

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

Doc. No.: T10/02-272r0

Date: July 18, 2002

Reply to: John Lohmeyer

To: T10 Membership  
From: Ralph Weber and John Lohmeyer  
Subject: SCSI Commands, Architecture, & Protocol Working Group Meeting -- July 17, 2002  
Colorado Springs, CO

## Agenda

1. Opening Remarks
2. Approval of Agenda
3. Attendance and Membership
4. SCSI Architecture Model Topics
  - 4.1 SAM-3 Asynchronous event reporting RPC (02-071) [Elliott]
  - 4.2 Response to T10 Letter Ballot comments on SAM-2 (02-155) [Weber]
    - 4.2.1 SAM-2 comments (02-152) [Gardner]
    - 4.2.2 Diagrams pertaining to HP comments on sam2r23 (02-153) [Haagens]
    - 4.2.3 SAM-2 Congruent LB comment #2 (02-123) [Johansson]
  - 4.3 SAM-3 SPC-3 SBC-2 SSC-2 Clearing effects of I\_T nexus loss (02-232) [Elliott & Chadalapaka]
  - 4.4 Rewrite of SAM-2 example for dependent logical units to remove SCC-isms (02-227) [Weber]
  - 4.5 Making Application Clients and Device Servers True Peers in SAM-2 (02-241) [Weber]
  - 4.6 SAM to SAM-2 Changed Terms Annex (02-244) [Weber]
  - 4.7 SAM-3 Identifiers and names for SAS SSP (02-245) [Elliott]
  - 4.8 SAM-3 Query Task (02-278) [Galloway]
5. Command Set Topics
  - 5.1 Persistent Reserve Out Functionality for Reserve/Release Replacement (02-141) [Peterson]
  - 5.2 SES-2 IDENT control for each element (02-192) [Spicher & Elliott]
  - 5.3 SES-2 Enclosure busy indication (02-190) [Spicher & Elliott]
  - 5.4 SES-2 SPC-3 Vendor-specific diagnostic pages (02-189) [Spicher & Elliott]
  - 5.5 SPC-3 Port-specific mode page clarifications (02-149) [Elliott]
  - 5.6 AEN on SAS (02-196r2) [Penokie]
  - 5.7 SPC-3 protocol-specific changes for SAS (02-246) [Elliott]
  - 5.8 SES-2 Nonvolatile cache element cache size (02-249) [Nguyen & Elliott]
  - 5.9 SES-2 Cooling element fan speed in RPM (02-248) [Nguyen & Elliott]
  - 5.10 SES-2 New Enclosure element (02-250) [Nguyen & Elliott]
  - 5.11 SES-2 New Invalid Operation Reason element (02-191) [Spicher & Elliott]
  - 5.12 SES-2 INVOP for Threshold In page (02-193) [Spicher & Elliott]
  - 5.13 SES-2 Protocol-specific device element information (02-194) [Spicher & Elliott]
  - 5.14 SES-2 Enclosure Status element bypass status enhancement (02-251) [Spicher & Elliott]
  - 5.15 WWNs for WLUNs (02-254) [Penokie]
  - 5.16 SPC-3: Mandatory REPORT LUNS Support (02-260) [Peterson]
  - 5.17 SSC-2/SBC-2/SES-2/SMC-2/OSD: Follow-on to Obsoleting Reserve/Release (02-277) [Peterson]
  - 5.18 OSD Demo [Samarra]
  - 5.19 SPC-3 MRIE Equals Async & Control Mode Page (Reflector) [Elliott]
  - 5.20 Support for LUR bit in INQUIRY (02-269) [Novak]
  - 5.21 Ordered SCSI proposal (02-283) [Peterson]

