

Accredited Standards Committee\*

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

Doc. No.: T10/03-178r0
------------------------

Date: May 8, 2003

Reply to: John Lohmeyer

To: T10 Membership  
From: Ralph Weber and John Lohmeyer  
Subject: SCSI Commands, Architecture, & Protocol Working Group Meeting -- May 7, 2003  
Nashua, NH

## Agenda

1. Opening Remarks
2. Approval of Agenda
3. Attendance and Membership
4. SCSI Architecture Model Topics
  - 4.1 SAM-3, SPC-3, and SBC power conditions proposal (02-464) [Evans]
  - 4.2 Remove ULP and LLP from SAM-3 (03-003) [Weber]
  - 4.3 Calls and Arguments in SAM-3 (03-108) [Weber]
  - 4.4 Task Management Incorrect Logical Unit Selection (03-173) [Weber]
  - 4.5 SAM-3 Hard reset generates I\_T nexus loss (03-184) [Elliott]
5. Command Set Topics
  - 5.1 Persistent Reserve Out Functionality for Reserve/Release Replacement (02-141) [Peterson]
  - 5.2 Ordered SCSI proposal (02-283) [Peterson]
  - 5.3 Two persistent Reservations Problems - Update & Decision Required (02-483) [Cummings]
  - 5.4 Yet More Persistent Reservation Fixes (03-094) [Penokie]
  - 5.5 RBC Defect Report (03-021) (RBC-A) [Atkinson, Roberts]
  - 5.6 SES-2 Enclosure/Array Control Device Element for device activity (03-059) [Sheffield]
  - 5.7 SPC-3 MSB and LSB labels (03-127) [Elliott]
  - 5.8 Should security erase be mandatory in SBC-2? [Lohmeyer]
  - 5.9 QErr=01b & CHECK CONDITION Initiator (03-172) [Weber]
  - 5.10 SES-2 Array Control and Array Status diagnostic pages (reflector message #3976) [Elliott]
  - 5.11 SPC-3:New Inquiry VPD Page - Management Network Address (03-183) [Binford]
  - 5.12 SPC-3: Un-hiding S.M.A.R.T. (03-169r0) [Lohmeyer]
6. SCSI Protocol Topics
7. Old Business
8. New Business
  - 8.1 End-to-End Data Protection Proposal (03-110, 03-111) [Houlder]
  - 8.2 Simplified End-to-End Data Protection (03-176) [Penokie]
9. Review of Documents
  - 9.1 SRP-2 Review (SRP-2) [Simpson]
10. Review of Recommendations to the Plenary
11. Meeting Schedule
12. Adjournment

\*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](mailto:incits@itic.org) Telephone: 202-737-8888 FAX: 202-638-4922

## Results of Meeting

### 1. Opening Remarks

John Lohmeyer, the T10 Chair, called the meeting to order at 9:00 a.m., Wednesday May 7, 2003. He thanked Zane Daggett of Hitachi Cable Manchester 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 no changes.

