

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

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Date: July 24, 2001

Reply to: John Lohmeyer

To: T10 Membership  
From: Ralph Weber and John Lohmeyer  
Subject: SCSI Commands, Architecture, & Protocol Working Group Meeting -- July 18, 2001  
Colorado Springs, CO

## 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 L\_T Nexus, Stupid (01-093) [Weber]
  - 4.5 Long Identifiers in SPC-3, SAM-2, SBC-2 and other XOR issues (00-425) [Hafner]
  - 4.6 SRP Protocol Identifiers (01-104r0) [Gardner]
  - 4.7 SAM-2, SPC-3, SPI-4, SBC-2 WAKEUP and reset cleanup (01-134) [Elliott]
  - 4.8 SCSI MIB (01-163) [Krueger]
  - 4.9 SAM-2 device and port names (01-182) [Hafner]
  - 4.10 SAM-2 layering terminology proposal (01-185) [Simpson]
  - 4.11 Does ABORT TASK Clear CA? (01-212) [Penokie]
5. Command Set Topics
  - 5.1 Unit attention issue (00-359) [Gardner]
  - 5.2 SCSI Device Memory Export Protocol (00-312) [Barry]
  - 5.3 Media Serial Number Mode Page Proposal (01-027) [Hill]
  - 5.4 SAN Management & Mode Pages (01-046) [Cummings]
  - 5.5 REPORT ADDRESSABLE TARGETS well-known LUN Function [Terrell]
  - 5.6 SPC-3 letting persistent reservations ignore target ports (01-099) [Elliott]
  - 5.7 SPC-3 letting persistent reservations ignore initiator ports (01-100) [Elliott]
  - 5.8 Project Proposal for Management Server Commands (01-095) [Penokie/Elliott]
  - 5.9 SPC-3 CMD DT for Variable Length CDBs (01-198) [Elliott]
  - 5.10 SPC-3 EXTENDED COPY target descriptor for SRP (01-192) [Elliott]
  - 5.11 SPC-3 Request Sense Information field for long LBAs (01-199) [Elliott]
  - 5.12 Access Controls TransportIDs for SBP, SRP and iSCSI (01-181) [Hafner/Elliott]
  - 5.13 SBC-2 Reassign Blocks 2 TBytes Support (01-210) [Penokie]
  - 5.14 Connected Media Changers in SMC-2 (01-211) [Oetting]
  - 5.15 SBP-3 EXTENDED COPY Target Descriptor (01-174r2) [Johansson/Weber]
  - 5.16 Interlocking BUSY, RESERVATION CONFLICT and TASK SET FULL (01-219) [Gardner]
6. SCSI Protocol Topics
  - 6.1 SRP Initiator Inactivity Timeout (01-038) [Simpson]
  - 6.2 SRP alias entry designation formats (01-193) [Elliott]
7. New Business
  - 7.1 Proposed Resolution of Public Review comments on SPC-2 (01-194) [Weber]

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**NCITS Secretariat, Information Technology Industry Council (ITI)**

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- 7.1.1 Public Review Comment #1 on NCITS 351 (SPC-2) (01-161) [Penokie]
- 7.1.2 Public Review Comment #2 on NCITS 351 (SPC-2) (01-174) [Johansson]
- 7.1.3 Public Review Comment #3 on NCITS 351 (SPC-2) (01-175, 01-204) [Cummings]
- 7.2 Proposed Resolution of Public Review comments on FCP-2 (01-197) [Snively]
  - 7.2.1 Public Review Comment #1 on NCITS 350 (FCP-2) (01-176, 01-203) [Cummings]
  - 7.2.2 Editorial Corrections to FCP-2 (01-220) [Snively]
- 7.3 The Handling of Protocol Specific Code Values and Data Structures Related to Commands [Gardner]
- 8. Review of Documents
  - 8.1 SBC-2 Review [Elliott]
- 9. Review of Recommendations to the Plenary
- 10. Meeting Schedule
- 11. Meeting Recessed
- 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 18, 2001. 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:

- 4.11 Does ABORT TASK Clear CA? (01-212) [Penokie]
- 5.14 Connected Media Changers in SMC-2 (01-211) [Oetting]

