

Accredited Standards Committee\*  
**National Committee for Information Technology Standards (NCITS)**

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Date: October 11, 2001

Reply to: John Lohmeyer

To: T10 Membership  
From: Ralph Weber and John Lohmeyer  
Subject: SCSI Commands, Architecture, & Protocol Working Group Meeting -- September 12, 2001  
Huntington Beach, CA

## Agenda

1. Opening Remarks
2. Approval of Agenda
3. Attendance and Membership
4. SCSI Architecture Model Topics
  - 4.1 Definition of Well Known Logical Units (01-068) [Penokie]
  - 4.2 Names, Addresses, Identifiers, Oh my! (01-084) [Penokie]
  - 4.3 Replacing Task Identifiers in SAM-2 (01-196) [Weber]
  - 4.4 It's the I\_T Nexus, Stupid (01-093) [Weber]
  - 4.5 SRP Protocol Identifiers (01-104r0) [Gardner]
  - 4.6 SCSI MIB (01-163) [Krueger/Penokie]
  - 4.7 Clearing CA on ABORT TASK message (01-212) [Penokie]
  - 4.8 Flat Space Addressing Method (01-252) [Penokie]
  - 4.9 Aborting Tasks During Reset Loophole (01-264) [Penokie]
  - 4.10 Tagged queuing support w/o queuing [Oetting]
  - 4.11 SAM-2 Issues from Editors' Meeting [Weber]
5. Command Set Topics
  - 5.1 Unit attention issue (00-359) [Gardner]
  - 5.2 SCSI Device Memory Export Protocol (00-312) [Barry]
  - 5.3 SAN Management & Mode Pages (01-046) [Cummings]
  - 5.4 REPORT ADDRESSABLE TARGETS well-known LUN Function [Terrell]
  - 5.5 SPC-3 letting persistent reservations ignore target ports (01-099) [Elliott]
  - 5.6 SPC-3 letting persistent reservations ignore initiator ports (01-100) [Elliott]
  - 5.7 SPC-3 CMD DT for Variable Length CDBs (01-198) [Elliott]
  - 5.8 SPC-3 Request Sense Information field for long LBAs (01-199) [Elliott]
  - 5.9 Access Controls TransportIDs for SBP, SRP and iSCSI (01-181) [Hafner/Elliott]
  - 5.10 Access Controls for SPC-3 (the rewrite) (01-268) [Weber/Hafner]
  - 5.11 Interlocking BUSY, RESERVATION CONFLICT and TASK SET FULL (01-267) [Satran/Hafner]
  - 5.12 SBC-2 Long LBA PMI support for READ CAPACITY (01-246) [Elliott]
  - 5.13 SPC-3 Informational exceptions log page (01-247) [Elliott]
  - 5.14 Report Supported Operation Codes Command (01-253) [Penokie]
  - 5.15 Sense Codes for delivery subsystem errors (01-269) [Satran]
  - 5.16 Obsolete CAP bit in SSC-2 (01-281) [Peterson]
  - 5.17 Persistent Reservations Enhancements (01-234) [Cummings]
6. SCSI Protocol Topics
  - 6.1 SRP Initiator Inactivity Timeout (01-038) [Simpson]
  - 6.2 SRP alias entry designation formats (01-193) [Elliott]

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7. Old Business
  - 7.1 The Handling of Protocol Specific Code Values and Data Structures Related to Commands [Gardner]
  - 7.2 Proposed Resolution of Public Review comments on FCP-2 (01-197) [Snively]
8. New Business
9. Review of Documents
  - 9.1 SBC-2 Review [Elliott]
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 September 12, 2001. He thanked Skip Jones of QLogic 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:

- 4.10 Tagged queuing support w/o queuing [Oetting]
- 5.16 Obsoleting CAP bit in SSC-2 (01-281) [Peterson]
- 5.17 Persistent Reservations Enhancements (01-234) [Cummings]

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

- 4.11 SAM-2 Issues from Editors' Meeting [Weber]

