

Accredited Standards Committee\*

## InterNational Committee for Information Technology Standards (INCITS)

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Date: March 11, 2004

Reply to: John Lohmeyer

To: T10 Membership  
From: Ralph Weber and John Lohmeyer  
Subject: SCSI Commands, Architecture, & Protocol Working Group Meeting -- March 9-10, 2004  
Dana Point, CA

### Agenda

1. Opening Remarks
2. Approval of Agenda
3. Attendance and Membership
4. SCSI Architecture Model Topics
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  - 4.2 Project Proposal: SAM-4 New Project Proposal (04-055) [Weber]
  - 4.3 SAM-3: Status Precedence Problem (04-070) [Penokie]
  - 4.4 SAM-3 SPC-3 Unit attention for status delivery problems (04-072) [Elliott]
  - 4.5 SAM-3 SAS-1.1 SRP-2 Unit attention on transport layer frame discard (04-073r0) [Elliott]
  - 4.6 SAM-3 Multiple Target Port Model (04-088) [Binford]
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    - 5.1.3 Only if Reserved (OIR) Proposal (03-289r1, 03-289r2) [Cummings]
    - 5.1.4 SPC-3 Third party persistent reservations (03-337) [Elliott]
    - 5.1.5 SPC-3 Persistent reservations read full status (03-342) [Elliott]
    - 5.1.6 SPC-3 Persistent reservations type clarification (04-060) [Elliott]
  - 5.2 SPC-3 Proposals
    - 5.2.1 Command Classification Field (03-361) [Penokie]
    - 5.2.2 Invalid LUN on Request Sense Command (03-376) [Penokie]
    - 5.2.3 SPC-3 SAM-3 Report all initiator and target ports (03-344) [Elliott]
    - 5.2.4 SPC-3 Specify initiator ports in EXTENDED COPY target descriptors (03-354) [Elliott]
    - 5.2.5 SPC-3 Report LUNS Clarification (03-386) [Binford]
    - 5.2.6 SPC-3 SES-2 SBC-2 Miscellaneous diagnostic page topics (04-031) [Elliott]
    - 5.2.7 SPC-3 SES-2 Supported SES Diagnostic Pages (04-074) [Elliott]
  - 5.3 SBC-2 Proposals
    - 5.3.1 Changing Logical Block Sizes (04-011) [Penokie]
    - 5.3.2 SBC-2: Write Same fixes (04-012) [Penokie]
    - 5.3.3 SBC-2 4-byte LBA commands on 8-byte LBA capable drives (03-348) [Elliott]
    - 5.3.4 SBC-2 Nonvolatile caches (03-388) [Elliott]
    - 5.3.5 SBC-2 PRE-FETCH and errors (04-076) [Elliott]
    - 5.3.6 SBC-2 Obsolete more features (04-075) [Elliott]
    - 5.3.7 SBC-2 Replace Notch and Partition mode page with READ CAPACITY (04-082) [Elliott]
  - 5.4 SES-2 Proposals
    - 5.4.1 SPC-3 SES-2 More diagnostic pages for SES (04-010) [Elliott]

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- 5.5 End-to-End Data Protection Proposals
  - 5.5.1 Architecture for End to End Data Protection (03-291) [Snively]
  - 5.5.2 SBC, 32 Byte Commands for End-to-End Data Protection (03-307) [Coomes]
- 5.6 Other Proposals
  - 5.6.1 MSC Report Bridge Mapping command (03-364) [Elliott]
  - 5.6.2 OSD Quota Enforcement (04-059) [Weber]
- 6. SCSI Protocol Topics
  - 6.1 Per-Command Priority Tagging (03-302) [Penokie]
  - 6.2 Query Task in FCP-3 [Peterson]
- 7. Old Business
- 8. New Business
  - 8.1 Offer from Security In Storage IEEE Working Group [Nixon]
- 9. Review of Documents
  - 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 9:00 a.m. Monday, March 9, 2004. He thanked Skip Jones of QLogic 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:

- 4.7 SAM-3 QErr Wording (04-087) [Binford]
- 6.2 Query Task in FCP-3 [Peterson]
- 8.1 Offer from Security In Storage IEEE Working Group [Nixon]