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- 5.22 Extended Copy Write Filemarks Segment Descriptor Immediate Bit (02-286) [Griswold]
- 5.23 MD-5 Logical Unit Identifier (02-035) [Peterson]
- 6. SCSI Protocol Topics
  - 6.1 FCP-2: Issues To Resolve (02-267) [Peterson]
  - 6.2 IBM No Vote on FCP-2 (02-262) [Penokie]
- 7. Old Business
  - 7.1 Project Proposal for AV Direct-access Commands (AVD) (01-337) [Johansson]
- 8. New Business
  - 8.1 SRP-2 Requirements (02-255) [Simpson]
- 9. Review of Documents
- 10. Review of Recommendations to the Plenary
- 11. Meeting Schedule
- 12. Adjournment

## Results of Meeting

### 1. Opening Remarks

John Lohmeyer, the T10 Chair, called the meeting to order at 9:00 a.m., Wednesday July 17, 2002. He thanked LSI Logic 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:

- 4.8 SAM-3 Query Task (02-278) [Galloway]
- 5.17 SSC-2/SBC-2/SES-2/SMC-2/OSD:Follow-on to Obsoleting Reserve/Release (02-277) [David Peterson]
- 5.18 OSD Demo [Samarra]
- 5.19 SPC-3 MRIE Equals Async & Control Mode Page (Reflector) [Elliott]
- 5.20 Support for LUR bit in INQUIRY (02-269) [Novak]
- 5.21 Ordered SCSI proposal (02-283) [Peterson]
- 5.22 Extended Copy (02-286) [Griswold]
- 5.23 MD-5 Logical Unit Identifier (02-035) [Peterson]
- 6.1 FCP-2: Issues To Resolve (02-267) [Peterson]

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

- 6.2 IBM No Vote on FCP-2 (02-262) [Penokie]

### 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. Ron Roberts	P	Adaptec, Inc.	Ron_Roberts@adaptec.com
Dr. Claudio DeSanti	P	Andiamo Systems, Inc.	cds@andiamo.com
Mr. Bill Galloway	P	BREA Technologies, Inc.	billg@breatech.com
Mr. David Peterson	P	Cisco Systems, Inc.	dap@cisco.com
Mr. Peter Johansson	P	Congruent Software, Inc.	PJohansson@ACM.org
Mr. James A. Lott, Jr.	A	Dallas Semiconductor	jim.lott@dalsemi.com
Mr. Kevin Marks	P	Dell Computer Corp.	kevin_marks@dell.com
Mr. Gary S. Robinson	P	EMC Corp.	robinson_gary@emc.com
Mr. Robert H. Nixon	P	Emulex	bob.nixon@emulex.com
Mr. Ralph O. Weber	P	ENDL Texas	roweber@acm.org
Mr. Mike Fitzpatrick	P	Fujitsu	mfitzpatrick@fcpa.fujitsu.com
Mr. Rob Elliott	P	Hewlett Packard Co.	Elliott@hp.com
Mr. Richard B. Roberts	V	Hewlett-Packard Co.	bruce.roberts@hp.com
Mr. Dennis R. Spicher	V	Hewlett-Packard Co.	dennis.spicher@hp.com
Mr. George O. Penokie	P	IBM / Tivoli Systems	gop@us.ibm.com
Mr. Kevin Butt	AV	IBM Corp.	kdbutt@us.ibm.com
Mr. Cris Simpson	P	Intel Corp.	cris.simpson@intel.com
Mr. Dennis Moore	P	KnowledgeTek, Inc.	dmoore@ix.netcom.com
Mr. Kenneth Samarra	V	LOTS Technology	ken.samarra@lotstech.com
Mr. John Lohmeyer	P	LSI Logic Corp.	lohmeier@t10.org
Mr. Mark Evans	P	Maxtor Corp.	mark_evans@maxtor.com
Mr. Pete McLean	A	Maxtor Corp.	pete_mclean@maxtor.com
Mr. Steve Byan	V	Maxtor Corp.	stephen_byan@maxtor.com
Mr. James R. (Bob) Davis	P	Network Appliance Inc.	bob@netapp.com
Mr. Edward A. Gardner	P	Ophidian Designs	eag@ophidian.com
Mr. Paul Entzel	P	Quantum Corp.	paul.entzel@quantum.com
Ms. Deborah Laurion	V	Quantum Corp.	deborah.laurion@quantum.com
Mr. Gerald Houlder	P	Seagate Technology	gerry_houlder@seagate.com
Mr. Jim Coomes	V	Seagate Technology	jim_coomes@seagate.com
Mr. Edward Haske	P	Silicon Image	haske@siliconimage.com
Mr. Erich Oetting	P	Storage Technology Corp.	erich_oetting@stortek.com
Mr. Vit Novak	P	Sun Microsystems, Inc.	vit.novak@sun.com
Mr. Phil Shelton	A	UNISYS Corporation	phil.shelton@unisys.com
Mr. Kenneth Hirata	P	Vixel Corp.	Ken.Hirata@Vixel.com

