

Accredited Standards Committee*

InterNational Committee for Information Technology Standards (INCITS)

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Date: September 12, 2005

Reply to: John Lohmeyer

To: T10 Membership
From: Ralph Weber and John Lohmeyer
Subject: SAS Protocol WG -- September 12, 2005
Vancouver, BC Canada

Agenda

1. Opening Remarks
2. Approval of Agenda
3. Attendance and Membership
4. Old Business
 - 4.1 SAS-2 protocol for changing driver amplitude (03-285) [Evans]
 - 4.2 SAS-2 More counters (04-172) [Elliott]
 - 4.3 SAS-1.1 revision 9 letter ballot comment resolution as of sas1r09b (05-169) [Elliott]
 - 4.4 SAS-2 Zoning (05-144) [Liao, Gorshe and Grieff]
 - 4.5 SAS 1.1 - Transport layer retry and argument passing fixes (05-143) [Penokie]
 - 4.6 SAS 1.1 SSP Transport Response-DATA ACK Timing Issues (05-225) [Stoops]
 - 4.7 SAS 2.0 Allow Zoning Enhancements to Leave Expanders (05-235) [D'Avignon]
 - 4.8 SAS 2.0 Ensuring Delivery of Broadcasts In Zoned Expanders (05-258) [D'Avignon, Roberts]
5. New Business
 - 5.1 SAS-2, Modifications to 05-167r5, New NOTIFY to indicate imminent power failure (05-307) [Evans]
 - 5.2 SAS-2 Add device name to IDENTIFY address frame (05-309) [Elliott]
 - 5.3 SAS-2 STP connection time limits (05-306) [Elliott]
 - 5.4 SAS-2 Maximum SMP response time (05-305) [Elliott]
 - 5.5 SAS-2 More Phy Test Patterns (04-222) [Elliott]
6. Review of Recommendations
7. Meeting Schedule
8. Adjournment

Results of Meeting

1. Opening Remarks

John Lohmeyer called the meeting to order at 9:00 a.m. Monday, September 12, 2005. He thanked Rachelle Trent and Kelly Pollock of PMC-Sierra for hosting the meeting. As usual, the people present introduced themselves.

2. Approval of Agenda

The draft agenda was approved with the following additions and changes:

- 5.5 SAS-2 More Phy Test Patterns (04-222) [Elliott]

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INCITS Secretariat, Information Technology Industry Council (ITI)
1250 Eye Street NW, Suite 200, Washington, DC 20005-3922
Email: incits@itic.org Telephone: 202-737-8888 FAX: 202-638-4922

No agenda changes were made during the course of the meeting.

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
Mr. William Lynn	P	Adaptec, Inc.
Ms. Pat Thaler	P	Agilent Technologies
Mr. Stillman Gates	V	Broadcom
Dr. Sagar KenKare	V	Broadcom Corp.
Mr. Ron Roberts	A	Broadcom Corp.
Mr. Doug Cole	A	Dallas Semiconductor
Mr. Kevin Marks	P	Dell, Inc.
Mr. David Black	A	EMC Corp.
Mr. Kenneth Hirata	A	Emulex
Mr. Robert H. Nixon	P	Emulex
Mr. Ralph O. Weber	P	ENDL Texas
Mr. Nathan Hastad	P	General Dynamics
Mr. Rob Elliott	P	Hewlett Packard Co.
Mr. Steven Fairchild	V	Hewlett Packard Co.
Mr. Dan Colegrove	P	Hitachi Global Storage Tech.
Mr. James Rockrohr	V	IBM
Mr. George O. Penokie	P	IBM / Tivoli Systems
Mr. Pak Seto	V	Intel Corp.
Mr. Robert Sheffield	P	Intel Corp.
Mr. Brad Besmer	V	LSI Logic Corp.
Mr. Brian Day	V	LSI Logic Corp.
Mr. Tim Hoglund	V	LSI Logic Corp.
Mr. Steve Johnson	V	LSI Logic Corp.
Mr. John Lohmeyer	P	LSI Logic Corp.
Mr. Avraham Shimor	P	M-Systems
Mr. Mark Evans	P	Maxtor Corp.
Mr. Tim Symons	P	PMC-Sierra
Ms. Rachelle Trent	V	PMC-Sierra
Dr. Steve Gorshe	V	PMC-Sierra, Inc.
Mr. Craig W. Carlson	A	QLogic Corp.
Mr. Greg Elkins	V	QLogic Corp.
Mr. Gerald Houlder	P	Seagate Technology
Mr. William Martin	P	Sierra Logic, Inc.
Mr. Vit Novak	P	Sun Microsystems, Inc.
Mr. David Allen	A	Vitesse Semiconductor
Mr. Ed D'Avignon	V	Vitesse Semiconductor
Mr. Gregory Tabor	P	Vitesse Semiconductor
Mr. Jeff Williams	P	Xiotech Corp.

38 People Present

Status Key: P - Principal
A,A# - Alternate

AV - Advisory Member
L - Liaison
V - Visitor

4. Old Business

4.1 SAS-2 protocol for changing driver amplitude (03-285) [Evans]

Mark Evans requested that discussion of this topic be deferred to the next meeting.