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

5.12 SPC-3: Un-hiding S.M.A.R.T. (03-169r0) [Lohmeyer]

### 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.	rkroberts@aol.com
Ms. Pat Thaler	V	Agilent Technologies	pat_thaler@agilent.com
Dr. Claudio DeSanti	P	Andiamo Systems, Inc.	cds@andiamo.com
Mr. John Tyndall	A	Crossroads Systems, Inc.	jtyndall@crossroads.com
Mr. Titkwan Hui	A	Dallas Semiconductor	tk.hui@dalsemi.com
Mr. David Black	A	EMC Corp.	black_david@emc.com
Mr. Robert H. Nixon	P	Emulex	bob.nixon@emulex.com
Mr. Ralph O. Weber	P	ENDL Texas	roweber@acm.org
Mr. Nathan Hastad	P	General Dynamics	nathan.hastad@gd-ais.com
Mr. Rob Elliott	P	Hewlett Packard Co.	Elliott@hp.com
Mr. Zane Daggett	P	Hitachi Cable Manchester	zdaggett@hcm.hitachi.com
Mr. George O. Penokie	P	IBM / Tivoli Systems	gop@us.ibm.com
Mr. Cris Simpson	P	Intel Corp.	cris.simpson@intel.com
Mr. Robert Sheffield	A	Intel Corp.	robert.l.sheffield@intel.com
Mr. John Lohmeyer	P	LSI Logic Corp.	lohmeier@t10.org
Mr. Keith Holt	V	LSI Logic Corp.	keith.holt@lsil.com
Mr. Mark Evans	P	Maxtor Corp.	mark_evans@maxtor.com
Mr. Rich Ramos	V	MTI	rich@chi.mti.com
Mr. Edward A. Gardner	AV	Ophidian Designs	eag@ophidian.com
Mr. Bill Galloway	P	Pivot3, Inc.	billg@pivot3.com
Mr. Craig W. Carlson	A#	QLogic Corp.	craig.carlson@qlogic.com
Mr. Paul Entzel	P	Quantum Corp.	paul.entzel@quantum.com
Mr. Gerald Houlder	P	Seagate Technology	gerry.houlder@seagate.com
Mr. Gary D. Moorhead	V	Seagate Technology	gary.moorhead@seagate.com
Mr. Vit Novak	P	Sun Microsystems, Inc.	vit.novak@sun.com
Mr. Charles Binford	A	Sun Microsystems, Inc.	Charles.Binford@sun.com
Mr. Robert Kando	A.	Texas Instruments	Robert_Kando@ti.com
Mr. Ron Mathews	P	UNISYS Corporation	ronald.mathews@unisys.com

Mr. Roger Cummings	P	Veritas Software	roger.cummings@veritas.com
Mr. Kenneth Hirata	P	Vixel Corp.	Ken.Hirata@Vixel.com

30 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, SPC-3, and SBC power conditions proposal (02-464) [Evans]

Mark Evans presented a proposal to make the power management feature consistent between SAM-3, SPC-3, and SBC-2 (02-464r2). The group requested minor editorial changes and Mark agreed to prepare a new revision.

Mark Evans moved that 02-464r3 (r2 as modified) be recommended for inclusion in SPC-3, SAM-3, and SBC-2. Rob Elliott seconded the motion. In the absence of any objections the motion passed unanimously.

### 4.2 Remove ULP and LLP from SAM-3 (03-003) [Weber]

Ralph Weber presented a proposal to remove the confusing use of ULP and LLP from SAM-3 (03-003r1). The group requested minor changes and Ralph agreed to prepare a new revision.

Ralph Weber moved that 03-003r2 (r1 as modified) be recommended for inclusion in SAM-3. George Penokie seconded the motion. In the absence of any objections the motion passed unanimously.

### 4.3 Calls and Arguments in SAM-3 (03-108) [Weber]

Ralph Weber presented a proposal intended to make the usage of call and arguments consistent in SAM-3 (03-108r1). The group requested minor changes and Ralph agreed to prepare a new revision.

Ralph Weber moved that 03-108r2 (r1 as modified) be recommended for inclusion in SAM-3. Mark Evans seconded the motion. In the absence of any objections the motion passed unanimously.

### 4.4 Task Management Incorrect Logical Unit Selection (03-173) [Weber]

Ralph Weber presented a proposal to define a task management function service response for Incorrect Logical Unit Selection (03-173r0). The group discussed whether the proposed new service response is needed.

Ralph Weber moved that 03-173r0 be recommended for inclusion in SAM-3. Mark Evans seconded the motion. In the absence of any objections the motion passed unanimously.

### 4.5 SAM-3 Hard reset generates I\_T nexus loss (03-184) [Elliott]

Rob Elliott presented a proposal to add a requirement that hard reset conditions generate I\_T nexus loss conditions (03-184r0). Rob noted that the proposal simply adds text to match lines in existing SAM-3 figures.

The group requested minor changes and Rob agreed to prepare a revised proposal.