34 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 Asynchronous event reporting RPC (02-071) [Elliott]

Rob Elliott requested that discussion of this topic be deferred to the next meeting.

### 4.2 Response to T10 Letter Ballot comments on SAM-2 (02-155) [Weber]

Ralph Weber led a discussion of seven SAM-2 letter ballot topics:

What happens to CRN?  
Should CAM be removed from SAM-2?  
Nexus issues  
Should SAM-2 recommend Device Identification VPD page formats?  
New CA/ACA clauses issues  
Define an Implicit Control Mode Page (see item 4.2.3)  
'Application Client' s/b synonymous to a 'Class Driver' (see item 4.5)

A straw poll was taken on the handling of CRN in SAM-2 with the following results:

3 in favor of accepting Compaq 23) (remove CRN)  
1 in favor of accepting Cisco 11) (enhance CRN)  
10 in favor of rejecting both comments and changing nothing about CRN in SAM-2

The group unanimously recommended that discussion of CAM be removed from SAM-2.

Ralph noted other details about the response to the issues and agreed to reflect the group's recommendations in 02-155r4.

#### **4.2.1 SAM-2 comments (02-152) [Gardner]**

Ed Gardner asked that this item be removed from this and future agendas.

#### **4.2.2 Diagrams pertaining to HP comments on sam2r23 (02-153) [Haagens]**

In the absence of Randy Haggens, discussion of this topic was deferred to the SAM-2 letter ballot comments resolution meeting later in the week.

SAM-2 editor Ralph Weber asked that this item be removed from future agendas because it will be handled as part of the SAM-2 letter ballot comment resolution process.

#### **4.2.3 SAM-2 Congruent LB comment #2 (02-123) [Johansson]**

Peter Johansson explained the usefulness of requiring SCSI protocol standards to explain their relationship to the Control mode page. It was noted that similar issues apply to the Disconnect-Reconnect mode page, but no similar requirement exists in SAM-2.

Cris Simpson proposed placing this information, along with a list of other requirements on SCSI protocols, in the T10 Style Guide. Peter accepted this solution as resolving his concerns and withdrew the comment.

Peter agreed that this item can be removed from future agendas.

#### **4.3 SAM-3 SPC-3 SBC-2 SSC-2 Clearing effects of I\_T nexus loss (02-232) [Elliott & Chadalapaka]**

Rob Elliott presented 02-232r1, the latest revision of the "clearing effects" proposal. He began the discussion with the proposed changes to SBC-2 and SSC-2. Rob then reviewed the SAM-3 and SPC-3 proposed changes. The group requested the addition of clarification text in the SAM-3 text. It was agreed that I\_T nexus loss will have no effect on mode pages.

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

#### **4.4 Rewrite of SAM-2 example for dependent logical units to remove SCC-isms (02-227) [Weber]**

Ralph Weber asked that discussion of this topic be deferred to the SAM-2 letter ballot review meetings.

Ralph requested that this topic be removed from future agendas.

#### **4.5 Making Application Clients and Device Servers True Peers in SAM-2 (02-241) [Weber]**

Ralph Weber led a discussion of a proposal to replace 'application client' with 'application client thread' wherever the text means the peer of a task. The goal is to change the application client to be a true peer of the device server.

