223) [Elliott]

Rob Elliott presented a proposal modify the SAM-4 description of error handling for unsupported logical units (07-223r0). He noted that the proposal had not changed since the May meeting deferred action on it.

Rob Elliott moved that 07-223r0 be recommended for inclusion in SAM-4. Kevin Marks seconded the motion. In the absence of objections, the motion passed unanimously.

4.6 SAM-4: No UA on NOTIFY DATA TRANSFER DEVICE command (07-266) [Entzel]

Paul Entzel presented a proposal to decouple the ADC-2 NOTIFY DATA TRANSFER DEVICE command from unit attention generation (07-266r0).

Rob Elliott suggested creation of an ignores-unit-attentions class of commands, but the group preferred to keep the *status quo* in which it is difficult to define a command that ignores established unit attention conditions.

Paul Entzel moved that 07-266r0 be recommended for inclusion in SAM-4. Kevin Butt seconded the motion. In the absence of objections, the motion passed unanimously.

4.7 SAM-4 SCSI Initiator and Target Port capability attributes (07-263) [Elliott]

Rob Elliott presented a proposal to define port attributes that indicate capabilities (e.g., which task attributes are supported) to facilitate tracking of what features are support via a proposed new SAM-4 annex (07-263r0). The group discussed the concept and agreed to discuss it further at the next meeting.

4.8 SAM-4 Protocol services as UML operations (07-268) [Elliott]

Rob Elliott presented the goals statements from a proposal to correct the UML definitions for protocol services operations (07-268r0). Then, the discussion switched to agenda item 4.3.

Rob requested that discussion of this topic be removed from future agendas.

5. Command Set Topics

5.1 SCSI Primary Commands Proposals

5.1.1 SPC-4: ASC/ASCQ Reservations for ATA REQUEST SENSE (07-081) [Overby]

Mark Overby asked that discussion of the proposal to define a range of additional sense codes for use by T13 (07-081) be deferred to the next meeting.

5.1.2 SPC-4 Error History proposal (06-362) [Houlder]

Gerry Houlder and Rob Elliott presented a proposal to define a method for retrieving error history information (06-362r6). The group encountered significant problems with the limitations placed on device servers automatically clearing an error history snapshot.

Rob agreed to prepare a new revision of the proposal.

Kevin Butt moved that 06-362r7 (r6 as revised) be recommended for inclusion in SPC-4. Gerry Houlder seconded the motion. The motion passed 11:0:6.

5.1.3 SPC-4: Extended SCSI Commands (07-029) [Weber]

Due to the late hour, Ralph Weber requested that discussion of the proposal to define a mechanism for adding extensions to SCSI CDBs (07-029r3) be deferred to the next meeting.

5.1.4 Prohibited needed as a keyword in SPC-4 (07-257) [Weber]

Ralph Weber presented a proposal to define a prohibited keyword in SPC-4 and the T10 Style Guide (07-257r0). The group requested that the keyword usage be explicitly limited to non-SCSI standards and other editorial changes. Ralph agreed to prepare a new revision.

Ralph Weber moved that 07-257r1 (r0 as revised) be recommended for inclusion in SPC-4 and the T10 Style Guide. Mark Overby seconded the motion. In the absence of objections, the motion passed unanimously.

5.1.5 SPC-4: Update Annex C for ADC-2 changes (07-269) [Entzel]

Paul Entzel presented a proposal to update Annex C in SPC-4 based on the ADC-2 version which is about to ship to Public Review (07-269r0). Paul noted that one service action for the MAINTENANCE OUT command is mandatory and the group asked that the table listing for MAINTENANCE OUT be changed to Mandatory. Paul agreed to prepare a new revision.

Kevin Butt moved that 07-269r1 (r0 as revised) be recommended for inclusion in SPC-4. Paul Entzel seconded the motion. In the absence of objections, the motion passed unanimously.

