

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

Doc. No.: T10/02-372r0

Date: September 17, 2002

Reply to: John Lohmeyer

To: T10 Membership
From: John Lohmeyer
Subject: SAS Protocol Teleconference -- September 17, 2002

Agenda

1. Opening Remarks
2. Approval of Agenda
3. Attendance and Membership
4. Old Business
 - 4.1 SAS Working Draft Review [Elliott]
 - 4.2 SAS Port Control State Diagram Update (02-202) [Worden]
 - 4.3 Arbitration clarification (02-222) [Galloway]
 - 4.4 SAS Combined Request-Configuration List (02-276) [Worden]
 - 4.5 SAS Data Transfer Rules (02-318) [Gardner]
 - 4.6 SAS Relative Offset (02-319) [Gardner]
 - 4.7 SAS Data Corruption Problem (02-323) [Gardner]
 - 4.8 SAS Spinup (02-360) [Elliott]
 - 4.9 SAS Disconnect-Reconnect Mode Parameters (02-324) [Gardner]
 - 4.10 Details of SAS Expander Configuration (02-359r0) [Fairchild]
 - 4.11 STP Initiators closing connections (02-363) [Day]
5. New Business
 - 5.1 SAS Question from Rajesh (via email)
 - 5.2 Primitives outside of connections [Penokie]
 - 5.3 Informative Annex on Expanders (02-291) [Hoglund]
 - 5.4 SAS STP Meeting Review [Elliott]
6. Review of Recommendations to the Plenary
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Results of Meeting

1. Opening Remarks

John Lohmeyer called the meeting to order at 10:00 a.m. CDT, Tuesday, September 17, 2002. He thanked George Penokie for hosting the call and Jim Coomes for hosting the WebEx session.

2. Approval of Agenda

The draft agenda was approved with the following changes:

- 5.1 SAS Question from Rajesh (via email)
- 5.2 Primitives outside of connections [Penokie]

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- 5.3 Informative Annex on Expanders (02-291) [Hoglund]
- 5.4 SAS STP Meeting Review [Elliott]

No items were added/revised 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	Electronic Mail Address
Mr. Kyle Sterling	V	Adaptec, Inc.	ksterlin@corp.adaptec.com
Mr. Bill Galloway	P	BREA Technologies, Inc.	billg@breatech.com
Mr. Lafe Moon	V	Data Transit Corp.	lafe@data-transit.com
Mr. Rob Elliott	P	Hewlett Packard Co.	Elliott@hp.com
Mr. Steven Fairchild	V	Hewlett Packard Co.	Steve.Fairchild@hp.com
Mr. Jim Reif	V	Hewlett Packard Co.	jim.reif@hp.com
Mr. Matt Otto	V	I-TECH Corp.	matt_otto@i-tech.com
Mr. Steven Wirtz	V	I-TECH Corp.	steve_wirtz@i-tech.com
Mr. George O. Penokie	P	IBM / Tivoli Systems	gop@us.ibm.com
Mr. Dan Colegrove	V	IBM Corp.	dcolegro@us.ibm.com
Mr. Edward Younk	V	IBM Corp.	ehyounh@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. Richard Beckett	V	Intel Corp.	richard.c.beckett@intel.com
Mr. John Lohmeyer	P	LSI Logic Corp.	lohmeier@t10.org
Mr. Tim Hoglund	V	LSI Logic Corp.	tim.hoglund@lsil.com
Mr. Brad Besmer	V	LSI Logic Corp.	brad.besmer@lsil.com
Mr. Steve Johnson	V	LSI Logic Corp.	sjohnson@lsil.com
Mr. Mark Evans	P	Maxtor Corp.	mark_evans@maxtor.com
Mr. Steve Byan	V	Maxtor Corp.	stephen_byan@maxtor.com
Mr. David Cressman	V	Maxtor Corp.	dave_cressman@maxtor.com
Mr. Jim Coomes	V	Seagate Technology	jim_coomes@seagate.com
Mr. Scott Younger	V	Seagate Technology	Scott.Younger@seagate.com

23 People Present

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

4. Old Business

4.1 SAS Working Draft Review [Elliott]

This item was deferred due to the late hour.

4.2 SAS Port Control State Diagram Update (02-202) [Worden]

Jim Coomes presented 02-202r3jc, SAS Port Control State Diagram. He said that this document represents the direction that John Worden is going on the state machine, but this material is not posted yet. The group agreed that the direction is good. He agreed to work with John on updating this state diagram for next week's conference call.

4.3 Arbitration clarification (02-222) [Galloway]

Bill Galloway noted that this item is editorial. He asked that it be deferred to the editors meeting.