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

- 5.15 SBP-3 EXTENDED COPY Target Descriptor (01-174r2) [Johansson/Weber]
- 5.16 Interlocking BUSY, RESERVATION CONFLICT and TASK SET FULL (01-219) [Gardner]
- 7.3 The Handling of Protocol Specific Code Values and Data Structures Related to Commands [Gardner]

### 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. Robert C. Elliott	P	Compaq Computer Corp.	Robert.Elliott@compaq.com
Mr. Peter Johansson	P	Congruent Software, Inc.	PJohansson@ACM.org
Mr. Robert Griswold	P	Crossroads Systems, Inc.	rgriswold@crossroads.com

Mr. John Tyndall	A	Crossroads Systems, Inc.	jtyndall@crossroads.com
Mr. Ralph O. Weber	P	ENDL Texas	roweber@acm.org
Mr. Joe Breher	P	Exabyte Corp.	joebre@exabyte.com
Mr. Steve Wong	A#	FCI	sywong@fciconnect.com
Mr. Tim Mackley	A	General Dynamics	timothy.a.mackley@gd-is.com
Mr. Naoki Watnabe	V	Hitachi America	naokiwatnabe@hds.com
Mr. George O. Penokie	P	IBM / Tivoli Systems	gpenokie@tivoli.com
Dr. Jim Hafner	V	IBM Corp.	hafner@almaden.ibm.com
Mr. Cris Simpson	P	Intel Corp.	cris.simpson@intel.com
Mr. Dennis Moore	P	KnowledgeTek, Inc.	dmoore@ix.netcom.com
Mr. John Lohmeyer	P	LSI Logic Corp.	lohmeier@t10.org
Mr. Mark Evans	P	Maxtor Corp.	mark_evans@maxtor.com
Ms. Emily Hill	P	Microsoft Corp.	emhill@microsoft.com
Mr. Rob Haydt	A	Microsoft Corp.	robhay@microsoft.com
Mr. Charles Monia	P	Nishan Systems Inc.	cmonia@nishansystems.com
Mr. Edward A. Gardner	P	Ophidian Designs	eag@ophidian.com
Mr. Charles Binford	P	Pirus Networks	charles.binford@pirus.com
Mr. Paul Entzel	P	Quantum Corp.	paul.entzel@quantum.com
Mr. Dwayne Edling	V	Quantum Corp.	dwayne.edling@quantum.com
Mr. Gerald Houlder	P	Seagate Technology	gerry_houlder@seagate.com
Mr. Van T. Ton	AV	Seagate Technology, LLC	Van.T.Ton@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. Vit Novak	A	Sun Microsystems, Inc.	vit.novak@sun.com
Mr. Donald R. Getty	A	Texas Instruments	donald_getty@ti.com
Mr. Roger Cummings	P	Veritas Software	roger.cummings@veritas.com
Mr. Ron Martin	A	Veritas Software	ron.martin@veritas.com
Mr. Bob Schatz	V	Veritas Software	bschatz@veritas.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 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 (01-068r4). He stated that the number of well known LUNs being proposed has been reduced to the REPORT LUNs command, as recommended by the last meeting. He then reviewed the proposal in detail.

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

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

George Penokie reviewed the summary of addresses, names, and identifiers (01-084r3). George received several inputs regarding the content of the document. He agreed to revise the document for additional review at the next meeting. Questions were raised about what will be done with the document and George stated that he was unsure about that. Requests were made to consider added it as an informative annex to SAM-2 but George expressed concerns about that idea.

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

Ralph Weber reviewed a proposal to replace all remaining SAM-2 instances of 'task identifier' with 'I\_T\_L\_x nexus'. Concerns were raised about using 'nexus' (a relationship) to represent a 'task' (an entity). Ralph agreed to prepare a revised proposal for 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 Long Identifiers in SPC-3, SAM-2, SBC-2 and other XOR issues (00-425) [Hafner]**

Jim Hafner presented 00-425r4 a proposal to add aliases for long identifiers and names, reviewing the changes made in response to advice from the last meeting.

Jim Hafner moved that 00-425r4 be recommended for inclusion in SAM-2, SPC-3, and SBC-2. Rob Elliott seconded motion. The motion passed on a vote of 12:1:7.

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

Ed Gardner asked that discussion of this topic be deferred to the next meeting.