4.2 SAS-2 More counters (04-172) [Elliott]

Rob Elliott presented a proposal to add counters to the SAS Protocol-Specific Log Page (04-172r1). The group requested enhancements in the proposal, including standardized controls over which counters are actively counted and Rob agreed to prepare a new revision for consideration at the next meeting.

4.3 SAS-1.1 revision 9 letter ballot comment resolution as of sas1r09b (05-169) [Elliott]

Rob Elliott led a brief discussion of the SAS-1.1 letter ballot comment resolution. Several editorial problems with cross-references and the like were raised and Rob agreed to prepare a new revision.

Rob Elliott moved that 05-169r5 (r4 as modified) be recommended as resolving the SAS-1.1 letter ballot comments and that SAS-1.1 r10 (r9e as modified) be recommended as incorporating the letter ballot comment resolutions. Mark Evans seconded the motion. In the absence of any objections, the motion passed unanimously.

4.4 SAS-2 Zoning (05-144) [Symons, Laio and Griefff]

Tim Symons reviewed the minutes of the SAS-2 Zoning teleconference (05-319).

Tim Symons presented the revised SAS-2 Zoning proposal (05-144r7). The group discussed several enhancements to the proposal.

Providing for increases in the number of zones beyond 128 in future SAS-x versions was discussed. Problems with the configuration change broadcast mechanism were discussed.

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

4.5 SAS 1.1 - Transport layer retry and argument passing fixes (05-143) [Penokie]

George Penokie and Rob Elliott reported that 05-143r4 had been incorporated in SAS-1.1 r9e (see agenda item 4.3).

4.6 SAS 1.1 SSP Transport Response-DATA ACK Timing Issues (05-225) [Stoops]

George Penokie reported that the issues raised by 05-225r0 are covered in 05-143 (see agenda item 4.5).

4.7 SAS 2.0 Allow Zoning Enhancements to Leave Expanders (05-235) [D'Avignon]

Ed D'Avignon asked that this topic be removed from this and future agendas.

4.8 SAS 2.0 Ensuring Delivery of Broadcasts In Zoned Expanders (05-258) [D'Avignon, Roberts]

Ed D'Avignon asked that this topic be removed from this and future agendas.

5. New Business

5.1 SAS-2, Modifications to 05-167r5, New NOTIFY to indicate imminent power failure (05-307) [Evans]

Mark Evans presented a proposal to clarify timing and other issues related to 05-167r5 (05-307r0).

Mark Evans moved that 05-307r0 be recommended for inclusion in SAS-2. George Penokie seconded the motion. In the absence of any objections, the motion passed unanimously.

5.2 SAS-2 Add device name to IDENTIFY address frame (05-309) [Elliott]

Rob Elliott presented a proposal to add device name information to the SAS-2 IDENTIFY address frame (05-309r0). The group discussed initiator device names, target device names, and several related issues.

Rob agreed to revise the proposal based on the discussion and present the revision at the next meeting.

5.3 SAS-2 STP connection time limits (05-306) [Elliott]

Rob Elliott presented a proposal to add time limits for SAS-to-SATA connections (05-306r0). The group requested that an Expander function be defined to set the I_T Nexus Loss time and Rob agreed to revise the proposal. Concerns were raised about using the term 'abort' when describing SATA actions, because 'abort' is a non sequitur in SATA.

Rob stated that the revised proposal will be discussed at the next meeting.

5.4 SAS-2 Maximum SMP response time (05-305) [Elliott]

Rob Elliott presented a proposal to define fixed-value timeouts for SMP responses (05-305r0).

Rob Elliott moved that 05-305r0 be recommended for inclusion in SAS-2. Gregory Tabor seconded the motion. The motion passed 6:0:11.

5.5 SAS-2 More Phy Test Patterns (04-222) [Elliott]

Rob Elliott presented a proposal to add more Phy test patterns (04-222r4). George Penokie immediately noted that requiring invalid K characters to be sent is a serious problem and that most disks cannot support it. The group discussed changes that would make the proposal less objectionable and Rob agreed to prepare a new revision of the proposal for consideration at the next meeting.

6. Review of Recommendations

The following recommendation was made regarding the SAS-1.1 Letter Ballot:

05-169r5, sas1r10 (Letter ballot comment resolution) [Elliott]

The following document was recommended for inclusion in SAS-2 during this meeting:

05-307r0 (Modifications to 05-167r5, New NOTIFY to indicate imminent power failure) [Evans]
05-305r0 (Maximum SMP response time) [Elliott]

7. Meeting Schedule

A SAS Protocol Working Group meeting is scheduled for:

Monday, November 7, 2005 commencing at 9:00 a.m. in Austin, TX at the Diskill Hotel (512-474-5911) hosted by Dell, Inc.

Teleconference calls will be announced on the T10 reflector as needed.

8. Adjournment

The meeting was adjourned at 5:55 p.m. on Monday September 12, 2005.