4.4 SAS Combined Request-Configuration List (02-276) [Worden]

Jim Coomes asked that this item be deferred.

4.5 SAS Data Transfer Rules (02-318) [Gardner]

In the absence of Ed Gardner, this item was deferred.

4.6 SAS Relative Offset (02-319) [Gardner]

In the absence of Ed Gardner, this item was deferred.

4.7 SAS Data Corruption Problem (02-323) [Gardner]

In the absence of Ed Gardner, this item was deferred.

4.8 SAS Spinup (02-360) [Elliott]

Rob Elliott asked that this item be deferred.

4.9 SAS Disconnect-Reconnect Mode Parameters (02-324) [Gardner]

In the absence of Ed Gardner, this item was deferred.

4.10 Details of SAS Expander Configuration (02-359r0) [Fairchild]

Steve Fairchild presented a draft of 02-359r1, ExpanderConfigurationDetails.doc. He received input and agreed to revise his proposal before posting it.

4.11 STP Initiators closing connections (02-363) [Day]

In the absence of Brian Day, this item was deferred.

5. New Business

5.1 SAS Question from Rajesh (via email)

John Lohmeyer posted an email received from Rajesh pointing out a discrepancy in SAS rev 1b. Rob Elliott agreed to reply to Rejesh. John noted that SAS is gaining a lot of acceptance around the world and a lot of people are already designing to the working draft.

5.2 Primitives outside of connections [Penokie]

George Penokie noted that BREAK is a redundant primitive, but the SAS working draft does not allow redundant primitives within a connection. Rob agreed to work on the wording to allow BREAK within a connection. Tim Hoglund agreed to write a proposal to change CLOSE from a triple to a single primitive. After much more discussion, Rob agreed to re-visit all of the primitive tables.

5.3 Informative Annex on Expanders (02-291) [Hoglund]

Tim Hoglund presented a draft of 02-291r1, ExpanderAnnexDiagrams.ppt. He received input and agreed to include the input prior to posting his proposal.

5.4 SAS STP Meeting Review [Elliott]

Rob Elliott noted that the SAS STP study group last week had discovered that sending a dword of 4 K28.3 characters for an error will cause problems with SATA. An error in might result in no error out. He suggested that if an error comes in, that the expander be required to generate an illegal disparity or an invalid character error out. This needs to be something that SATA will regard as an error forever. It was noted that the current approach should work within frames because the CRC should be corrupted. Rob was concerned about errors outside of frames too.

The SAS STP group recommended that "STP initiators shall not generate BIST frames". Rob suggested that SMP include a bit map of supported SATA frames. It was noted that expanders may just pass everything through once a connection is established.

Jim Reif moved that a statement saying STP initiators shall not generate BIST frames be recommended for inclusion in SAS. Bill Galloway seconded the motion. In absence of objections, the motion carried unanimously.

Rob Elliott noted that the SAS STP group had recommended that the OOB Sequence for SATA 1.0 be included in SAS. George Penokie said that this really comes later, when the SAS device discovers it is talking to a SATA device. It was not clear what is exactly needed here.

6. Review of Recommendations to the Plenary

John Lohmeyer noted that the following recommendations were made during this meeting:

that a statement saying STP initiators shall not generate BIST frames be recommended for inclusion in SAS.

7. Meeting Schedule

SAS Protocol Working Group meetings are scheduled for:

Thursday-Friday, October 24-25, 2002 in Las Vegas in conjunction with the T13 meeting. Details to be posted to the T10 reflector.

Monday-Tuesday, November 4-5, 2002 commencing at 1:00 p.m. on Monday and ending at 5:00 p.m. on Tuesday in Huntington Beach, CA at the Hilton Waterfront Hotel (714-960-7873).

George Penokie agreed to host a SAS Protocol teleconferences September 24th and October 1st:

Tuesday September 24, 2002 and October 1, 2002

11:00 am -- 2:00 pm EDT

10:00 am -- 1:00 pm CDT

9:00 am -- noon MDT

8:00 am -- 11:00 am PDT

USA Toll Free Number: 877-921-6914

Toll Number: +1-712-923-0332

Participant Passcode: 338024

WebEx Session: <http://seagate.webex.com/>

Meeting Name: SAS Protocol teleconference

Password: Carol19 for 9/24/02 and Carol20 for 10/1/02

An editing meeting is planned for October 3-4, 2002 in Houston, TX at HPQ. Rob Elliott will host this editing session.

8. Adjournment

The meeting was adjourned at 1:26 p.m. CDT on Tuesday, September 17, 2002.