

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

Doc. No.: T10/08-061r0

Date: January 17, 2008

Reply to: John Lohmeyer

To: T10 Membership
From: Ralph Weber and John Lohmeyer
Subject: SCSI Commands, Architecture, & Protocol Working Group Meeting -- January 16-17, 2008
Santa Ana, CA

Agenda

1. Opening Remarks
2. Approval of Agenda
3. Attendance and Membership
4. SCSI Architecture Model Topics
 - 4.1 SAM-4 Response Fence for protocol services (06-341) [Elliott]
 - 4.2 SAM-5 SCSI Initiator and Target Port capability attributes (07-429) [Elliott]
 - 4.3 SAM-4 Letter Ballot comments resolution document (07-478) [Penokie]
 - 4.4 SAM-4 SPC-4 SBC-3 Unit attention condition queuing (07-459) [Elliott]
 - 4.5 SAM-4 Comment on UA Precedence list interaction for incorrect LUN selections (07-450) [Knight]
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]
 - 5.1.2 SPC-4 Download microcode I_T nexus usage (08-008) [Elliott]
 - 5.1.3 SPC-4: Group Persistent Reservations - Presentation (08-024) [Butt]
 - 5.1.4 SPC-4: Group Persistent Reservations - Proposal (08-025) [Butt]
 - 5.1.5 SPC-4: Persistent reservation fixes (08-053) [Houlder]
 - 5.1.6 Error history cleanup (08-034) [Weber]
 - 5.1.7 Allocation length advisories in Inquiry command (SPC4r11) (08-057) [Geldman]
 - 5.1.8 Revisiting Extended Copy (08-063) [Cummings]
 - 5.1.9 SPC-4 Power Condition Mode Page (08-050) [Knight]
 - 5.2 SCSI Block Commands Proposals
 - 5.2.1 SBC-3 WRITE LONG COR_DIS and WR_UNCOR interaction (07-451) [Elliott]
 - 5.2.2 SBC-3 DIF Granularity (08-044) [Sheffield]
 - 5.2.3 Thin Provisioning Concept Proposal (08-070) [Knight]
 - 5.3 SCSI Enclosure Services Proposals
 - 5.3.1 SES-2 Element control and status nomenclature (08-026) [Elliott]
 - 5.3.2 SES-2 revision 19 letter ballot comment resolution as of ses2r19a (08-049) [Elliott]
 - 5.4 Other Proposals
6. SCSI Protocol Topics
 - 6.1 USB Attached SCSI Proposals
7. Security
 - 7.1 Capability based Command Security (07-454) [Penokie]
 - 7.2 ESP-SCSI for Parameter Data (07-169) [Weber]
 - 7.3 SA Creation corrections and clarifications (08-037) [Weber]

*Operating under the procedures of The American National Standards Institute.
INCITS Secretariat, Information Technology Industry Council (ITI)
1250 Eye Street NW, Suite 200, Washington, DC 20005-3922
Email: incits@itic.org Telephone: 202-737-8888 FAX: 202-638-4922

8. Old Business
9. New Business
 - 9.1 Use period as decimal separator in T10 standards (08-041) [Elliott]
10. Review of Working Drafts
 - 10.1 SPC-4 r12 working draft review
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, January 16, 2008. He thanked Curtis Stevens of Western Digital 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.

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

- 10.1 SPC-4 r12 working draft review

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. Noud Snelder	V	BDT
Mr. Kevin Marks	P	Dell, Inc.
Mr. David Black	A	EMC Corp.
Mr. William Martin	P	Emulex
Mr. Robert H. Nixon	A	Emulex
Mr. Ralph O. Weber	P	ENDL Texas
Mr. Mike Fitzpatrick	P	Fujitsu
Mr. Nathan Hastad	P	General Dynamics
Mr. Curtis Ballard	A	Hewlett Packard Co.
Mr. Michael Banther	A	Hewlett Packard Co.
Mr. Rob Elliott	P	Hewlett Packard Co.
Mr. Christopher Williams	A	Hewlett Packard Co.
Mr. Dan Colegrove	P	Hitachi Global Storage Tech.
Mr. Kevin Butt	P	IBM Corp.
Mr. Sivan Tal	V	IBM Corp.
Mr. George O. Penokie	V	Independent
Dr. Mark Seidel	P	Intel Corp.
Mr. Pak Seto	V	Intel Corp.
Mr. Robert Payne	P	Iomega Corp.