Rob Elliott moved that 03-184r1 (r0 as modified) be recommended for inclusion in SAM-3. Ralph Weber 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]**

In the absence of Dave Peterson, discussion of this topic was deferred to the next meeting.

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

In the absence of Dave Peterson, discussion of this topic was deferred to the next meeting.

### **5.3 Two persistent Reservations Problems - Update & Decision Required (02-483) [Cummings]**

Roger Cummings presented a proposal to change the way Persistent Reservations interact with Reserve/Release reservations (03-483r1). The group suggested that defining a new command that converts a Reserve/Release reservation to a Persistent Reservation should solve Roger's first problem. It was noted that a solution that accounts for error recovery issues probably will require adding text defining a new behavior for the RELEASE command in SPC-3.

The group discussed Roger's second problem and recommended defining a Move Reservation PERSISTENT RESERVE OUT service action.

Roger agreed to prepare a new proposal for consideration at the next meeting.

### **5.4 Yet More Persistent Reservation Fixes (03-094) [Penokie]**

George Penokie presented a proposal to correct several problems in the definition of persistent reservations introduced by the All Registrants type persistent reservation (03-094r2).

George noted that discussions by e-mail have resulted in revisions to the proposal that makes a PREMPT AND ABORT remove all registrations. The group discussed this change and reached agreement that the change is appropriate.

The group requested minor changes in the proposal and George agreed to prepare a new revision.

Ralph Weber moved that 03-094r3 (r2 as modified) be recommended for inclusion in SPC-3. Roger Cummings seconded the motion. In the absence of any objections the motion passed unanimously.

### **5.5 RBC Defect Report (03-021) (RBC-A) [Atkinson, Roberts]**

Ron Roberts and John Lohmeyer reported that the RBC amendment has been posted and that a letter ballot will begin at the end of the week.

### **5.6 SES-2 Enclosure/Array Control Device Element for device activity (03-059) [Sheffield]**

Bob Sheffield presented a proposal to define a DR\_ACT bit in SES-2 (03-059r1). No concerns were expressed regarding the proposal.

Bob Sheffield moved that 03-059r1 be recommended for inclusion in SES-2. Rob Elliott seconded the motion. In the absence of any objections the motion passed unanimously.

### **5.7 SPC-3 MSB and LSB labels (03-127) [Elliott]**

Rob Elliott presented a proposal to remove some MSB and LSB labels in SPC-3 (03-127r1). The group discussed the effects of the proposal on the way ASCII strings are represented in SPC-3 and concluded that no technical changes result.

Ralph Weber mentioned the possibility of applying the conventions introduced by the proposal to padded strings and it was agreed that such a change should be considered editorial.

Rob Elliott moved that 03-127r1 be recommended for inclusion in SPC-3. Gerry Houlder seconded the motion. The motion passed 11:1:4.

### **5.8 Should security erase be mandatory in SBC-2? [Lohmeyer]**

John Lohmeyer presented a request from Gordon Hughes (Center for Magnetic Recording Research) to make the SBC-2 security erase function mandatory. John mentioned a claim by Gordon that ATA drives generally provide security erase while SCSI drives do not. Some people present questioned this claim.

The group discussed the mechanisms and needs for the security erase function.

Mark Evans reported on the ATA definition of security erase, noting that the implementation is far more subject to vendor interpretation than the SCSI feature.

The group reviewed the SCSI definition as it currently reads in SBC-2.

Ralph Weber moved that the SBC-2 editor be instructed to make the SI bit mandatory and make any necessary additional changes. John Lohmeyer seconded the motion. The motion failed 2:7:8.

### **5.9 QErr=01b & CHECK CONDITION Initiator (03-172) [Weber]**

Ralph Weber presented a proposal to clarify which tasks receive TASK ABORTED status after a CHECK CONDITION is returned and the QErr value is 01b.

The group requested that changes be made to clarify and simplify the proposal and Ralph agreed to prepare a new revision.