The group requested that 'application client thread' be changed to 'application client task' and that one application client task handle all the commands in a set of linked commands.

Ralph agreed to revise the proposal and to incorporate by reference all the proposed changes in the SAM-2 letter ballot response.

Ralph requested that this topic be removed from future agendas.

#### **4.6 SAM to SAM-2 Changed Terms Annex (02-244) [Weber]**

Ralph Weber asked that discussion of this topic be deferred to the SAM-2 letter ballot review meetings.

Ralph requested that this topic be removed from future agendas.

#### **4.7 SAM-3 Identifiers and names for SAS SSP (02-245) [Elliott]**

Rob Elliott presented a proposal to add the Annex A SAS identifiers to SAM-3 (02-245r0).

Bob Davis raised concerns about the use of NAA in the world wide name. It was felt that removing the NAA field could usefully increase the number of manufacturer assignable values. The sense of the group was that compatibility with Fibre Channel and consistency with existing disk drive manufacturing processes were more important, meaning that the NAA field will be kept.

Bob Nixon asked why SCSI device and port names had not been defined. George Penokie responded that the use of world wide names for port identifiers seemed like enough. Bob noted that the proposal in item 5.15 would require SAS to have a SCSI device name.

Rob Elliott moved that 02-245r0 be recommended for inclusion in SAM-3. Mark Evans seconded the motion. In the absence of any objections, the motion passed unanimously.

#### **4.8 SAM-3 Query Task (02-278) [Galloway]**

Bill Galloway presented a proposal to add a Query Task task management function to SAM-3 (02-278r0). The group requested editorial corrections in the proposal and the editor agreed to make them as he incorporates the proposal.

Bill Galloway moved that 02-278r0 be recommended for inclusion in SAM-3. Mark Evans seconded the motion. In the absence of any objections, the motion passed unanimously.

## **5. Command Set Topics**

### **5.1 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.

### **5.2 SES-2 IDENT control for each element (02-192) [Spicher & Elliott]**

Rob Elliott presented a proposal that adds an IDENT bit to every SES-2 element (02-192r0).

Rob Elliott moved that 02-192r0 be recommended for inclusion in SES-2. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.3 SES-2 Enclosure busy indication (02-190) [Spicher & Elliott]**

Rob Elliott presented a proposal to add a busy indication for SES devices embedded in disk devices (02-190r0). The indication takes the form of a diagnostic page that is returned instead of the requested page.

Rob Elliott moved that 02-190r0 be recommended for inclusion in SES-2. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.4 SES-2 SPC-3 Vendor-specific diagnostic pages (02-189) [Spicher & Elliott]**

Rob Elliott presented a proposal allow SES devices behind disk drives to have vendor unique SES pages (02-189r0). Changes were requested in the proposal and Rob agreed to prepare a new revision.

At the request of Jim Coomes, Rob agreed to bring the proposal back for further consideration at the next meeting.

### **5.5 SPC-3 Port-specific mode page clarifications (02-149) [Elliott]**

Rob Elliott presented a proposal to clarify the operation of mode pages that are protocol specific for target devices that have multiple ports (02-149r0).

Gerry Houlder raised concerns about how the proposal changes current practices for relating mode pages to logical units. Rob agreed to modify the proposal to allow devices to share one mode page for all ports.

Rob Elliott moved that 02-149r1 (r0 as revised) be recommended for inclusion in SPC-3. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.6 AEN on SAS (02-196r2) [Penokie]**

George Penokie presented a proposal for supporting asynchronous event notification in SAS that proposes changes in SPC-3. Several issues were raised regarding the usefulness of the proposed AEN method. How useful is requiring the target to remember AEN information until all initiators retrieve it when the target cannot know when the required retention time has elapsed? If targets can discard AEN information without notice to the initiators, how reliable is the AEN data for initiator operation?

To some, the inadequacies of the proposal were almost as obnoxious as the inadequacies of the current AEN support defined in SPC. However, the proposal was also described as the best possible solution for SAS.