Mr. John Geldman	P	Lexar Media, Inc.
Mr. Dennis Kleppen	A	LSI Corp.
Mr. John Lohmeyer	P	LSI Corp.
Mr. Robert Sheffield	A	LSI Corp.
Mr. David Geddes	P	Marvell Semiconductor, Inc.
Mr. Robert Griswold	A	Microsoft Corp.
Mr. Chris Fore	A	Network Appliance
Mr. Frederick Knight	P	Network Appliance
Dr. Alan G. Yoder	V	Network Appliance
Mr. Mark Overby	P	Nvidia Corp.
Mr. Tim Symons	P	PMC-Sierra
Mr. Michael Rogers	A	Samsung
Mr. Avraham Shimor	P	SanDisk Corporation
Mr. Martin Furuholm	V	Seagate
Mr. Gerald Houlder	P	Seagate Technology
Mr. Greg Alvey	V	Solution Technology
Mr. Stephen Finch	P	STMicroelectronics, Inc.
Mr. Erich Oetting	P	Sun Microsystems, Inc.
Mr. Roger Cummings	P	Symantec
Mr. Georg Boasson	V	Tandberg Storage
Mr. Mark Evans	P	Western Digital
Mr. Curtis Stevens	A	Western Digital
Mr. Rich Ramos	AV	Xyratex

42 People Present

Status Key: P - Principal
 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, and noted that the proposal will be carried over to SAM-5.

4.2 SAM-5 SCSI Initiator and Target Port capability attributes (07-429) [Elliott]

Rob Elliott requested that discussion of this topic be deferred to the next meeting, and noted that the proposal will be carried over to SAM-5.

4.3 SAM-4 Letter Ballot comments resolution document (07-478) [Penokie]

George Penokie led a discussion of the resolutions for several SAM-4 Letter Ballot comments. He noted that additional discussion of SAM-4 Letter Ballot comments will occur in the meeting which follows the T10 plenary.

4.4 SAM-4 SPC-4 SBC-3 Unit attention condition queuing (07-459) [Elliott]

Rob Elliott presented a proposal to codify unit attention queuing (07-459r3). The group requested a few minor changes and Rob agreed to prepare a new revision.

Rob Elliott moved that 07-459r4 (r3 as revised) be recommended for inclusion in SAM-4, SPC-4, and SBC-3. Bob Nixon seconded the motion. In the absence of objections, the motion passed unanimously.

4.5 SAM-4 Comment on UA Precedence list interaction for incorrect LUN selections (07-450) [Knight]

George Penokie noted that issue raised by 07-450r0 had been addressed in the SAM-4 Letter Ballot comments resolution document (see agenda item 4.3).

Fred Knight asked that 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 requested 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 Download microcode I_T nexus usage (08-008) [Elliott]

Rob Elliott presented a proposal to clarify what happens when download microcode Write Buffer commands are sent concurrently on multiple I_T nexuses (08-008r0). Wording problems that forced commands to be always terminated with a Check Condition were noted.

Mark Evans requested that the behavior choice be reported via a VPD page bit. Table footnotes were added indicating when Good status would be returned. Gerry Holder asked that modes 4 and 5 be modified to state that all the microcode should be delivered in a single command.

Rob agreed to prepare a new revision for consideration at the next meeting.

5.1.3 SPC-4: Group Persistent Reservations - Presentation (08-024) [Butt]

Kevin Butt reviewed the general concepts for team (formerly called group) persistent reservations (08-024r2). All issues raised against the concepts presentation were topics for which solutions could be found in the detailed text proposal (see agenda item 5.1.4).

5.1.4 SPC-4: Group Persistent Reservations - Proposal (08-025) [Butt]

Kevin Butt led the group in the review of the detailed text changes needed to define team reservations (08-025r2). Numerous corrections and enhancements were requested. Kevin agreed to prepare a new revision for consideration at the next meeting.

5.1.5 SPC-4: Persistent reservation fixes (08-053) [Houlder]

Gerry Houlder presented a proposal to correct three bugs in the persistent reservations definitions (08-053r0). The group agreed with the first two changes, but insisted on removing most of the proposed changes designed to eliminate use of the 'move' in the descriptions of the Register and Move service action. Gerry agreed to prepare a new revision.