Ralph Weber moved that 03-172r1 (r0 as modified) be recommended for inclusion in SPC-3. Bill Galloway seconded the motion. The motion passed 13:0:4.

### **5.10 SES-2 Array Control and Array Status diagnostic pages (reflector message #3976) [Elliott]**

Rob Elliott brought a T10 reflector message (#3976) he sent on April 24, 2003 to the group's attention. He noted that a formal proposal might be presented at the next meeting.

### **5.11 SPC-3:New Inquiry VPD Page - Management Network Address (03-183) [Binford]**

Charles Binford presented a proposal to add a VPD page to return the network management address (e.g., IP address or URL). The group provided Charles with advice regarding improvements for the proposal.

It was suggested that the proposal should be written for incorporation in MSC instead of SPC-3 and that the function should be defined as part of a well-known logical unit.

Closer coordination with the ongoing changes in FC-GS-4 was recommended.

Charles agreed to work with the interested parties to prepare a revised proposal for consideration at the next meeting.

#### **5.12 SPC-3: Un-hiding S.M.A.R.T. (03-169r0) [Lohmeyer]**

John Lohmeyer presented a proposal to add a note describing SMART in the Information Exceptions mode page. The group requested changes in the proposal and John agreed to prepare a new revision.

John Lohmeyer moved that 03-169r1 (r0 as modified) be recommended for inclusion in SPC-3. Mark Evans seconded the motion. The motion passed 12:2:1.

### **6. SCSI Protocol Topics**

No SCSI protocol topics were brought to the group.

### **7. Old Business**

No old business was brought to the group.

### **8. New Business**

#### **8.1 End-to-End Data Protection Proposal (03-110, 03-111) [Houlder]**

Gary Moorhead presented a proposal for end-to-end data protection (03-110r1).

The group discussed the principles of end-to-end data protection.

Gary agreed to bring his detailed proposal (03-111) to the next meeting.

#### **8.2 Simplified End-to-End Data Protection (03-176) [Penokie]**

George Penokie presented a proposal for simplified end-to-end data protection (03-176r0).

The group discussed the usage of LBA information to identify the position of data sent. George agreed to study the addition a second field based on an application client view of LBA position information for end-to-end position whereas LBA might be used by a RAID controller for position information in relationship to its backing storage.

The group discussed the proposed extensions to existing commands.

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

### **9. Review of Documents**

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

At the request of Cris Simpson, discussion of this topic 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, SPC-3, & SBC-2:

SAM-3, SPC-3, and SBC power conditions proposal (02-464r3) [Evans] {modified}

For inclusion in SAM-3:

Remove ULP and LLP from SAM-3 (03-003r2) [Weber] {modified}

Calls and Arguments in SAM-3 (03-108r2) [Weber] {modified}

Task Management Incorrect Logical Unit Selection (03-173r0) [Weber]

SAM-3 Hard reset generates I\_T nexus loss (03-184r1) [Elliott] {modified}

For inclusion in SPC-3:

Yet More Persistent Reservation Fixes (03-094r3) [Penokie] {modified}

SPC-3 MSB and LSB labels (03-127r1) [Elliott] {11:1:4}

QErr=01b & CHECK CONDITION Initiator (03-172r1) [Weber] {13:0:4, modified}

SPC-3: Un-hiding S.M.A.R.T. (03-169r1) [Lohmeyer] {12:2:1, modified}

For inclusion in SES-2:

SES-2 Enclosure/Array Control Device Element for device activity (03-059r1) [Sheffield]

## 11. Meeting Schedule

The next meeting of the SCSI Commands, Architecture, and Protocols Working Group will be Tuesday, July 8, 2003 commencing at 1:30 p.m. and continuing Wednesday, July 9, 2003 from 9 a.m. to 7 p.m. (or until all agenda items are completed). The meeting will be in Colorado Springs, CO at the Wyndham Colorado Springs Hotel (719-260-1800), hosted by LSI Logic.

## 12. Adjournment

The meeting was adjourned at 5:45 p.m. on Wednesday May 7, 2003.