5.1.6 SAS-2 SPC-4 Protocol-Specific VPD pages (07-153) [Elliott]

Rob Elliott presented a proposal to add two protocol specified VPD pages (one for ports, and one for logical units) in support of SAS-2 transport layer retries (07-153r0). The group requested several changes, including making support for the page mandatory only if transport layer retries are supported, and Rob agreed to prepare a new revision.

Rob Elliott moved that 07-153r1 (r0 as revised) be recommended for inclusion in SPC-4 and SAS-2. Kevin Marks seconded the motion. In the absence of objections, the motion passed unanimously.

5.1.7 SPC-4, SBC-3, #Except INQUIRY, REPORT LUNS, and REQUEST SENSE# (07-281) [Evans]

Mark Evans presented a proposal to specify how INQUIRY, REPORT LUNS, and REQUEST SENSE commands are supposed to be processed in those cases where they are excepted from specified error processing (07-281r0).

Concerns were raised about pushing foreground self test out of the foreground in order to process the commands. Mark agreed to revise the proposal to specify only that the commands are processed (as opposed to returning an error).

Mark Evans moved that 07-281r1 (r0 as revised) be recommended for inclusion in SPC-4 and SBC-3. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

5.1.8 SPC-4 Protocol-Specific log page subpages (07-215) [Elliott]

Rob Elliott presented a proposal to make the sub log pages of the protocol specific log pages to be protocol specific too (07-215r0).

Rob Elliott moved that 07-215r0 be recommended for inclusion in SPC-4. Kevin Marks seconded the motion. In the absence of any objections, the motion passed unanimously.

5.1.9 SPC-4: Device Server Password Security (06-070) [Stevens]

Curtis Stevens presented a proposal to add an additional sense code to support security work being done in SAT-2 (06-070r2). The group requested that the code name be changed to SECURITY CONFLICT IN TRANSLATED DEVICE and that the code be applied to the block device type only. Curtis agreed to prepare a new revision.

Ralph Weber moved that the SPC-4 editor be instructed to add an additional sense code definition for SECURITY CONFLICT IN TRANSLATED DEVICE that is applicable only to block devices. Kevin Marks seconded the motion. In the absence of objections, the motion passed unanimously.

5.1.10 SPC-4 Request for TrustedFlash Security Protocol ID Value (07-295) [Shimor]

Avraham Shimor presented a proposal that requested security protocol id for the TrustedFlash Security Forum (07-295r0). The group asked that the proposal be modified to provide contact information for the TrustedFlash Security Forum as part of a glossary entry, and Avraham agreed revise the proposal.

Avraham Shimor moved that 07-295r1 (r0 as revised) be recommended for inclusion in SPC-4. Rob Elliott seconded the motion. The motion passed 3:0:15.

5.2 SCSI Block Commands Proposals

5.2.1 SBC-3, Clarifications for Background Scan Results log page (07-271) [Evans]

Mark Evans presented a proposal to clarify the Background Scan Results log page contents (07-271r0). The group requested some corrections and Mark agreed to prepare a new revision.

Mark Evans moved that 07-271r1 (r0 as revised) be recommended for inclusion in SBC-3. Rob Elliott seconded the motion. In the absence of any objections, the motion passed unanimously.

5.2.2 SBC-3 WRITE LONG Additional Sense code option to support SAT-2 (07-302) [Wolford]

On behalf of the absent Jeff Wolford, Rob Elliott presented a proposal to facilitate the translation of the WRITE LOG command to an ATA WRITE WRONG command by returning a different additional sense code (07-302r0). The group requested some corrections and Rob agreed to prepare a new revision.

Rob Elliott moved that 07-302r1 (r0 as revised) be recommended for inclusion in SBC-3. Mark Evans seconded the motion. The motion passed 10:0:8.

5.3 SCSI Enclosure Services Proposals

5.3.1 SES-2 Enclosure element Power Cycle request (07-118) [Elliott]

Rob Elliott presented a proposal to define a mechanism by which an enclosure could be instructed to power off at a specified time in the future, wait for a specified interval, and power on (07-118r1). The group requested several changes and Rob agreed to prepare a new revision.