Gerry Houlder moved that 08-053r1 be recommended for inclusion in SPC-4. Fred Knight seconded the motion. In the absence of objections, the motion passed unanimously.

5.1.6 Error history cleanup (08-034) [Weber]

Ralph Weber presented a proposal to correct and clarify the error history function incorporated in SPC-4 r12 (08-034r1). The group requested several changes and Ralph agreed to prepare a new revision.

Ralph Weber moved that 08-034r2 (r1 as revised) be recommended for inclusion in SPC-4. Rob Elliott seconded the motion. In the absence of objections, the motion passed unanimously.

5.1.7 Allocation length advisories in Inquiry command (SPC4r11) (08-057) [Geldman]

John Geldman presented a request to remove the allocation length recommendations from the Inquiry command definition (08-057r0).

Ralph Weber moved that 08-057r0 be recommended for inclusion in SPC-4. Kevin Butt seconded the motion. The motion passed 11:1:7.

5.1.8 Revisiting Extended Copy (08-063) [Cummings]

Roger Cummings presented an overview of strategies for creating a new Extended Copy Target Descriptor based on mode page, VPD page, and Inquiry data (08-063r0). The presentation also suggested defining a Receive Copy Results service action to retrieve accessible device information from the copy manager. The group strongly opposed the first idea but accepted the second in principal.

Roger stated that he would prepare a detailed proposal for the Receive Copy Results changes.

Since the detailed text proposal would use a new document number, Roger asked that this topic be removed from future agendas.

5.1.9 SPC-4 Power Condition Mode Page (08-050) [Knight]

Fred Knight presented a proposal to add an Power Condition mode subpage for ATA power management (08-050r1). The group asked that the ATA details appear in SAT-2, not SPC-4. The group asked that the vendor specific timers page in the latter sections of the proposal be removed entirely.

These changes reduced the proposal to a single sentence.

Ralph Weber moved that the SPC-4 editor be instructed to assigned a Power Conditions mode page subpage codepoint (probably F1) ATA Power Conditions, and modify the normative mode page table accordingly. Mark Overby seconded the motion. In the absence of objections, the motion passed unanimously.

5.2 SCSI Block Commands Proposals

5.2.1 SBC-3 WRITE LONG COR_DIS and WR_UNCOR interaction (07-451) [Elliott]

Rob Elliott presented a proposal to cleanup the specification of interactions between recently added WRITE LONG features (07-451r1).

Rob Elliott moved that 07-451r1 be recommended for inclusion in SBC-3 and SPC-4. Gerry Houlder seconded the motion. In the absence of objections, the motion passed unanimously.

5.2.2 SBC-3 DIF Granularity (08-044) [Sheffield]

Bob Sheffield presented a proposal define finer granularity of DIF (08-044r0). The group recommended creating a new type (or types) to represent the new usage models. Bob accepted this advice, and sought inputs on additional choices that must be made when that path is followed.

Gerry Houlder noted that the proposal is attempting to move work normally done inside a disk drive to a layer that is outside the disk. This led to a discussion of how best to use the existing large-physical-block and DIF features to accomplish the proposal's goals.

Bob agreed to discuss the group's existing-code-reuse ideas with his colleagues and return with an appropriate proposal at the next meeting.

5.2.3 Thin Provisioning Concept Proposal (08-070) [Knight]

Fred Knight presented a overview of potential SBC additions which would allow disk to create and manage 'virtual blocks' analogous to 'virtual memory' in operating systems (08-070r0). The group suggested many changes and enhancements to the ideas presented.

Fred agreed to prepare a detailed proposal for consideration at the next meeting.

Since the detailed text proposal would use a new document number, Fred asked that this topic be removed from future agendas.

5.3 SCSI Enclosure Services Proposals

5.3.1 SES-2 Element control and status nomenclature (08-026) [Elliott]

Rob Elliott noted that this topic has been included in the SES-2 Letter Ballot comment resolution document (see agenda item 5.3.2).

