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

To: T10 Membership
From: John Lohmeyer
Subject: SAS Protocol Teleconference -- October 22, 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 Relative Offset (02-319) [Gardner]
    4.3   SAS Data Corruption Problem (02-323) [Gardner]
    4.4   SAS Spinup (02-360) [Elliott]
    4.5   SAS Disconnect-Reconnect Mode Parameters (02-324) [Gardner]
    4.6   STP Initiators closing connections (02-363) [Day]
    4.7   Informative Annex on Expanders (02-291) [Hoglund]
    4.8   CRC on Frame Header [Roberts]
    4.9   SAS Device Identification VPD page requirements (02-396) [Elliott]
    4.10 Alternate SAS Speed Negotiation State Diagram (02-405) [Penokie]
    4.11 SAS Protocol Specific Port mode page (02-397) [Elliott]
    4.12 SAS Method to determine Source of Change Primitive (02-409) [Besmer]
    4.13 Remove SAS SMP margin control functions? (reflector message) [Elliott]
5. New Business
    5.1   SAS Remove SATA_ERROR primitive (02-418) [Hoglund]
    5.2   Proposal to change Bit Ordering and CRC diagrams in SAS rev. 2a (02-422) [Reif]
    5.3   SAS Additional Port Layer Tweaks (02-424) [Worden]
    5.4   SSP State diagram question (reflector message) [Ayyavu]
    5.5   SAS Address of 0 invalid [Elliott]
6. Review of Recommendations to the Plenary
7. Meeting Schedule
8. Adjournment

Results of Meeting

1.   Opening Remarks

John Lohmeyer called the meeting to order at 9:00 a.m. MDT, Tuesday, October 22, 2002. He thanked George Penokie for hosting the call and John Worden for hosting the WebEx session.

2. Approval of Agenda

The draft agenda was approved with the following changes:

> 5.3   SAS Additional Port Layer Tweaks (02-424) [Worden]
> 5.4   SSP State diagram question (reflector message) [Ayyavu]

The following items was added or revised during the course of the meeting:

> 5.5   SAS Address of 0 invalid [Elliott]

3. Attendance and Membership

Attendance at working group meetings does not count toward minimum attendance requirements for T10 member-ship. 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:

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          Name          S      Organization        Electronic Mail Address
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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. Thomas Grieff      V  Hewlett Packard Co.      Thomas.Grieff@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. Pak Seto           V  Intel                    pak-lung.seto@intel.com
Mr. Robert Sheffield   A  Intel Corp.              robert.l.sheffield@intel.
                                                   com
Mr. John Lohmeyer      P  LSI Logic Corp.          lohmeyer@t10.org
Mr. Brad Besmer        V  LSI Logic Corp.          brad.besmer@lsil.com
Mr. Steve Johnson      V  LSI Logic Corp.          sjohnson@lsil.com
Mr. Steve Byan         V  Maxtor Corp.             stephen_byan@maxtor.com
Mr. Jim Coomes         V  Seagate Technology       jim.coomes@seagate.com
Mr. John Worden        V  Seagate Technology       john.worden@seagate.com

17 People Present

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

4.1 SAS Working Draft Review [Elliott]

Rob Elliott has recently posted SAS Rev 2b. People should review this revision for consideration at the Las Vegas face-to-face meeting.

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

Bob Sheffield noted that he is preparing a proposal on relative offset. The topic was deferred to the face-to-face meeting in Las Vegas.

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

Bob Sheffield noted that he is preparing a proposal on SAS data corruption. He plans to have it available for the Las Vegas meeting. There was discussion about whether or not the 'data corruption problem' is real or not. The topic was deferred to the face-to-face meeting in Las Vegas.

4.4 SAS Spinup (02-360) [Elliott]

Rob Elliott presented 02-360r2, SAS Spinup. This revision incorporates the input from last week's call. He asked that voting on the proposal be deferred to the face-to-face meeting in Las Vegas.

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

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

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

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

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

In the absence of Tim Hoglund, this item was deferred.

4.8 CRC on Frame Header [Roberts]

In the absence of Ron Roberts, this item was deferred. Rob Elliott noted that he had spoken to Ron Roberts and Ron had said that the proposal would only address data frames.

4.9 SAS Device Identification VPD page requirements (02-396) [Elliott]

Rob Elliott presented 02-396r1, SAS Device Identification VPD page requirements. This revision incorporates the input from last week's call. He received further input and agreed to revise his proposal. Rob Elliott moved and Bill Galloway seconded that 02-396r2 (r1 as revised) be recommended for inclusion in SAS. The motion passed unanimously.