No agenda 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	Electronic Mail Address
Mr. Tim Symons	P	Adaptec, Inc.	Timothy_Symons@adaptec.com
Ms. Pat Thaler	P	Agilent Technologies	pat_thaler@agilent.com
Mr. Neil Wanamaker	P	AMCC	nwanamaker@amcc.com
Mr. Robert Snively	P	Brocade Comm. Systems, Inc.	rsnively@brocade.com

Dr. Claudio DeSanti	P	Cisco Systems, Inc.	cds@cisco.com
Mr. David Peterson	AV	CNT	david_peterson@cnt.com
Mr. Dexter Anderson	A#	Crossroads Systems, Inc.	danderson@crossroads.com
Mr. James A. Lott, Jr.	P	Dallas Semiconductor	jim.lott@dalsemi.com
Mr. Kevin Marks	P	Dell, Inc.	kevin_marks@dell.com
Mr. David Black	A	EMC Corp.	black_david@emc.com
Mr. Gary S. Robinson	P	EMC Corp.	robinson_gary@emc.com
Mr. Kenneth Hirata	A	Emulex	Ken.Hirata@Emulex.com
Mr. Robert H. Nixon	P	Emulex	bob.nixon@emulex.com
Mr. Ralph O. Weber	P	ENDL Texas	roweber@ieee.org
Mr. Mike Fitzpatrick	P	Fujitsu	mfitzpatrick@fcpa. fujitsu.com
Mr. Michael Banther	V	Hewlett Packard Co.	michael_banther@hp.com
Mr. Rob Elliott	P	Hewlett Packard Co.	Elliott@hp.com
Mr. Dan Colegrove	P	Hitachi Global Storage Tech.	daniel.colegrove@hgst.com
Mr. George O. Penokie	P	IBM / Tivoli Systems	gop@us.ibm.com
Mr. Robert Sheffield	P	Intel Corp.	robert.l.sheffield@intel. com
Mr. Dennis Moore	AV	KnowledgeTek, Inc.	dmoore@ix.netcom.com
Mr. Brad Besmer	V	LSI Logic Corp.	brad.besmer@lsil.com
Mr. Keith Holt	A	LSI Logic Corp.	keith.holt@lsil.com
Mr. Steve Johnson	V	LSI Logic Corp.	sjohnson@lsil.com
Mr. John Lohmeyer	P	LSI Logic Corp.	lohmeier@t10.org
Mr. Mark Miquelon	V	LSI Logic Corp.	Mark.Miquelon@lsil.com
Mr. David Weber	V	LSI Logic Corp.	david.weber@lsil.com
Mr. Mark Evans	P	Maxtor Corp.	mark_evans@maxtor.com
Mr. Bill Galloway	P	Pivot3, Inc.	billg@pivot3.com
Mr. Paul Entzel	P	Quantum Corp.	paul.entzel@quantum.com
Mr. Jim Coomes	A	Seagate Technology	jim.coomes@seagate.com
Mr. Gerald Houlder	P	Seagate Technology	gerry.houlder@seagate.com
Dr. Paul Suhler	V	Seagate Technology	Paul.A.Suhler@certance. com
Mr. Erich Oetting	P	Storage Technology Corp.	erich_oetting@stortek.com
Mr. Charles Binford	A	Sun Microsystems, Inc.	Charles.Binford@sun.com
Mr. Vit Novak	P	Sun Microsystems, Inc.	vit.novak@sun.com
Mr. Ron Mathews	P	UNISYS Corporation	ronald.mathews@unisys.com
Mr. Roger Cummings	P	Veritas Software	roger.cummings@veritas. com
Mr. Rich Ramos	V	Xyratex	rich_ramos@us.xyratex.com

39 People Present

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

## 4. SCSI Architecture Model Topics

### 4.1 SAM-3:Converting to UML part 1 (04-023) [Penokie]

Due to the late hour, George Penokie asked that discussion of this topic be deferred to the next meeting.