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

5.3.2 SES-2 revision 19 letter ballot comment resolution as of ses2r19a (08-049) [Elliott]

Rob Elliott led a review of unresolved SES-2 letter ballot comments based on the comments resolution document 08-049r0. Rob stated that a new revision of the letter ballot comments resolution document will be prepared as a result of the meeting.

5.4 Other Proposals

No other proposals were presented to the group.

6. SCSI Protocol Topics

6.1 USB Attached SCSI Proposals

No proposals related to the USB Attached SCSI working draft were presented to the group.

7. Security

7.1 Capability based Command Security (07-454) [Penokie]

Sivan Tal reviewed the latest revision of the proposal to define capability-based command security (07-454r4). Sivan requested a group opinion regarding the use of identifiers in the SMC changes. The group made a recommendation that Sivan accepted.

Concerns were raised about a chicken-and-egg problem with creating volume-based credentials. Several options were discussed for resolving this problem. Sivan agreed to prepare a new revision.

Sivan Tal moved that 07-454r5 (r4 as revised) be recommended for inclusion in SPC-4, SBC-3, SSC-3, and SMC-3. George Penokie seconded the motion. The motion passed 8:0:8.

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

Ralph Weber led a discussion of his proposal to define an ESP-based parameter data feature for SPC-4 (07-169r6). The group identified several areas needing correction, and Ralph agreed to prepare a new revision.

Kevin Butt moved that 07-169r7 (r6 as revised) be recommended for inclusion in SPC-4. Ralph Weber seconded the motion. In the absence of objections, the motion passed unanimously.

7.3 SA Creation corrections and clarifications (08-037) [Weber]

Ralph Weber presented ten sets of specific changes needed to clarify or correct the SA Creation feature approved in November (08-037r2). The group requested several additional changes and corrections. Ralph agreed to prepare a new revision.

David Black moved that 08-037r3 (r2 as revised) be recommended for inclusion in SPC-4. Ralph Weber seconded the motion. In the absence of objections, the motion passed unanimously.

8. Old Business

There was no old business.

9. New Business

9.1 Use period as decimal separator in T10 standards (08-041) [Elliott]

Rob Elliott presented a proposal to switch T10 to periods for fractional separators, from the current usage of commas.

Rob Elliott moved that 08-041r1 be recommended for inclusion in the T10 style guide and all active standards. Bob Nixon seconded the motion. The motion failed 5:7:10.

10. Review of Working Drafts

10.1 SPC-4 r12 working draft review

Ralph Weber noted that 07-295r1 was not incorporated in SPC-4 r12 due to the absence of any references to standards on the proposed web site. Avraham Shimor suggested referencing the SD-card equivalent of the Trusted-Flash specification. Ralph and Avraham agreed to determine the needed SPC-4 changes offline.

11. Review of Recommendations to the Plenary

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

For inclusion in SPC-4:

08-053r1 (Persistent reservation fixes) [Houlder]

08-034r2 (Error history cleanup) [Weber]

08-057r0 (Allocation length advisories in Inquiry command) [Geldman]

07-169r7 (ESP-SCSI for Parameter Data) [Weber]

08-037r3 (SA Creation corrections and clarifications) [Weber]

08-061 CAP Minutes (ATA Power Conditions mode subpage assignment) [Knight/Overby/Weber]

For inclusion in SPC-4 and SBC-3:

07-451r1 (WRITE LONG COR_DIS and WR_UNCOR interaction) [Elliott]

For inclusion in SAM-4, SPC-4, and SBC-3:
07-459r4 (Unit attention condition queuing) [Elliott]

For inclusion in SPC-4, SBC-3, SSC-3, and SMC-3:
07-454r5 (Capability based Command Security) [Tal]

For the T10 Style Guide and all active T10 standards:
08-041r1 (Use period as decimal separator in T10 standards) [Elliott] {5:7:10}

12. Meeting Schedule

The next meeting of the SCSI Commands, Architecture, and Protocols Working Group will be Wednesday, March 12, 2008 from 9 a.m. until 7 p.m. and resuming Thursday, March 13, 2008 from 9 a.m. until noon. The meeting will be in Raleigh, NC at the Hilton Raleigh-Durham Airport at Research Triangle Park Hotel (Reservations: 919-941-6000) hosted by Network Appliance.

13. Adjournment

The meeting was adjourned at 12:00 p.m. on Thursday January 17, 2008.