

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

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Date: July 8, 2003

Reply to: John Lohmeyer

To: T10 Membership
From: Ralph Weber and John Lohmeyer
Subject: SAS Protocol WG -- July 7, 2003
Colorado Springs, CO

Agenda

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Results of Meeting

1. Opening Remarks

John Lohmeyer called the meeting to order at 1:30 p.m. Monday, July 7, 2003. He thanked LSI Logic for hosting the meeting. As usual, the people present introduced themselves.

2. Approval of Agenda

The draft agenda was approved with no changes.

No items was added or revised during the course of the meeting.

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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. Walter Rassbach | V | | rassbach@nilenet.com |
| Mr. Richard Chen | V | Acard Technology | rchern@acard.com |
| Mr. Daniel Weng | V | Acard Technology | dweng@acard.com |
| Ms. Pat Thaler | V | Agilent Technologies | pat_thaler@agilent.com |
| Dr. Claudio DeSanti | P | Andiamo Systems, Inc. | cds@andiamo.com |
| Mr. James A. Lott, Jr. | P | Dallas Semiconductor | jim.lott@dalsemi.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. Mike Fitzpatrick | P | Fujitsu | mfitzpatrick@fcpa.fujitsu.com |
| Mr. Rob Elliott | P | Hewlett Packard Co. | Elliott@hp.com |
| Mr. Steven Fairchild | V | Hewlett Packard Co. | Steve.Fairchild@hp.com |
| Mr. Dan Colegrove | P | Hitachi Global Storage Tech. | dcolegro@us.ibm.com |
| Mr. George O. Penokie | P | IBM / Tivoli Systems | gop@us.ibm.com |
| Mr. Pak Seto | V | Intel | pak-lung.seto@intel.com |
| Mr. Robert Sheffield | A | Intel Corp. | robert.l.sheffield@intel.com |
| Mr. Dennis Moore | P | KnowledgeTek, Inc. | dmoore@ix.netcom.com |
| Mr. John Lohmeyer | P | LSI Logic Corp. | lohmeier@t10.org |
| Mr. Brad Besmer | V | LSI Logic Corp. | brad.besmer@lsil.com |
| Mr. Tim Hوجلund | V | LSI Logic Corp. | tim.hوجلund@lsil.com |
| Mr. Mark Evans | P | Maxtor Corp. | mark_evans@maxtor.com |
| Mr. Martin Czekalski | V | Maxtor Corp. | marty_czekalski@maxtor.com |
| Mr. Larrie Carr | V | PMC-Sierra, Inc. | carr@pmc-sierra.com |
| Mr. Craig W. Carlson | A# | QLogic Corp. | craig.carlson@qlogic.com |
| Mr. Don Carothers | V | QLogic Corp. | don.carothers@qlogic.com |
| Mr. Jim Jones | A | Quantum Corp. | jim.jones@quantum.com |
| Mr. Gerald Houlder | P | Seagate Technology | gerry.houlder@seagate.com |
| Mr. Jim Coomes | V | Seagate Technology | jim.coomes@seagate.com |
| Mr. Vit Novak | P | Sun Microsystems, Inc. | vit.novak@sun.com |
| Mr. Haluk Aytac | V | Velio | haluk@velio.com |

30 People Present

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

4. Old Business

4.1 SAS-1.1: CRC on Frame Header [Roberts]

Ron Roberts asked that discussion of this topic removed from future agendas.

4.2 SAS-1.1: Transport Layer Retries (03-186) [Elliott/Jones]

Rob Elliott presented a review of the proposed transport layer retry rules (03-186r1) and a series of ladder diagrams prepared by Jim Jones (03-229r0). The group requested several changes and Rob agreed to prepare a new revision for consideration at the next meeting.

4.3 SAS-1.1: SATA II Port Selector Interoperability (03-155) [Sheffield]

Bob Sheffield asked that discussion of this topic be deferred to the next meeting.

5. New Business

5.1 Results of SAS Public Review [Lohmeyer]

John Lohmeyer reported that the Public Review on SAS closes today. To date, no Public Review comments have been received. However, John stated that INCITS has been requested to suspend processing of SAS pending development of several substantive and non-substantive changes proposed by on the T10 reflector and covered in agenda items 5.2 and 5.3 of this meeting.