#### **4.2 Project Proposal: SAM-4 New Project Proposal (04-055) [Weber]**

John Lohmeyer led a review of the New Project Proposal for SAM-4 (04-055r1).

Ralph Weber moved that 04-055r1 be recommended as a new Project Proposal for SAM-4. George Penokie seconded the motion. In the absence of any objections, the motion passed unanimously.

#### **4.3 SAM-3: Status Precedence Problem (04-070) [Penokie]**

George Penokie presented a proposal to revise the status precedence in SAM-3 (04-070r0). Based on the experience of an operating system that is running totally ACA, the proposal asked that ACA Active status be first in the precedence list. Concerns were raised about actions in the new second position in the list all clearing ACA conditions and George agreed to revise his proposal to clarify that point.

George Penokie moved that 04-070r1 (r0 as modified) be recommended for inclusion in SAM-3. Bill Galloway seconded the motion. The motion passed 13:0:1.

#### **4.4 SAM-3 SPC-3 Unit attention for status delivery problems (04-072) [Elliott]**

Rob Elliott presented a proposal to add a unit attention condition and log page to identify cases where delivery of status fails (04-072r0).

The group noted that failure to receive a status obliges the initiator to assume that none of the command has been performed, thus eliminating any data corruption problems.

Several present expressed concerns about over specifying error detection in the SCSI Architecture Model. It was noted that initiator vendors interested in determining this information can require it to be included in the Last n Error Events log page.

Rob Elliott moved that 04-072r0 be recommended for inclusion in SAM-3 and SPC-3. Bob Nixon seconded the motion. The motion failed on a vote of 2:8:7.

David Black stated that his abstention was based on the lack of clarity regarding the impact of the proposal on iSCSI.

#### **4.5 SAM-3 SAS-1.1 SRP-2 Unit attention on transport layer frame discard (04-073r0) [Elliott]**

Rob Elliott proposed adding a unit attention condition to report discarded frames (04-073r0). Many concerns were raised regarding the proposal.

Rob concluded that he needs to consider a proposal for SAS related to hash address value checking and stated that if such a proposal is appropriate it will be brought to the next SAS working group.

Rob noted that this agenda item should be removed from the May CAP agenda.

#### **4.6 SAM-3 Multiple Target Port Model (04-088) [Binford]**

Charles Binford presented a proposal to redefine the multiple target port model in line with a Task Set Type coding definition adopted in January (04-088r0). The group rejected that redefinition and recommended that Charles prepare a proposal for consideration at the next meeting. Charles agreed to follow the group's recommendation.

#### **4.7 SAM-3 QErr Wording (04-087) [Binford]**

Charles Binford presented a proposal correct QErr wording in the SAM-3 subclause describing when tasks are aborted (04-087r0).

Charles Binford moved that 04-087r0 be recommended for inclusion in SAM-3. Bill Galloway seconded the motion. The motion passed 13:0:3.

On the second day of the meeting, the group reconsidered the question and determined that QErr 01b still belongs in the list but only when TST is 001b. Charles agreed to revise the proposal.

Charles Binford moved that 04-087r1 (r0 as modified) be recommended for inclusion in SAM-3. Bill Galloway seconded the motion. The motion passed 13:0:3.

### **5. Command Set Topics**

#### **5.1 Reservations Proposals**

##### **5.1.1 Ordered SCSI proposal (02-283) [Peterson]**

Dave Peterson requested that this topic be removed from future agendas.

##### **5.1.2 Persistent Reserve Out Functionality for Reserve/Release Replacement (02-141) [Peterson]**

Dave Peterson requested that discussion of this topic be deferred to the next meeting.

##### **5.1.3 Only if Reserved (OIR) Proposal (03-289r1, 03-289r2) [Cummings]**

Roger Cummings presented a proposal to add a mode page bit in SSC-3 to return errors when a command is attempted and no reservation is in place (03-289r2). The group requested changes and Roger agreed to prepare a new revision of the proposal.

Roger Cummings moved that 03-289r3 (r2 as modified) be recommended for inclusion in SSC-3 and SPC-2 (for the new additional sense code assignment). Erich Oetting seconded the motion. The motion passed 7:0:6.