4.10 Alternate SAS Speed Negotiation State Diagram (02-405) [Penokie]

George Penokie presented 02-405r1, Alternate SAS Speed Negotiation State Diagram.

George Penokie moved that the Fallback and Increment Speed states be recommended for removal from the SP state machine in SAS. Bill Galloway seconded the motion. The motion passed unanimously.

George Penokie moved and Bill Galloway seconded that 02-405r2 (r1 as revised) be recommend for inclusion in SAS. The motion passed unanimously.

4.11 SAS Protocol Specific Port mode page (02-397) [Elliott]

Rob Elliott asked that this item be deferred.

4.12 SAS Method to determine Source of Change Primitive (02-409) [Besmer]

Brad Besmer presented 02-409r2, SAS Expander Change Count Proposal. He received input and agreed to revise the proposal.

4.13 Remove SAS SMP margin control functions? (reflector message) [Elliott]

In the absence of Ron Roberts, this item was deferred.

5. New Business

5.1 SAS Remove SATA_ERROR primitive (02-418) [Hoglund]

In the absence of Tim Hoglund, this item was deferred.

5.2 Proposal to change Bit Ordering and CRC diagrams in SAS rev. 2a (02-422) [Reif]

Jim Reif presented 02-422r0, Proposal to change Bit Ordering and CRC diagrams in SAS rev. 2a. He received input and agreed to revise the proposal.

5.3 SAS Additional Port Layer Tweaks (02-424) [Worden]

Due to the late hour, this item was deferred.

5.4 SSP State diagram question (reflector message) [Ayyavu]

Rob Elliott presented a T10 reflector message from Vetrivel Ayyavu dated October 7, 2002, which included two questions regarding the SSP link layer: The group agreed that the answer to the first question is that the draft is correct as it is written. The answer to the second question required a bit more research. Bill Galloway agreed to respond to the reflector message.

5.5 SAS Address of 0 invalid [Elliott]

Rob Elliott moved and Bill Galloway seconded that it be recommended that a SAS address of all 0 bits is not a valid SAS address and may be used to indicate there is no device present or other meanings. The motion passed unanimously.

Rob agreed to search for places in SAS where addresses are used and to bring in a proposal on how to handle invalid addresses in each case.

6. Review of Recommendations to the Plenary

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

    that 02-396r2 (r1 as revised) be recommended for inclusion in SAS.
    that the Fallback and Increment Speed states be recommended for removal from the SP state machine in SAS.
    that 02-405r2 (r1 as revised) be recommend for inclusion in SAS.
    that it be recommended that a SAS address of all 0 bits is not a valid SAS address and may be used to indicate there is no device present or other meanings.

The following recommendation was made on the October 15th conference call:

   that 02-387r2 (r1 as revised) be recommended for inclusion in SAS.
   that 02-383r2 (r1 as revised) be recommended for inclusion in SAS.
   that 02-394r1 (r0 as revised) be recommended for inclusion in SAS.
   that DEVICE TYPE numbers be changed to start at 1 and DEVICE TYPE 0 means no device is attached be
         recommended for included in SAS.

The following recommendation was made on the October 1st conference call:

   that 02-359r3 (r2 as revised) be recommended for inclusion in SAS. [4:3:2]
   that 02-393r1 (r0 as revised) be recommended for inclusion in SAS.

The following recommendation was made on the September 24th conference call:

   that 02-318r1 be recommended for inclusion in SAS.
   that 02-202r4 (r3 as revised) be recommended for inclusion in SAS.
   that 02-276r3 (r2 as revised) be recommended for inclusion in SAS.
   that we recommend to T10 that the SSP Task IU be changed to 28 bytes to match the command IU by remov-
         ing the last 4 reserved bytes.

The following recommendation was made on the September 17th conference call:

   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 commencing at 9:00 a.m. on Thursday and ending at noon on Friday in
   Las Vegas in conjunction with the T13 meeting.

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

John Lohmeyer agreed to host a SAS Protocol teleconference October 29th, if needed. Call details would be:

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   Tuesday October 29, 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: 877-417-9828
          Toll Number: +1-706-679-9028
       Conference Code: 719 533 7560

WebEx Session: http://seagate.webex.com/
 Meeting Name: SAS Protocol teleconference
     Password: Carol23
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An editing meeting is planned for November 7-8, 2002 in Huntington Beach, CA. The meeting will start one hour
following the plenary meeting and run through 1:00 p.m. on Friday.

8. Adjournment

The meeting was adjourned at 12:22 p.m. MDT on Tuesday, October 22, 2002.