

Accredited Standards Committee*

InterNational Committee for Information Technology Standards (INCITS)

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Date: January 19, 2005

Reply to: John Lohmeyer

To: T10 Membership
From: Ralph Weber and John Lohmeyer
Subject: SAS Protocol WG -- Jan 17, 2005
Las Vegas, NV

Agenda

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Results of Meeting

1. Opening Remarks

John Lohmeyer called the meeting to order at 9:05 a.m. Monday, January 17, 2005. He thanked Dan Colegrove of Hitachi GST for hosting the meeting. As usual, the people present introduced themselves.

2. Approval of Agenda

The draft agenda was approved with no changes.

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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

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
Ms. Pat Thaler	P	Agilent Technologies
Mr. Doug Cole	A	Dallas Semiconductor
Mr. Kenneth Hirata	A	Emulex
Mr. Ralph O. Weber	P	ENDL Texas
Mr. Walt Hubis	V	Engenio Information Tech.
Mr. Neil Wanamaker	V	Finisar
Mr. Mike Fitzpatrick	P	Fujitsu
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. George O. Penokie	P	IBM / Tivoli Systems
Mr. Robert Sheffield	P	Intel 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. Mark Evans	P	Maxtor Corp.
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. Gregory Tabor	AV	Vitesse Semiconductor
Mr. Jeff Williams	AV	Xiotech Corp.

25 People Present

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

4. Old Business

4.1 SAS-1.1 Items

4.1.1 SAS-1.1, protocol for changing driver amplitude (03-285) [Evans]

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

4.1.2 SAS Signal Class Proposal (04-220) [Fairchild]

Steve Fairchild requested that discussion of this topic be deferred to the next meeting.

4.1.3 SAS-1.1 More phy test patterns (04-222) [Elliott and Fairchild]

Rob Elliott noted that this topic will be discussed in the SAS Phy working group at a time consistent with holding a joint meeting of the two groups.

4.1.4 SAS-1.1: PHY VACANT SMP Function Response (04-333) [Sheffield]

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

4.1.5 SAS-1.1 OPEN_REJECT BAD DESTINATION handling (04-340) [Elliott]

Rob Elliott presented a proposal to change expander handling of inaccessible addresses (04-340r1). The group requested minor changes and Rob agreed to prepare a new revision of the proposal.

Rob Elliott moved that 04-340r2 (r1 as modified) be recommended for inclusion in SAS-1.1. Bob Sheffield seconded the motion. In the absence of any objections, the motion passed unanimously.

4.1.6 SAM-4 SAS-1.1 I_T NEXUS LOSS task management function (04-372) [Elliott]

Rob Elliott reminded the group that a proposal to define a task management function to simulate logout for SAS (04-372r1) is on the agenda for consideration in the CAP working group. Rob summarized the contents of the proposal and concluded by stating that the vote recommending the proposal will be taken in the CAP working group.

4.1.7 SAM-4 SAS-1.1 Task priority cleanup (04-376) [Elliott]

Rob Elliott reminded the group that a proposal to incorporate task priority in the SAS state machines and in SAM-4 protocol services (04-376r1) is on the agenda for consideration in the CAP working group. Rob reviewed the SAS contents of the proposal in detail and concluded by stating that the vote recommending the proposal will be taken in the CAP working group.

4.1.8 SES-2 Define a SAS Expander element (04-374) [Elliott]

Rob Elliott presented a proposal to define a SAS expander in SES-2 (04-374r2). Rob noted that the proposal will be discussed in the CAP working group too.

Rob Elliott moved that 04-374r2 be recommended for inclusion in SES-2. Tim Hoglund seconded the motion. In the absence of any objections, the motion passed unanimously.