#### **4.7 SAM-2, SPC-3, SPI-4, SBC-2 WAKEUP and reset cleanup (01-134) [Elliott]**

Rob Elliott presented a proposal to cleanup wording around the WAKEUP task management function (01-134r1). The group asked for changes in the proposal and Rob agreed to prepare a revised version.

Rob Elliott moved that 01-134r1 (r0 as revised) be recommended for inclusion in SAM-2, SPC-3, SPI-4, and SBC-2. Mark Evans seconded the motion. In the absence of any objections, the motion passed unanimously.

#### **4.8 SCSI MIB (01-163) [Krueger]**

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

#### **4.9 SAM-2 device and port names (01-182) [Hafner]**

Jim Hafner presented a proposal to add SCSI device and port names to SAM-2 (01-182r0). The group discussed whether names should be world wide unique across the globe or within the SCSI domain. Jim agreed to prepare a revision incorporating the group's input.

Jim Hafner moved that 01-182r1 (r0 as modified) be recommended for inclusion in SAM-2. Rob Elliott seconded the motion. The motion passed on a vote of 9:2:11.

#### **4.10 SAM-2 layering terminology proposal (01-185) [Simpson]**

Cris Simpson presented a proposal to adjust terminology used to describe the SCSI layers below the application client and device server.

Cris Simpson moved that 01-185r1 (r0 as revised) be recommended for inclusion in SAM-2 and every document that has a SCSI roadmap. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

#### **4.11 Does ABORT TASK Clear CA? (01-212) [Penokie]**

George Penokie reviewed a very old question about whether an ABORT TASK message clears a contingent allegiance (01-212r0). Gerry Houlder objected that the proposed change probably would make his products not compliant with the standard. Bob Snively suggested that Gerry's products do what George is proposing. Gerry objected to the suggestion that he should retrofit all his firmware in the field.

George was about to withdraw the proposal when, Gerry agreed to check the behavior of his products to see if they conform to the proposed behavior. George agreed to bring the proposal back to the next meeting, provided Gerry can confirm the behavior of his products.

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

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

Ed Gardner presented 00-359r2, a proposal to allow unit attention conditions to persist until an initiator acknowledges receipt of the unit attention sense data (via a REQUEST SENSE command). Ed stated that the proposal effectively rewrites the entire unit attention subclause. The group noted a few errors in the transcription of the current unit attention wording and requested other changes in the proposal. Ed agreed to revise the proposal for additional discussion at 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 Media Serial Number Mode Page Proposal (01-027) [Hill]**

Emily Hill presented a proposal to add a numeric serial number attribute identifier in the MAM proposal already approved for inclusion in SPC-3. (The approved MAM proposal is 99-148r7.) Emily showed the proposal in terms of additions to the 99-148r7 document.

Emily moved that 01-027r2 (the proposal described to the meeting) be recommended for inclusion in SPC-3. Bob Snively seconded the motion. In the absence of any objections, the motion passed unanimously.

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

Roger Cummings asked that discussion of this topic be deferred to the next meeting.

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

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

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

Rob Elliott presented a proposal to require the target to use initiator port names to identify reservations instead of target port plus initiator port, 01-099r2. The group discovered that the proposal as written will break existing initiator software. Rob agreed that the capability must have an enable/disable mechanism under host software control and promised to prepare a revised proposal for the next meeting.

#### **5.7 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.

**5.8 Project Proposal for Management Server Commands (01-095) [Penokie/Elliott]**

This topic was not covered due to lack of time.

Editor's note: The proposal was presented to the T10 Plenary without a working group recommendation and passed.

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

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

**5.10 SPC-3 EXTENDED COPY target descriptor for SRP (01-192) [Elliott]**

Rob Elliott presented 01-192r2, a proposal for an EXTENDED COPY target descriptor unanimously recommended by the SRP working group. It was noted that the descriptor format is not up to date in that it is missing some fields associated with access controls. Ralph Weber agreed to add the fields during incorporation of the proposal.

Rob Elliott moved that 01-192r2 be recommended for inclusion in SPC-3. Bob Griswold seconded the motion. In the absence of any objections, the motion passed unanimously.

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

This topic was not covered due to lack of time.

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

After a brief presentation, Jim Hafner moved that 01-181r0 be recommended for inclusion in SBP-3, SRP, and iSCSI. George Penokie seconded the motion. The motion failed on a vote of 4:5:7.