##### **5.1.4 SPC-3 Third party persistent reservations (03-337) [Elliott]**

Rob Elliott presented a proposal to define the ability to move reservations from the initiator managing an extended copy to the copy manager and back again (03-337r4). George Penokie raised concerns about the proposed use of persistent reservations Preempts for the normal-operation function of getting the reservation back to the managing initiator. Rob declined to modify the proposal to not use Preempts.

George asked that further discussion of this topic be deferred to the next meeting.

##### **5.1.5 SPC-3 Persistent reservations read full status (03-342) [Elliott]**

Rob Elliott presented a proposal to report full persistent reservations status information (03-342r4). The group requested changes and Rob agreed to prepare a new revision of the proposal.

Rob Elliott moved 03-342r5 (r4 as modified) be recommended for inclusion in SPC-3. Roger Cummings seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.1.6 SPC-3 Persistent reservations type clarification (04-060) [Elliott]**

Rob Elliott presented a proposal to eliminate a redundant (and incorrect) description of how reservations affect command processing based on reservation type (04-060r0). The group requested changes and Rob agreed to prepare a new revision.

Rob Elliott moved that 04-060r1 (r0 as modified) be recommended for inclusion in SPC-3. Ralph Weber seconded the motion. In the absence of any objections, the motion passed unanimously.

## **5.2 SPC-3 Proposals**

### **5.2.1 Command Classification Field (03-361) [Penokie]**

George Penokie presented a proposal to add a classification field to specified SBC-2 commands (03-361r2). The group requested changes and George agreed to prepare a new revision of the proposal for consideration at the next meeting.

### **5.2.2 Invalid LUN on Request Sense Command (03-376) [Penokie]**

George Penokie presented a proposal to correct an inconsistency between SPC-3 and SAM-3 regarding invalid logical unit selection on a Request Sense command (03-376r3). The group requested changes and George agreed to prepare a new revision.

George Penokie moved that 03-376r4 (r3 as modified) be recommended for inclusion in SAM-3 and SPC-3. Bill Galloway seconded the motion. The motion passed 12:0:2.

### **5.2.3 SPC-3 SAM-3 Report all initiator and target ports (03-344) [Elliott]**

Rob Elliott presented a proposal to add a VPD page listing all initiator and target ports in a target device (03-344r5). The group requested changes and Rob agreed to prepare a new revision of the proposal.

Rob Elliott moved that 03-344r6 (r5 as modified) be recommended for inclusion in SAM-3 and SPC-3. Bill Galloway seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.2.4 SPC-3 Specify initiator ports in EXTENDED COPY target descriptors (03-354) [Elliott]**

Rob Elliott presented a proposal to add specifications for which initiator port to use in an EXTENDED COPY operation (03-354r1). The group requested changes and Rob agreed to prepare a new revision.

Rob Elliott moved that 03-354r2 (r1 as modified) be recommended for inclusion in SPC-3. Roger Cummings seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.2.5 SPC-3 Report LUNS Clarification (03-386) [Binford]**

Charles Binford presented a proposal to clarify the contents of the logical unit inventory reported by the REPORT LUNS command (03-386r2). The group requested changes and Charles agreed to prepare a new revision of the proposal for consideration at the next meeting.

### **5.2.6 SPC-3 SES-2 SBC-2 Miscellaneous diagnostic page topics (04-031) [Elliott]**

Rob Elliott led the group in a review of miscellaneous issues related to diagnostic pages (04-031r1). The proposal asked many questions and the group was unable to provide answers.

Rob asked those present to review the questions and proposed changes. He noted that the proposal will be presented for approval at the next meeting.

### **5.2.7 SPC-3 SES-2 Supported SES Diagnostic Pages (04-074) [Elliott]**

Rob Elliott presented a proposal to add a supported diagnostic pages page limited to SES pages (04-074r0).

Rob Elliott moved that 04-074r0 be recommended for inclusion in SPC-3 and SES-2. Jim Coomes seconded the motion. In the absence of any objections, the motion passed unanimously.