Ralph Weber moved that the working group recommend to T10 that the SAM-3 editor be instructed to change the 'shall' to a 'may' in the third sentence of the Asynchronous Event Reporting clause in SAM-3. Ed Gardner seconded the motion.

Ralph noted that the effect of the motion would be to make protocol support for AEN optional. He further noted that today many protocol standards such as FCP-2 claim support for AEN but do so using the SPC mechanism requiring the initiator to act as a target, a mechanism so onerous that it is almost never used. Finally, Ralph noted that approval of the motion would be the beginning of the path to obsolescence for AEN. Rob Elliott noted that said obsolescence might not come quickly because iSCSI and SRP both provide usable functional support for AEN.

The motion passed 15:0:1.

George Penokie moved that 02-196r2 be recommended for inclusion in SPC-3. Rob Elliott seconded the motion. The motion failed 3:8:5.

### **5.7 SPC-3 protocol-specific changes for SAS (02-246) [Elliott]**

Rob Elliott presented a proposal to add SAS protocol specific identifiers and other SAS protocol specific data to SPC-3 (02-246r0). In the course of presenting the proposal, Rob noted editorial problems in the proposal. He agreed to prepare a revised proposal.

Rob Elliott moved that 02-246r1 (r0 as revised) be recommended for inclusion in SPC-3. Mark Evans seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.8 SES-2 Nonvolatile cache element cache size (02-249) [Nguyen & Elliott]**

Rob Elliott presented a proposal to add cache size information to the SES-2 (02-249r0). It was noted that the nomenclature must use ISO/IEC 60027-2-am2 (1999-01), Letter symbols to be used in electrical technology - Part 2: Telecommunications and electronics (Amendment 2) and Rob agreed to revise the proposal.

Rob Elliott moved that 02-249r1 (r0 as revised) be recommended for inclusion in SES-2. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.9 SES-2 Cooling element fan speed in RPM (02-248) [Nguyen & Elliott]**

Rob Elliott presented a proposal to add a current cooling fan speed measured in RPMs in SES-2 (02-248r0). Editorial corrections were requested.

Rob Elliott moved that 02-248r1 (r0 as revised) be recommended for inclusion in SES-2. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.10 SES-2 New Enclosure element (02-250) [Nguyen & Elliott]**

Rob Elliott presented a proposal to add an SES-2 element for the enclosure itself (02-250r0). The group requested changes in the proposal and Rob agreed to prepare a new revision.

Rob Elliott moved that 02-250r1 (r0 as revised) be recommended for inclusion in SES-2. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.11 SES-2 New Invalid Operation Reason element (02-191) [Spicher & Elliott]**

Rob Elliott presented a proposal to add an invalid operation reason element whose contents clarify the cause of the INVOP bit being set (02-191r0). The group asked that the new element be moved to after the device elements, to maintain consistency with SES and Rob agreed to prepare a revised proposal.

Rob Elliott moved that 02-191r1 (r0 as revised) be recommended for inclusion in SES-2. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

**5.12 SES-2 INVOP for Threshold In page (02-193) [Spicher & Elliott]**

Rob Elliott presented a proposal to add the INVOP bit to the Threshold In page (02-193r0).

Rob Elliott moved that 02-193r0 be recommended for inclusion in SES-2. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

**5.13 SES-2 Protocol-specific device element information (02-194) [Spicher & Elliott]**

Rob Elliott presented a proposal to add a device element status page to contain protocol specific information (02-194r0). The group noted that the proposed page code conflicts with an assignment made in an earlier proposal and Rob agreed to prepare a new revision of the proposal.

Rob Elliott moved that 02-194r1 (r0 as revised) be recommended for inclusion in SES-2. Bob Nixon seconded the motion. In the absence of any objections, the motion passed unanimously.

**5.14 SES-2 Enclosure Status element bypass status enhancement (02-251) [Spicher & Elliott]**

Rob Elliott presented a proposal to enhance the enclosure status element with a bypass status (02-251r0). Concerns were raised about backwards compatibility with SES. The group requested changes in the proposal to maintain backward compatibility with SES and Rob agreed to prepare a new revision.