Rob Elliott moved that 07-118r2 (r1 as revised) be recommended for inclusion in SES-2. Chris Fore seconded the motion. The motion passed 9:0:9.

5.4 Other Proposals

5.4.1 OSD-2 Attributes Enhancements (07-273) [Weber]

Ralph Weber presented a proposal containing four attributes enhancements for OSD-2 (07-273r2). The group requested several corrections and Ralph agreed to prepare a new revision.

Ralph Weber moved that 07-273r3 (r2 as revised) be recommended for inclusion in OSD-2. Rob Elliott seconded the motion. In the absence of any objections, the motion passed unanimously.

5.4.2 Several OSD-2 Corrections and Clarifications (07-270) [Weber]

Ralph Weber presented eleven OSD-2 changes that had been recommended by the SNIA OSD TWG (07-270r1). The group requested several corrections and Ralph agreed to prepare a new revision.

Ralph Weber moved that 07-270r2 (r1 as revised) be recommended for inclusion in OSD-2. Rob Elliott seconded the motion. In the absence of any objections, the motion passed unanimously.

5.4.3 OSD-2 CLEAR command, PUNCH command, & range-based FLUSH (07-274) [Weber]

Ralph Weber presented a proposal to add the CLEAR command and PUNCH command to OSD-2 as well as to define range-based user object FLUSH (i.e., synchronize cache) operations (07-274r1).

Ralph Weber moved that 07-274r1 be recommended for inclusion in OSD-2. Rob Elliott seconded the motion. In the absence of any objections, the motion passed unanimously.

5.4.4 OSD-2 Task Management Function Catchup (07-275) [Weber]

Ralph Weber presented a proposal to update the PERFORM TASK MANAGEMENT FUNCTION command to accommodate the task management function features added in SAM-4 (07-275r1). The group requested addition of support for the I_T Nexus Reset task management function and Ralph agreed to prepare a new revision.

Ralph Weber moved that 07-275r2 (r1 as revised) be recommended for inclusion in OSD-2. Rob Elliott seconded the motion. In the absence of any objections, the motion passed unanimously.

5.4.5 OSD-2 Security Enhancements (07-301) [Weber]

Ralph Weber asked that discussion of the proposal to add range-based object security and attribute number security capability formats (07-301r0) be deferred to the next meeting.

6. SCSI Protocol Topics

No SCSI Protocol topics were presented to the group.

7. Security

7.1 SPC-4: Establishing a Security Association using IKEv2 (06-449) [Ball & Black]

Ralph Weber led a discussion of critical issues in the latest revision of the IKEv2-SCSI SA creation proposal (06-449r6). The group discussed a few open issues in 06-449r6 and the authors noted additional work (such as the definition of an SA Capabilities Have Changed UA) needed in the next revision.

7.2 Capability based Command Security (07-069) [Penokie]

Due to the late hour, George Penokie and Sivan Tal reluctantly agreed to defer discussion of this topic to the next meeting.

7.3 Command Security via SAs (07-149r0) [Weber]

Ralph Weber asked that this topic be removed from future agendas in favor of the proposal discussed under agenda item 7.6.

7.4 ESP-SCSI for Parameter Data (07-169r0) [Weber]

Ralph Weber asked that discussion of this proposal to define an ESP-based parameter data feature for SPC-4 (07-069r0) be deferred to the next meeting.

7.5 The SA Creation protocol in 06-449r5 (07-226) [Weber]

Ralph Weber reported that the results from the May discussion of 07-226r1 were reflected in 07-449r7.

He asked that this topic be removed from future agendas.

7.6 SPC-4: Command Security Model (07-262) [Weber/Penokie]

Ralph Weber and George Penokie presented a proposal to define a general model for command security (07-262r1). The group requested several changes and the authors agreed to prepare a new revision for consideration at the next meeting.

7.7 IKEv2-SCSI – 06-449 – Update (07-320) [Black]

David Black presented a series of IKEv2-SCSI issues (07-320r0).