## **5.3 SBC-2 Proposals**

### **5.3.1 Changing Logical Block Sizes (04-011) [Penokie]**

George Penokie presented a proposal to clarify the interaction of the mode parameters block descriptor and FORMAT UNIT (04-011r1). The group requested changes and George agreed to prepare a new revision of the proposal for consideration at the next meeting.

### **5.3.2 SBC-2: Write Same fixes (04-012) [Penokie]**

George Penokie presented a proposal to clarify the behavior of the WRITE SAME(16) command (04-012r1).

George Penokie moved that 04-012r1 be recommended for inclusion in SBC-2. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.3.3 SBC-2 4-byte LBA commands on 8-byte LBA capable drives (03-348) [Elliott]**

Rob Elliott presented a proposal to clarify behaviors when 4-byte LBAs are sent to devices that need 8-byte LBAs (03-348r1). The group requested changes and Rob agreed to prepare a new revision.

Rob Elliott moved that 03-348r2 (r1 as modified) be recommended for inclusion in SBC-2. Bob Nixon seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.3.4 SBC-2 Nonvolatile caches (03-388) [Elliott]**

Rob Elliott presented a proposal to add discussion of nonvolatile caches in SBC-2 (03-388r1). The group requested changes and Rob agreed to prepare a new revision for consideration at the next meeting.

### **5.3.5 SBC-2 PRE-FETCH and errors (04-076) [Elliott]**

Rob Elliott presented a proposal to clarify error handling with the immediate bit is set in a PRE-FETCH command (04-076r0).

Rob Elliott moved that 04-076r0 be recommended for inclusion in SBC-2. George Penokie seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.3.6 SBC-2 Obsolete more features (04-075) [Elliott]**

Rob Elliott presented a proposal to obsolete several SBC-2 features (04-075r1). The group requested changes in the proposal and Rob agreed to prepare a new revision. Concerns were raised about the proposal to make the Device Status Input diagnostic page obsolete and it was requested that approval of the proposal be deferred until that issue can be fully investigated. Rob agreed to present the proposal at the next meeting.

### **5.3.7 SBC-2 Replace Notch and Partition mode page with READ CAPACITY (04-082) [Elliott]**

Rob Elliott presented a proposal to enhance the READ CAPACITY command to support 8-byte LBA uses of the Notch and Partition mode pages (04-082r0). The group expressed a preference for making the Notch page obsolete now and dealing with the issue later, when 2 TB disk drives begin to get developed. Several people asked to be given time to review that plan with their engineers. Rob agreed to bring a revised proposal to the next meeting.

## **5.4 SES-2 Proposals**

### **5.4.1 SPC-3 SES-2 More diagnostic pages for SES (04-010) [Elliott]**

Rob Elliott presented a proposal to define more diagnostic pages for use by SES-2 (04-010r2).

Rob Elliott moved that 04-010r2 be recommended for inclusion in SPC-3 and SES-2. Jim Coomes seconded the motion. In the absence of any objections, the motion passed unanimously.

## **5.5 End-to-End Data Protection Proposals**

### **5.5.1 Architecture for End to End Data Protection (03-291) [Snively]**

Bob Snively asked that this topic be removed from future agendas.

### **5.5.2 SBC, 32 Byte Commands for End-to-End Data Protection (03-307) [Coomes]**

Jim Coomes presented a proposal detailing the changes needed to support application-specified data block reference tag and application tag values (03-307r6). The group requested changes and Jim agreed to prepare a new revision.

Requests were made for including the original text in the proposal so that the changes can be reviewed in context. Jim stated that the proposal will be brought to the next meeting for further consideration.

## **5.6 Other Proposals**

### **5.6.1 MSC Report Bridge Mapping command (03-364) [Elliott]**

Rob Elliott presented a proposal for the initial technical content of MSC (03-364r1). The group agreed that a vote recommending this proposal will be taken at the next meeting.

### **5.6.2 OSD Quota Enforcement (04-059) [Weber]**

Ralph Weber presented the SPC-3 changes needed to support OSD quota enforcement (from 04-059r1).

The group discussed continuing to include the OSD sense data descriptor formats in SPC-3 and agreed that the formats should be moved to the OSD working draft, with SPC-3 containing only a list of descriptor type code values and references to OSD. Ralph agreed to revise the proposal to reflect the group's decision.