4.2 SAS-2 Items

4.2.1 SAS-1.1 More counters (04-172) [Elliott]

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

5. New Business

5.1 SAS 1.1 External Connector Interoperability (05-010) [Fairchild]

Steve Fairchild presented a proposal to correct problems with interconnecting devices with 4-way external connectors (05-010r0). He reminded the group that the issues motivating the proposal were discovered during the STA-sponsored November Plugfest. The group requested several substantial changes and Steve agreed to prepare a new revision of the proposal for consideration by the next meeting.

5.2 SAS-1.1 Discover process disable unused entries (05-018) [Elliott]

Rob Elliott presented a proposal to enhance the discovery process to cleanup routing table entries that have become unconfigured (05-018r0). Concerns were raised about increases in the SMP message traffic that could result from the proposed changes. The group requested minor changes and Rob agreed to prepare a new revision.

Rob Elliott moved that 05-018r1 (r0 as modified) be recommended for inclusion in SAS-1.1. Steve Johnson seconded the motion. In the absence of any objections, the motion passed unanimously.

5.3 SAS-1.1 Credit-based starvation (05-024) [Elliott]

Rob Elliott presented a proposal whose goal is eliminating a live lock condition in the arbitration fairness algorithm (05-024r0). The group agreed that a 'shall' requirement needed to be changed to a 'should', based on requirements present in SAS-1. Rob agreed to prepare a new revision of the proposal.

Rob Elliott moved that 05-024r2 (r1 as modified) be recommended for inclusion in SAS-1.1. Dan Colegrove seconded the motion. In the absence of any objections, the motion passed unanimously.

5.4 SAS-1.1 Break Wait state insensitivity to other events (05-040) [Hoglund]

Tim Hoglund presented a proposal to resolve the problems that arise when an expander in a Break Wait state fails to detect an Open Reject (05-040r0).

Tim Hoglund moved that 05-040r0 be recommended for inclusion in SAS-1.1. Greg Tabor seconded the motion. In the absence of any objections, the motion passed unanimously.

5.5 ACK/NAK balance check (05-039) [Sheffield]

Bob Sheffield presented a proposal to remove an impossible testing requirement from SAS-1.1 (05-039r0). The group requested a minor change and Bob agreed to prepare a new revision of the proposal.

Rob Elliott moved that 05-039r1 (r0 as modified) be recommended for inclusion in SAS-1.1. Mark Evans seconded the motion. In the absence of any objections, the motion passed unanimously.

5.6 SAS-1.1 Schedule and working draft review [Elliott]

Rob Elliott led the group in a review of SAS-1.1 issues. Rob noted several changes that will be made in the next revision of SAS-1.1.

The group discussed the schedule for sending SAS-1.1 to letter ballot. It was noted that the protocol group (this group) is mostly ready for the letter ballot. Concerns were raised over how fast the SAS PHY group can be ready with 3 Gbs definitions.

The group agreed to hold a three-hour interim telephone conference call on Wednesday, 16 February, starting at 10:00 a.m. central time.

6. Review of Recommendations

The following documents were recommended for inclusion in SAS-1.1 during this meeting:

For inclusion in SAS-1.1:

04-340r2 (OPEN_REJECT BAD DESTINATION handling) [Elliott]

05-018r1 (Discover process disable unused entries) [Elliott]

05-024r2 (Credit-based starvation) [Elliott]

05-039r1 (ACK/NAK balance check) [Sheffield]

05-040r0 (Break Wait state insensitivity to other events) [Hoglund]

For inclusion in SES-2

04-374r2 (Define a SAS Expander element) [Elliott]

7. Meeting Schedule

A SAS Protocol Working Group meeting is scheduled for:

Monday, March 7, 2005 commencing at 9:00 a.m. and finishing by noon in Dana Point, CA at the Laguna Cliffs Marriott Resort (800-545-7483), hosted by QLogic.

A teleconference is scheduled for three hours on Wednesday, 16 February, starting at 10:00 a.m. central time. Other teleconference calls may be announced on the T10 reflector as needed.

8. Adjournment

The meeting was adjourned at 3:30 p.m. on Monday January 17, 2005.