The group agreed to define separate algorithm negotiations for IKEv2-SCSI usage and for ultimate SA usage.

The group discussed whether or not mandatory algorithms are to be selected in SPC-4.

Ralph Weber asked for a straw poll on including mandatory algorithms yes/no. The straw poll registered 15 votes in favor of mandatory algorithms and 5 votes opposed to mandatory algorithms.

The group discussed whether the same set of mandatory algorithms for SBC and SSC devices. It was agreed to apply all mandatory algorithms requirements to all device types and document them in SPC-4.

The group agreed to make no mandatory requirements for elliptic curve. (Note: Later discussions suggested that this agreement might be reversed in September.)

The group discussed the bit protection of the algorithms to be selected as mandatory with the choice being between 128-bit strength and 256-bit strength. The various algorithm dependencies in the choices were reviewed, particularly the Diffie-Hellman issues.

Ralph Weber asked for a straw poll to decide between 128-bit strength and 256-bit strength. The straw poll registered 10 votes in favor 128-bit strength and 9 votes in favor of 256-bit strength. This ambiguity caused great concern in the group.

After a lengthy discussion, the group decided to evaluate underlying algorithms for both 128-bit strength and 256-bit strength, with the decision between the two to be made in a September company vote.

The group discussed the underlying algorithm choices and the 06-449 authors noted the choices.

David asked that discussion of 07-320 be removed from future agendas.

8. Old Business

There was no old business.

9. New Business

There was no new business.

10. Review of Working Drafts

No requests were made to review working drafts at this meeting.

11. Review of Recommendations to the Plenary

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

For inclusion in SAM-4:

07-266r0 (No UA on NOTIFY DATA TRANSFER DEVICE command) [Entzel]

06-026r4 (TASK ABORTED status clarifications) [Elliott]

07-223r0 (Peripheral device and logical unit addressing errors) [Elliott]

For inclusion in SPC-4:

07-269r1 (Update Annex C for ADC-2 changes) [Entzel]

06-362r7 (Error History proposal) [Houlder]

07-295r1 (Request for TrustedFlash Security Protocol ID Value) [Shimor]

07-215r0 (Protocol-Specific log page subpages) [Elliott]

these minutes (SECURITY CONFLICT IN TRANSLATED DEVICE additional sense code for block devices) [Weber]

For inclusion in SPC-4 and SBC-3:

07-281r1 ("Except INQUIRY, REPORT LUNS, and REQUEST SENSE") [Evans]

For inclusion in SPC-4 and SAS-2:

07-153r1 (Protocol-Specific VPD pages) [Elliott]

For inclusion in SPC-4 and T10 Style Guide

07-257r1 (Prohibited needed as a keyword in SPC-4) [Weber]

For inclusion in SBC-3:

07-302r1 (WRITE LONG Additional Sense code option to support SAT-2) [Wolford]

07-271r1 (Clarifications for Background Scan Results log page) [Evans]

For inclusion in SES-2:

07-118r2 (Enclosure element Power Cycle request) [Elliott]

For inclusion in OSD-2:

07-273r3 (Attributes Enhancements) [Weber]

07-270r2 (Several OSD-2 Corrections and Clarifications) [Weber]

07-274r1 (CLEAR command, PUNCH command, & range-based FLUSH) [Weber]

07-275r2 (Task Management Function Catchup) [Weber]

12. Meeting Schedule

The next meeting of the SCSI Commands, Architecture, and Protocols Working Group will be Wednesday, September 19, 2007 from 9 a.m. until 7 p.m. and resuming Thursday, September 20, 2007 from 9 a.m. until noon. The meeting will be in Vancouver, BC Canada at the Four Seasons Hotel (Reservations: vcr.reservations@fourseasons.com) hosted by PMC-Sierra.

Note: T10 extended the CAP meeting into Tuesday morning in Vancouver for command-based security.

13. Adjournment

The meeting was adjourned at 12:10 p.m. on Thursday July 12, 2007.