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

Doc. No.: T10/02-336r0

Date: September 3, 2002
Reply to: John Lohmeyer

To: T10 Membership
From: John Lohmeyer
Subject: SAS Protocol Teleconference -- September 3, 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 - OOB and DWS state machines update (02-300) [Grieff]
    4.5   SAS Combined Request-Configuration List (02-276) [Worden]
    4.6   Rate Change Delay in speed negotiation window [Grieff]
    4.7   SAS SSP transport layer state machines (02-307) [Mark Evans]
    4.8   SAS Data Transfer Rules (02-318) [Gardner]
    4.9   SAS Relative Offset (02-319) [Gardner]
    4.10 SAS Simplified Arbitration (02-320) [Gardner]
    4.11 SAS Data Corruption Problem (02-323) [Gardner]
5. New Business
    5.1   SAS-Multiple Connections on Wide Ports (02-335) [Penokie]
    5.2   Time before OOB signals [Penokie]
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 10:00 a.m. CDT, Tuesday, September 3, 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:

    5.2   Time before OOB signals [Penokie]

The following items were added/revised during the course of the meeting:

    none.

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. Ron Roberts        P  Adaptec, Inc.            Ron_Roberts@adaptec.com
Mr. Lafe Moon          V  Data Transit Corp.       lafe@data-transit.com
Mr. Rob Elliott        P  Hewlett Packard Co.      Elliott@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. John Lohmeyer      P  LSI Logic Corp.          lohmeyer@t10.org
Mr. Brian Day          V  LSI Logic Corp.          brian.day@lsil.com
Mr. Tim Hoglund        V  LSI Logic Corp.          tim.hoglund@lsil.com
Mr. Mark Evans         P  Maxtor Corp.             mark_evans@maxtor.com
Mr. Steve Byan         V  Maxtor Corp.             stephen_byan@maxtor.com
Mr. Ting Li Chan       V  QLogic Corp.             ting.chan@qlogic.com
Mr. Jim Coomes         V  Seagate Technology       jim_coomes@seagate.com
Mr. John Worden        V  Seagate Technology       john.worden@seagate.com
Mr. Scott Younger      V  Seagate Technology       Scott.T.Younger@seagate.
                                                   com


16 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 presented the working draft that he is working on and asked several specific questions.

Rob Elliott moved that we recommend that the discovery function be numbered 10h instead of 00h and that the PHYSICAL LINK RATE in the IDENTIFY address frame be marked 'ignored'. Tim Hoglund seconded the motion. In absence of objections, the motion carried unanimously.

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

John Worden reviewed 02-202r2, SAS Port Control State Diagram Update. John received input and said he plans to post rev 3 before next week's meeting.

4.3 Arbitration clarification (02-222) [Galloway]

In the absence of Bill Galloway, this topic was deferred.

4.4 SAS - OOB and DWS state machines update (02-300) [Grieff]

Tom Grieff discussed 02-300r0. He said that he was in an email discussion with George Penokie on this topic and they were working on editorial improvements. Tom will prepare revision 1 for next week's meeting.

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

John Worden presented 02-276r2, SAS Combined Request-Configuration List. John and Rob Elliott agreed to work together to figure out whether to have the link layer exist all the time or just exist when the IR state machine tells it to exist. He received input and agreed to prepare revision 3 for next week's meeting.

4.6 Rate Change Delay in speed negotiation window [Grieff]

Tom Grieff discussed this topic (no separate proposal). He said that he and George Penokie had discussed this topic and had concluded that RCD should be 750,000 EUIs. A motion is planned for next week's meeting.

4.7 SAS SSP transport layer state machines (02-307) [Mark Evans]

Mark Evans asked that this topic be deferred.

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

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

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

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

4.10 SAS Simplified Arbitration (02-320) [Gardner]

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

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

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

5. New Business

5.1 SAS-Multiple Connections on Wide Ports (02-335) [Penokie]

George Penokie presented 02-335r1, SAS-Multiple Connections on Wide Ports. This proposal is an attempt to clarify the rules regarding multiple connections on wide ports. It became obvious that there was confusion on this topic during a discussion at the Shrewsbury meeting.

By Rob Elliott and Tim Hoglund agreed that George's document is accurate, but whether it is clearer than the previous wording is entirely up to the reader. George agreed to revise his proposal to reflect the input he received and expects to have revision 2 available for next week's meeting.

5.2 Time before OOB signals [Penokie]

George Penokie presented a Visio drawing showing an idle period before the COMINIT and COMSAS ALIGN bursts. The specification today is not clear about this idle period, especially on whether the transmitter needs to send this idle period and for how long.

George plans to write a proposal on this topic.

6.   Review of Recommendations to the Plenary

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

> that the discover function be numbered 10h instead of 00h and that the PHYSICAL LINK RATE in the IDEN-
> TIFY address frame be marked 'ignored'.

The following recommendations were made at the August 21-23, 2002 meeting:

> that it be recommended that SAS be modified to require targets to not send a response frame for a command
> until all data associated with any outstanding XFER_RDY for that command have been
> received.
> that it be recommended that the open originator shall start rate matching on the next dword after the OPEN
> address frame has been transmitted.
> that 02-259r1 be recommended for inclusion in SAS.
> that 02-279r4 (r3 as revised) (changes 1 through 13) be recommended for inclusion into SAS.
> that it be recommended that AEN be removed from SAS.

7.   Meeting Schedule

SAS Protocol Working Group meetings are scheduled for:

> Monday-Tuesday, September 9-10, 2002 commencing at 1:00 p.m. on Monday and ending at 5:00 p.m. on Tuesday in Minneapolis, MN at the Hilton Minneapolis/St. Paul Airport Hotel (952-854-2100).

> 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).

A SAS STP Issues Study Group meeting is scheduled for Wednesday, September 11, 2002 beginning at 9:00 a.m. and ending at noon. This meeting will be chaired by Ron Roberts and the intent is to identify any issues with the STP protocol.

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

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    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
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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 approximately 12:46 p.m. CDT on Tuesday, September 3, 2002.