Rob Elliott moved that 02-251r1 (r0 as revised) be recommended for inclusion in SES-2. Bob Nixon seconded the motion. In the absence of any objections, the motion passed unanimously.

**5.15 WWNs for WLUNs (02-254) [Penokie]**

George Penokie explained that the Device Identifier VPD page is mandatory for well known LUNs and proposed that the WWN of the well known LUN be the SCSI target device name (02-254r0).

Bob Nixon noted that SAS devices are not required to have SCSI target device names and George agreed that SAS will have to be modified.

Several issues were raised concerning the device naming of iSCSI devices and returning the device names for all protocols (for multi-protocol devices).

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

**5.16 SPC-3: Mandatory REPORT LUNS Support (02-260) [Peterson]**

Dave Peterson presented a proposal to make support for the REPORT LUNS command mandatory (02-260r0). It was observed that the proposal makes REPORT LUNS mandatory for LUN 0. This observation necessitated several changes in the proposal.

Dave Peterson moved that 02-260r1 (r0 as revised) be approved for inclusion in SPC-3, SBC-2, SSC-2, SMC-2, SES-2, and OSD. Erich Oetting seconded the motion. The motion passed on a vote of 10:1:2.

**5.17 SSC-2/SBC-2/SES-2/SMC-2/OSD: Follow-on to Obsolete Reserve/Release (02-277) [Peterson]**

Dave Peterson presented a proposal to obsolete the RESERVE and RELEASE commands in several command set standards and to make PERSISTENT RESERVE IN and PERSISTENT RESERVE OUT mandatory in the same command set standards (02-277r0). Changes were requested and it was noted that the proposal requires no change at all in OSD. Dave agreed to prepare a new revision of the proposal.



Dave Peterson moved that 02-277r1 (r0 as revised) be recommended for inclusion in SSC-2, SBC-2, and SES-2. Rob Elliott seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.18 OSD Demo [Samarra]**

Ken Samarra presented a video showing a prototype OSD system in operation.

### **5.19 SPC-3 MRIE Equals Async & Control Mode Page (Reflector) [Elliott]**

Rob Elliott described how the MRIE asynchronous event reporting mechanism fails to describe the adverse effects of not enabling asynchronous event reporting in the control mode page.

SPC-3 editor Ralph Weber stated that he was willing to make the change provided there are not objections from the group. He noted that the group should be aware of the issue. Since no objections were raised, the change will appear in the next revision of SPC-3.

### **5.20 Support for LUR bit in INQUIRY (02-269) [Novak]**

Vit Novak presented a proposal to add a bit to the standard INQUIRY data that indicates whether the Logical Unit Reset task management function is supported (02-269r0).

Vit Novak moved that 02-269r0 be recommended for inclusion in SPC-3 with agreement that the editor will rewrite the proposal to use 'standards' wording. Erich Oetting seconded the motion. The motion failed on a vote of 4:5:10.

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

Dave Peterson presented a proposal to add CRNs (Command Reference Numbers) to all CDBs (02-283r0). Dave offered three options for integrating CDBs. An option that recasts CDBs as newly defined variable length CDBs seemed to be favored by Dave.

Dave stated that his goal is to get command ordering in SSC-2. Dave stated that he will bring a revised proposal to the next meeting.

### **5.22 Extended Copy Write Filemarks Segment Descriptor Immediate Bit (02-286) [Griswold]**

Bob Griswold presented a proposal to add an immediate bit to the EXTENDED COPY write filemarks segment descriptor (02-286r0). In the course of presenting the proposal, Bob realized that the proposal does not include text describing the immediate bit and agreed to prepare new revision of the proposal.