### 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. Robert Snively	P	Brocade Comm. Systems, Inc.	rsnively@brocade.com
Mr. David Peterson	P	Cisco Systems, Inc.	dap@cisco.com
Mr. Robert C. Elliott	P	Compaq Computer Corp.	Robert.Elliott@compaq.com
Mr. Wayne Bellamy	V	Compaq Computer Corp.	wayne.bellamy@compaq.com
Mr. Robert Griswold	P	Crossroads Systems, Inc.	rgriswold@crossroads.com
Mr. Kevin Marks	P	Dell Computer Corp.	kevin_marks@dell.com
Mr. Robert H. Nixon	P	Emulex	bob.nixon@emulex.com
Mr. Ralph O. Weber	P	ENDL Texas	roweber@acm.org
Mr. George O. Penokie	P	IBM / Tivoli Systems	gop@us.ibm.com
Mr. Kevin Butt	AV	IBM Corp.	kdbutt@us.ibm.com

Mr. John Lohmeyer	P	LSI Logic Corp.	lohmeier@t10.org
Mr. Mark Evans	P	Maxtor Corp.	mark_evans@maxtor.com
Mr. Paul Entzel	P	Quantum Corp.	paul.entzel@quantum.com
Mr. Gerald Houlder	P	Seagate Technology	gerry_houlder@seagate.com
Mr. Erich Oetting	P	Storage Technology Corp.	erich_oetting@stortek.com
Mr. Kenneth Moe	P	Sun Microsystems, Inc.	kenneth.moe@sun.com
Mr. Donald R. Getty	A	Texas Instruments	donald_getty@ti.com
Mr. Ron Mathews	AV	UNISYS Corporation	ronald.mathews@unisys.com
Mr. Roger Cummings	P	Veritas Software	roger.cummings@veritas.com

21 People Present

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

## 4. SCSI Architecture Model Topics

### 4.1 Definition of Well Known Logical Units (01-068) [Penokie]

George Penokie reviewed the history that led to the latest revision of the well known LUNs proposal (01-068r5). The group noted some typographical errors in the proposal and George agreed to prepare a new revision correcting them. The group requested some changes in the format of the REPORT LUNS command. George Penokie moved that 01-068r6 (r5 as revised) be recommended for inclusion in SAM-2 and SPC-3. Gerry Houlder seconded the motion. The motion passed on a vote of 10:0:0.

### 4.2 Names, Addresses, Identifiers, Oh my! (01-084) [Penokie]

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

### 4.3 Replacing Task Identifiers in SAM-2 (01-196) [Weber]

Ralph Weber asked that discussion of this topic be deferred to the next meeting.

### 4.4 It's the I\_T Nexus, Stupid (01-093) [Weber]

Ralph Weber asked that discussion of this topic be deferred to the next meeting.

### 4.5 SRP Protocol Identifiers (01-104r0) [Gardner]

Ed Gardner, by email, asked that this topic be removed from future agendas.

### 4.6 SCSI MIB (01-163) [Krueger/Penokie]

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

### 4.7 Clearing CA on ABORT TASK message (01-212) [Penokie]

George Penokie presented 01-212r1, a proposal to explicitly state that the ABORT TASK task management function does not clear contingent allegiance. George Penokie moved that 01-212r1 be recommended for inclusion in SAM-2. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

#### **4.8 Flat Space Addressing Method (01-252) [Penokie]**

George Penokie presented 01-252r0, a proposal to define the 01b address method in SAM-2. The proposal gave the addressing method a definition compatible with its current usage in SCC-2 but general enough to allow usage by any device type. George Penokie moved that 01-252r0 be recommended for inclusion in SAM-2. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

#### **4.9 Aborting Tasks During Reset Loophole (01-264) [Penokie]**

George Penokie presented 01-264r0, a proposal clarify a misinterpretation of the reset specification in SAM-2. The group requested changes. George Penokie moved that 01-264r1 (r0 as modified) be recommended for inclusion in SAM-2. Erich Oetting seconded the motion. In the absence of any objections, the motion was approved unanimously.

#### **4.10 Tagged queuing support w/o queuing [Oetting]**

Erich Oetting asked what actions are required from a device that has both BQue and CmdQue set to zero in its INQUIRY data when that device receives a tagged command. Is the device required to reject the command? The group consensus was that the device is allowed but not required to reject the command.