**5.13 SBC-2 Reassign Blocks 2 TBytes Support (01-210) [Penokie]**

George Penokie reported that the 2 TB proposed mechanism for handling REASSIGN BLOCKS does not apply to the REASSIGN BLOCKS command (01-210r0). He then proposed changes for SBC-2 to correct the problem.

George Penokie moved that 01-210r0 be recommended for inclusion in SBC-2. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

**5.14 Connected Media Changers in SMC-2 (01-211) [Oetting]**

Erich Oetting presented a proposal to identify media changer export/import ports that go to other media changers (01-211r0). He noted that the proposal also clarifies the operation of the PREVENT ALLOW MEDIA REMOVAL to match the description in SPC-2.

Erich Oetting moved that 01-211r0 be recommended for inclusion in SMC-2. Gerry Houlder seconded the motion. In the absence of any objections, the motion passed unanimously.

**5.15 SBP-3 EXTENDED COPY Target Descriptor (01-174r2) [Johansson/Weber]**

Ralph Weber moved that 01-174r2 be recommended for inclusion in SPC-3. Roger Cummings seconded the motion. In the absence of any objections, the motion passed unanimously.

## **5.16 Interlocking BUSY, RESERVATION CONFLICT and TASK SET FULL (01-219) [Gardner]**

Ed Gardner presented a proposal that he developed on behalf of the IETF iSCSI development team (01-219r0). The basic concept of the proposal involves converting BUSY, RESERVATION CONFLICT and TASK SET FULL status codes to CHECK CONDITION status with the original condition being reflected in the additional sense code field of the sense data. With that change in place, iSCSI initiators that are concerned about the effects of one of the named statuses on pipelined commands can enable ACA and the new feature with the result being that occurrence of any one of the statuses gets translated into an ACA Active condition.

It was noted that this proposal is preferable to iSCSI plans to require any of the statuses to always result in an ACA Active condition.

The group raised concerns about how an initiator not holding a reservation can effect a denial of service attack on the initiator holding the reservation by issuing a read to the device and never clearing the resulting ACA Active condition. Ralph Weber agreed to present this issue on the IPS reflector, with help from Ed Gardner to verify that the issue is correctly presented. The results from the IPS reflector discussion will be made available to the next meeting. Ed Gardner agreed to make minor revisions in the proposal based on deficiencies identified by the group.

## **6. SCSI Protocol Topics**

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

Cris Simpson asked that discussion of this topic be deferred to the next meeting.

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

This topic was not covered due to lack of time.

## **7. New Business**

### **7.1 Proposed Resolution of Public Review comments on SPC-2 (01-194) [Weber]**

Ralph Weber and John Lohmeyer introduced the subject of public review comments and the need to apply more rigorous requirements on substantive public review comments than would be applied to a change proposed during development of a standard or during letter ballot.

The group then discussed the three substantive public review comments on SPC-2 (see items 7.1.1 through 7.1.3) and rejected the substantive aspects of each one.

Ralph Weber reviewed the comments resolution document for SPC-2 public review (01-194r3). Ralph Weber moved that the working group recommend that T10 accept 01-194r3 as resolving the public review comments without substantive changes to SPC-2 and that the SPC-2 editor be instructed to prepare SPC-2 revision 20 incorporating the changes described in 01-194r3. Bob Snively seconded the motion. The motion passed on a vote of 24:0:0.

#### **7.1.1 Public Review Comment #1 on NCITS 351 (SPC-2) (01-161) [Penokie]**

George Penokie reviewed the history of the public review comment from IBM/Tivoli. One of the comments appeared to be substantive, adding a requirement that a unit attention condition be generated when vital product data changes. The group agreed that the wording in the change was not substantive because no requirement is stated (a 'may' verses a 'shall') and the existing description of unit attention conditions clearly says that a device server may generate a unit attention condition at any time it deems appropriate.

The only remaining problem with the change was the naming of a new additional sense code. George agreed to make the change non-substantive by using the existing INQUIRY DATA HAS CHANGED additional sense code in place of the proposed new code.

George Penokie moved that 01-161r1 (r0 as modified) be recommended for incorporation in SPC-2 as non substantive changes in response to public review. Gerry Houlder seconded the motion. The motion passed on a vote of 19:0:3.