John noted that he expects this group to recommend SAS r05 for a second public review.

5.2 SAS Changes from sas-r04 to sas-r04a (03-223) [Elliott]

Rob Elliott presented a summary of the changes between SAS r04 and SAS r04a (03-223r0). He noted that other problems indicate the need for changes in SAS r05. The complete list of changes between SAS r04 and SAS 05 will appear in 03-223r1 to be uploaded after this meeting.

The group reviewed 03-223r0 and the additional changes and advised Rob regarding other minor changes.

Rob Elliott moved that 03-223r1 (r0 as revised) be recommended for inclusion in SAS r05. John Lohmeyer seconded the motion. In the absence of any objections, the motion passed unanimously.

5.3 SAS: Notify primitive issues (03-228) [Penokie]

George Penokie presented a collection of three issues related to the Notify primitive (03-228r1). Rob Elliott noted that one occurrence of misuse of "receives" described in 03-228r1 had been overlooked and George agreed to prepare a new revision.

George Penokie moved that 03-228r2 (r1 as revised) be recommended for inclusion in SAS r05. Rob Elliott seconded the motion. In the absence of any objections, the motion passed unanimously.

5.4 SAS-1.1 Transport Layer Retries Ladder Diagrams (03-229) [Jones/Elliott]

This topic was discussed under item 4.2.

5.5 SES-2 Updated SAS Device Element Status descriptor (03-214r0) [Elliott]

Rob Elliott asked the group to inspect the proposed SAS Device Element Status descriptor for SES-2 (03-214r0). He noted that the proposal will be reviewed and formally recommended by the CAP working group (minutes in 03-247). The group did not request changes in the proposal.

5.6 SAS-1.1 Internal wide connector (03-240) [Elliott]

Rob Elliott presented a proposal for a four-wide SAS internal connector (03-240r0). Rob noted that the locking mechanism is still being discussed and that the connector will be defined in an SFF project. The group discussed the proposal in detail but agreed that no action needs to be taken at this time by this group.

5.7 SAS-1.1 Adding two new protocol services (03-245) [Evans]

Mark Evans presented a proposal for canceling outstanding protocol service transactions on both the initiator and target side (03-245r0).

Mark raised concerns that the proposal depends on adding two transport services to SAM-3. Ralph Weber complained that the proposed SAM-3 changes place new requirements on initiators and applications clients. George Penokie countered that the changes are needed to support protocols (e.g., SAS) being developed by T10.

The group requested changes in the wording about when state machines come into existence and Mark agreed to prepare a new revision for consideration next time.

5.8 SAS-1.1 First Burst Simplification (03-249) [Nixon]

Bob Nixon presented a proposal to allow SAS HBA implementations greater control over the use of First Burst in (03-249r0).

The group discussed making First Burst obsolete in SAS 1.1 and rejected the idea.

The group advised Bob to return with a specific proposal to add a First Burst control bit in the Command IU and to include a statement that the bit may be ignored if the First Burst Size is zero in the Disconnect-Reconnect Mode page. Bob agreed to bring a revised proposal to the next meeting.

6. Review of Recommendations

The following documents were recommended for approval during this meeting:

SAS Changes from sas-r04 to sas-r05 (03-223r1) [Elliott] unanimous for SAS r05
SAS: Notify primitive issues [Penokie] (03-228r2) unanimous for SAS r05

Mark Evans moved that the group recommend conducting a second public review on SAS r05 to T10. Rob Elliott seconded the motion. In the absence of any objections, the motion passed unanimously.

7. Meeting Schedule

SAS Protocol Working Group meetings are scheduled for:

Monday-Tuesday, September 8-9, 2003 commencing at 1:30 p.m. in Seattle, WA at the Renaissance Hotel (800-278-4159), hosted by Microsoft.

Additional teleconference calls may be announced on the T10 reflector as needed.

8. Adjournment

The meeting was adjourned at 6:15 p.m. on Monday July 7, 2003.