#### **4.11 SAM-2 Issues from Editors' Meeting [Weber]**

Ralph Weber presented three issues raised by the SAM-2 editors meeting, see the special bookmarks in 01-293r0. The group approved the Data-Out buffer rewrite and recommended minor wording changes in the autosense rewrite. No resolution was reached on the aborting of a task with ACA Attribute when a CLEAR ACA task management function is processed. Ralph will have to contact Charles Binford to ascertain the reason for the questionable text.

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

#### **5.1 Unit attention issue (00-359) [Gardner]**

In the absence of Ed Gardner, Rob Elliott and George Penokie presented 00-359r3.

The group discussed 00-359r3 and requested changes. Rob Elliott agreed to communicate the group's requests to Ed Gardner.

John Lohmeyer agreed to move this item to the architecture part of the agenda for the next meeting.

#### **5.2 SCSI Device Memory Export Protocol (00-312) [Barry]**

In the absence of Andrew Barry, discussion of this topic was deferred to the next meeting.

#### **5.3 SAN Management & Mode Pages (01-046) [Cummings]**

Roger Cummings said that a project proposal has been generated but he felt that further action needs to be deferred until the MIB structure gets better focused.

#### **5.4 REPORT ADDRESSABLE TARGETS well-known LUN Function [Terrell]**

In the absence of Bill Terrell, discussion of this topic was deferred to the next meeting.

**5.5 SPC-3 letting persistent reservations ignore target ports (01-099) [Elliott]**

Rob Elliott presented 01-099r3, the proposal to allow persistent reservations based on initiator name instead of initiator port identifier. The problem with old initiators accessing new devices was not fully solved in this revision of the proposal and Rob agreed to prepare a new revision for the next meeting.

**5.6 SPC-3 letting persistent reservations ignore initiator ports (01-100) [Elliott]**

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

**5.7 SPC-3 CMD DT for Variable Length CDBs (01-198) [Elliott]**

Rob Elliott stated that 01-198 should be subsumed by 01-253 (item 5.14) and asked that this item be removed from future agendas.

**5.8 SPC-3 Request Sense Information field for long LBAs (01-199) [Elliott]**

Rob Elliott presented 01-199r0, a proposal to cleanup several problems in the format of the REQUEST SENSE data. The group agreed with Rob's preferred choice for handling the long LBAs values, recommending that the least significant bits of the long LBA be placed in the INFORMATION field. Rob stated that a formal proposal will be prepared for consideration at the next meeting.

**5.9 Access Controls TransportIDs for SBP, SRP and iSCSI (01-181) [Hafner/Elliott]**

Rob Elliott presented 01-181r0, a proposal for TransportIDs for SBP, SRP, and iSCSI. Rob moved that 01-181r0 be accepted by the group noting that acceptance means rolling its contents in 01-268. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

**5.10 Access Controls for SPC-3 (the rewrite) (01-268) [Weber/Hafner]**

Ralph Weber presented 01-268r1, a rewrite of the access controls proposal previously approved under several document numbers. A number of corrections were recommended and Ralph agreed to prepare a revision for the next meeting.

**5.11 Interlocking BUSY, RESERVATION CONFLICT and TASK SET FULL (01-267) [Satran/Hafner]**

In the absence of both Jim Hafner and Julian Satran, Ralph Weber presented 01-267r0 a proposal to initiate an interlocked unit attention following a BUSY, RESERVATION CONFLICT and TASK SET FULL. The group asked that the feature be enabled via a Control mode page bit other than the UAINTLCK bit (see item 5.1 and 00-359r3). The group asked that the text of the proposed ASC/ASCQs be changed. The group stated that the proposal was not ready for a recommendation at this time. Ralph Weber agreed to communicate the needed changes to Julian Satran and Jim Hafner.

**5.12 SBC-2 Long LBA PMI support for READ CAPACITY (01-246) [Elliott]**

Rob Elliott presented 01-264r0 a proposal to add 2 TB support to the partial medium indicator function in READ CAPACITY by creating a READ CAPACITY(16) command. In response to Rob's request for an operation code for READ CAPACITY(16), he was assigned operation code 9Eh and service action code 10h. Rob agreed to bring a revised proposal to the next meeting.