It was noted that the block commands and stream commands descriptors could also be moved to SBC-2 and SSC-3, respectively. Ralph noted that, when the editors of those standards report that they have included those descriptors in their standards, he will remove them from SPC-3 as an editorial change.



Ralph Weber moved that the SPC-3 related changes in 04-059r2 (r1 as modified) be recommended for inclusion in SPC-3. Bob Nixon seconded the motion.

Ralph noted that the OSD changes cannot be recommended at this time because OSD currently is in Letter Ballot. The OSD changes in 04-059r2 will need to be handled as part of the OSD letter ballot resolution process.

In the absence of any objections, the motion passed unanimously.

## **6. SCSI Protocol Topics**

### **6.1 Per-Command Priority Tagging (03-302) [Penokie]**

George Penokie presented a proposal to add command priorities to FCP-3, SAS 1.1, and SRP-2 command IUs (03-302r3). The group requested changes and George agreed to prepare a new revision of the proposal.

George stated that due to the large number of changes in the SPC-3 parts of the proposal the new revision of the proposal will include only the SAM-3 changes. The SPC-3 changes will be carried over to a new proposal.

George Penokie moved that 03-302r4 (r3 as modified) be recommended for inclusion in SAM-3. Bill Galloway seconded the motion. The motion passed 8:1:9.

### **6.2 Query Task in FCP-3 [Peterson]**

Dave Peterson reported that the FCP-3 group has decided to not implement the Query Task task management function in FCP-3. No objections were raised regarding this decision.

## **7. Old Business**

All old business was covered under specific agenda items.

## **8. New Business**

### **8.1 Offer from Security In Storage IEEE Working Group [Nixon]**

Bob Nixon reported that the Security In Storage working group has nearly completed a draft standard on securing data at rest (i.e., data stored in an encrypted format on the media). The Security In Storage working group has offered to send someone to present an overview of their draft standard to a T10 working group.

The CAP working group recommended scheduling the presentation in a separate meeting, outside CAP. Bob Nixon was asked to determine the presentation time during the T10 meeting.

## **9. Review of Documents**

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

In the absence of Cris Simpson, reviewing SRP-2 was deferred to the next meeting.

## 10. Review of Recommendations to the Plenary

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

For inclusion in SAM-3:

04-070r1 (Status Precedence Problem) [Penokie]

04-087r1 (QErr Wording) [Binford]

03-302r4 (Per-Command Priority Tagging) [Penokie]

For inclusion in SAM-3 and SPC-3:

03-376r4 (Invalid LUN on Request Sense Command) [Penokie]

03-344r6 (Report all initiator and target ports) [Elliott]

For inclusion in SPC-3:

03-342r5 (Persistent reservations read full status) [Elliott]

04-060r1 (Persistent reservations type clarification) [Elliott]

03-354r2 (Specify initiator ports in EXTENDED COPY target descriptors) [Elliott]

04-059r2 (OSD Quota Enforcement \*\*SPC-3 Changes Only\*\*) [Weber]

For inclusion in SPC-3 and SES-2:

04-010r2 (More diagnostic pages for SES) [Elliott]

04-074r0 (Supported SES Diagnostic Pages) [Elliott]

For inclusion in SPC-3 and SSC-3:

03-289r3 (Only if Reserved (OIR) Proposal) [Cummings]

For inclusion in SBC-2:

04-012r1 (Write Same fixes) [Penokie]

03-348r2 (4-byte LBA commands on 8-byte LBA capable drives) [Elliott]

04-076r0 (PRE-FETCH and errors) [Elliott]

## 11. Meeting Schedule

The next meeting of the SCSI Commands, Architecture, and Protocols Working Group will be Tuesday, May 4, 2004 commencing at 1:30 p.m. and continuing Wednesday, May 5, 2004 from 9 a.m. to 6 p.m. (or until all agenda items are completed). The meeting will be in Seaside, CA at the Embassy Suites on Monterey Bay Hotel (831-393-1115), hosted by Brocade Communications Systems.

## 12. Adjournment

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