### **7.1.2 Public Review Comment #2 on NCITS 351 (SPC-2) (01-174) [Johansson]**

Peter Johansson described the history of the public review comment requesting an EXTENDED COPY target descriptor for IEEE 1394 devices.

Peter Johansson moved that the technical changes in 01-174r3 be incorporated in SPC-2 be recommended for inclusion in SPC-2 and accepted as a substantive change from the public review on SPC-2. Ron Roberts seconded the motion. The motion failed on a vote of 1:13:5.

### **7.1.3 Public Review Comment #3 on NCITS 351 (SPC-2) (01-175, 01-204) [Cummings]**

Roger Cummings noted that Veritas is not a member of T10 and thus not permitted to comment on the letter ballot prior to public review. Roger explained the reasoning behind public review comment, assisted by Bob Shats. The group discussed the reservations recovery mechanism as specified today in SPC-2 and concluded that what was being proposed was new behavior not a correction for broken behavior in the current specification.

Roger Cummings requested a straw poll from the group regarding the Veritas public review comment. The results of the straw poll was a unanimous recommendation that Veritas prepare a proposal for SPC-3 describing a new feature addition to the existing persistent reservations functions.

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

In the absence of any agreement on 01-176, discussion of this topic was deferred to a future meeting.

### **7.2.1 Public Review Comment #1 on NCITS 350 (FCP-2) (01-176, 01-203) [Cummings]**

Roger Cummings reviewed the history of the FCP-2 public review comment. The group discussed the details of the behaviors encountered by Veritas that necessitated the public review comment.

Roger Cummings moved that 01-176r0 be recommended for inclusion in FCP-2. Bob Snively seconded the motion. Bob Snively noted that the full implications of 01-176r0 have not been reviewed. George Penokie moved that the motion be deferred to 2 p.m. today. In the absence of any objections the motion to defer was unanimously agreed.

When the deferred motion returned to the floor, Roger and Bob agreed to withdraw the motion, stating that agreement had been reached regarding the existence of a serious problem but that more time would be needed to craft a well considered resolution that was acceptable to all concerned.

### **7.2.2 Editorial Corrections to FCP-2 (01-220) [Snively]**

Bob Snively reviewed the content of 01-220r0 and then moved that 01-220r0 be recommended for inclusion in FCP-2. Ed Gardner seconded the motion. In the absence of any objections, the motion was approved unanimously.

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

This topic was not covered due to lack of time.



Several members of the group expressed disappointment that this topic could not be discussed and requested the chair to give it a high priority at the next meeting.

## **8. Review of Documents**

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

This topic was not covered due to lack of time.

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

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

- That T10 accept 01-194r3 as resolving the public review comments without substantive changes to SPC-2 and that the SPC-2 editor be instructed to prepare SPC-2 revision 20 incorporating the changes described in 01-194r3.
- That 01-182r1 (r0 as modified) be included in SAM-2.
- That 01-134r1 (r0 as revised) be included in SAM-2, SPC-3, SPI-4, and SBC-2.
- That 00-425r4 be included in SPC-3 and SBC-2.
- That 01-185r1 (r0 as revised) be included in SAM-2 and every document that has a SCSI roadmap.
- That 01-174r2 be included in SPC-3.
- That 01-027r2 be included in SPC-3.
- That 01-192r2 be included in SPC-3.
- That 01-210r0 be included in SBC-2.
- That 01-211r0 be included in SMC-2.
- That 01-220r0 be included in FCP-2.

## **10. Meeting Schedule**

The next meeting of the SCSI Commands, Architecture, and Protocols Working Group will be Wednesday, September 12, 2001 from 9 a.m. to 7 p.m., continuing if necessary on Thursday, September 13, 2001 from 8:00 a.m. to 9:45 a.m. (or until all agenda items are completed). The meeting will be at the Hilton Waterfront Hotel (714-960-7873) in Huntington Beach, CA, hosted by QLogic.

## **11. Meeting Recessed**

Because too many items had not been discussed at the nominal adjournment hour of 6:30 p.m. on Wednesday, vice chair George Penokie asked the group's indulgence for a recess to 8:00 a.m. on Thursday morning. This recess was agreed and the meeting recessed at 6:45 p.m. on Wednesday and reconvened at 8:00 a.m. on Thursday.

## **12. Adjournment**

The meeting was adjourned at 8:55 a.m. on Thursday July 19, 2001.