### **5.13 SPC-3 Informational exceptions log page (01-247) [Elliott]**

Rob Elliott presented 01-247r0, a proposal to assign log page code 2Fh to informational exceptions. The group asked that the proposal be simplified and Rob agreed to prepare r1. Rob Elliott moved that 01-247r1 (r0 as modified) be recommended for inclusion in SPC-3. Gerry Houlder seconded. The motion passed on a vote of 6:2:4.

### **5.14 Report Supported Operation Codes Command (01-253) [Penokie]**

George Penokie presented a proposal to add a REPORT SUPPORTED OPERATION CODES command to SPC-3, 01-253r1. The group asked for several changes and George agreed to prepare a new revision for the next meeting.

### **5.15 Sense Codes for delivery subsystem errors (01-269) [Satran]**

Ralph Weber moved that four ASC/ASCQ values described in 01-269r0 be recommended for inclusion in SPC-3. Charles Monia seconded the motion. The motion passed on a vote of 10:0:9.

### **5.16 Obsoleting CAP bit in SSC-2 (01-281) [Peterson]**

Dave Peterson presented 01-281r0, a proposal that the CAP bit be obsoleted in SSC-2. Bob Snively moved that 01-281r0 be recommended for inclusion in SSC-2. Erich Oetting seconded the motion. In the absence of any objections, the motion passed unanimously.

### **5.17 Persistent Reservations Enhancements (01-235) [Cummings]**

Roger Cummings presented a defense of the need for enhancements to persistent reservations (01-235r1).

He requested agenda time in November to review a detailed proposal for changes, 01-204.

## **6. SCSI Protocol Topics**

### **6.1 SRP Initiator Inactivity Timeout (01-038) [Simpson]**

In the absence of Cris Simpson, discussion of this topic was deferred to the next meeting.

### **6.2 SRP alias entry designation formats (01-193) [Elliott]**

Rob Elliott asked that this item be removed future agendas.

## **7. Old Business**

### **7.1 The Handling of Protocol Specific Code Values and Data Structures Related to Commands [Gardner]**

The group discussed where command parameter data that is specific to a protocol should appear. The choices were in SPC-x or in the protocol standard. It was agreed that protocol specific parameter data should be defined in SPC-x.

### **7.2 Proposed Resolution of Public Review comments on FCP-2 (01-197) [Snively]**

Bob Snively presented the resolution of FCP-2 public review comments, 01-197r0. Concerns were raised about the specific wording for savable mode pages. Bob Snively moved that 01-197r1 (r0 as modified) be recommended as resolving the FCP-2 Public Review comment. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

## **8. New Business**

No new business was brought before this meeting.

## **9. Review of Documents**

### **9.1 SBC-2 Review [Elliott]**

This topic was not covered and will be 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:

- That 01-212r1 "Clearing CA on ABORT TASK" be included in SAM-2
- That 01-264r1 (r0 as revised) "Aborting Tasks During Reset Loophole" be included in SAM-2
- That 01-252r0 "Flat Space Addressing Method" be included in SAM-2
- That 01-068r6 (r5 as revised) "Definition of Well Known Logical Units" be included in SAM-2 and SPC-3
- That 01-247r1 (r0 as revised) "Informational exceptions log page" be included in SPC-3 (6:2:4)
- That 01-269r0 "Sense Codes for delivery subsystem errors" be included in SPC-3 (10:0:9)
- That 01-281r0 "Obsoleting CAP bit" be included in SSC-2

## **11. Meeting Schedule**

The next meeting of the SCSI Commands, Architecture, and Protocols Working Group will be Wednesday, November 7, 2001 from 9 a.m. to 7 p.m. (or until all agenda items are completed). The meeting will be at the Embassy Suites Hotel (831-393-1115) in Seaside, CA, hosted by Adaptec.

## **12. Adjournment**

The meeting was adjourned at 7:10 p.m. on Wednesday September 12, 2001.