Bob Griswold moved that 02-286r1 (r0 as revised) be recommended for inclusion in SPC-3. Erich Oetting seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.23 MD-5 Logical Unit Identifier (02-035) [Peterson]**

Dave Peterson reported problems with microcode upgrades and their effects on the product revision level required removing that information from the input to the MD-5 hash algorithm. He noted that the removal was the only change in 02-035r3.

Gerry Houlder moved that 02-035r3 be recommended for inclusion in SPC-3. Rob Elliott seconded the motion. In the absence of any objections, the motion passed unanimously.

## **6. SCSI Protocol Topics**

### **6.1 FCP-2: Issues To Resolve (02-267) [Peterson]**

Dave Peterson presented a list of inconsistencies in FCP-2 (02-267r0). Because of the issues raised in item 6.2 Dave felt that these additional issues should be addressed in FCP-2 before it is sent to second public review. George Penokie felt that only those issues raised by INCITS comments should be addressed in FCP-2 and that all other issues should be resolved in FCP-3.

The group discussed adding an FCP-2 working group meeting to the September T10 meeting week.

### **6.2 IBM No Vote on FCP-2 (02-262) [Penokie]**

George Penokie reviewed the IBM negative vote on 02-262r0. John Lohmeyer notified the group that another INCITS negative vote appears to be in the offing.

The group proceeded to review the FCP-2 issues list under item 6.1.

Because no action can be taken until all the INCITS balloting concludes, the group made no recommendations.

## **7. Old Business**

### **7.1 Project Proposal for AV Direct-access Commands (AVD) (01-337) [Johansson]**

Peter Johansson presented an explanation of the motivation for the AVD command set (02-281r0). The group was favorably disposed to continued work aimed at bringing the AVD project proposal to T10, however, Peter stated that the AVD project proposal will not be considered this week.

## **8. New Business**

### **8.1 SRP-2 Requirements (02-255) [Simpson]**

Cris Simpson presented a review of the new topics to be covered in SRP-2 (02-255r0). The group discussed the list and made only minor modifications.

## **9. Review of Documents**

No documents were brought before the working group to review.

## **10. Review of Recommendations to the Plenary**

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

- SAM-3 Query Task (02-278r0) [Galloway]
- SAM-3 Identifiers and names for SAS SSP (02-245r0) [Elliott]
- SPC-3 Port-specific mode page clarifications (02-149r1) [Elliott]
- SPC-3 protocol-specific changes for SAS (02-246r1) [Elliott]
- Extended Copy Write Filemarks Segment Descriptor Immediate Bit (02-286r1) [Griswold]
- MD-5 Logical Unit Identifier (02-035r3) [Peterson]

SSC-2/SBC-2/SES-2:Follow-on to Obsoleting Reserve/Release (02-277r1) [Peterson]  
SPC-3: Mandatory REPORT LUNS Support (02-260r1) [Peterson] 10:1:2  
SES-2 IDENT control for each element (02-192r0) [Spicher & Elliott]  
SES-2 Enclosure busy indication (02-190r0) [Spicher & Elliott]  
SES-2 Nonvolatile cache element cache size (02-249r1) [Nguyen & Elliott]  
SES-2 Cooling element fan speed in RPM (02-248r1) [Nguyen & Elliott]  
SES-2 New Enclosure element (02-250r1) [Nguyen & Elliott]  
SES-2 New Invalid Operation Reason element (02-191r1) [Spicher & Elliott]  
SES-2 INVOP for Threshold In page (02-193r0) [Spicher & Elliott]  
SES-2 Protocol-specific device element information (02-194r1) [Spicher & Elliott]  
SES-2 Enclosure Status element bypass status enhancement (02-251r1) [Spicher & Elliott]

## 11. Meeting Schedule

The next meeting of the SCSI Commands, Architecture, and Protocols Working Group will be Wednesday, September 11, 2002 from 9 a.m. to 7 p.m. (or until all agenda items are completed). The meeting will be in Minneapolis, MN at the Hilton Airport Hotel (952-854-2100), hosted by Cisco Systems.

## 12. Adjournment

The meeting was adjourned at 7:50 p.m. on Wednesday July 17, 2002.