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

Doc. No.: T10/04-083r0

Date: March 9, 2004
Reply to: John Lohmeyer

To: T10 Membership
From: Ralph Weber and John Lohmeyer
Subject: SAS Protocol WG -- March 8, 2004
            Dana Point, CA

Agenda

1. Opening Remarks
2. Approval of Agenda
3. Attendance and Membership
4. Old Business
    4.1   SAS 1.1, adding the Terminate Data Transfer protocol service (03-245) [Evans]
    4.2   SAS-1.1, protocol for changing driver amplitude (03-285) [Evans]
    4.3   SAS-1.1:Close Port Selector Detection Gap (04-029) [Sheffield]
    4.4   SAS-1.1 ALIGNs through expanders (04-032) [Elliott]
    4.5   SAS 1.1 UML Corrections (04-042) [Penokie]
5. New Business
    5.1   SAS-1.1: Fix SP Hang States (04-030) [Sheffield]
    5.2   SAS-1.1:BREAK handling clarifications (04-061) [Hoglund]
    5.3   SAM-3 SAS-1.1 SRP-2 Unit attention on transport layer frame discard (04-073) [Elliott]
6. Review of SAS-1.1 Working Draft [Elliott]
7. Review of Recommendations
8. Meeting Schedule
9. Adjournment

Results of Meeting

1.   Opening Remarks

John Lohmeyer called the meeting to order at 9:05 a.m. Monday, March 8, 2004. He thanked Skip Jones of QLogic for hosting the meeting. As usual, the people present introduced themselves.

2.   Approval of Agenda

The draft agenda was approved with no changes.

No items were added or 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 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. Tim Symons          P  Adaptec, Inc.            Timothy_Symons@adaptec.
                                                    com
Ms. Pat Thaler          P  Agilent Technologies     pat_thaler@agilent.com
Mr. Neil Wanamaker      P  AMCC                     nwanamaker@amcc.com
Mr. Gunter Knestele     V  CERTANCE                 Gunter.Knestele@certance.
                                                    com
Mr. Dexter Anderson     A# Crossroads Systems, Inc. danderson@crossroads.com
Mr. Doug Cole           A  Dallas Semiconductor     doug.cole@dalsemi.com
Mr. James A. Lott, Jr.  P  Dallas Semiconductor     jim.lott@dalsemi.com
Mr. Kevin Marks         P  Dell, Inc.               kevin_marks@dell.com
Mr. Phil Colline        AV Dot Hill Systems Corp    Phil.Colline@dothill.com
Mr. Robert H. Nixon     P  Emulex                   bob.nixon@emulex.com
Mr. Ralph O. Weber      P  ENDL Texas               roweber@ieee.org
Mr. Mike Fitzpatrick    P  Fujitsu                  mfitzpatrick@fcpa.
                                                    fujitsu.com
Mr. Rob Elliott         P  Hewlett Packard Co.      Elliott@hp.com
Mr. Dan Colegrove       P  Hitachi Global Storage   daniel.colegrove@hgst.com
                           Tech.
Mr. George O. Penokie   P  IBM / Tivoli Systems     gop@us.ibm.com
Mr. Pak Seto            V  Intel Corp.              pak-lung.seto@intel.com
Mr. Robert Sheffield    P  Intel Corp.              robert.l.sheffield@intel.
                                                    com
Mr. Dennis Moore        AV KnowledgeTek, Inc.       dmoore@ix.netcom.com
Mr. Tim Hoglund         V  LSI Logic Corp.          tim.hoglund@lsil.com
Mr. Steve Johnson       V  LSI Logic Corp.          sjohnson@lsil.com
Mr. John Lohmeyer       P  LSI Logic Corp.          lohmeyer@t10.org
Mr. Steven Schauer      V  LSI Logic Corp.          steve.schauer@lsil.com
Mr. David Weber         V  LSI Logic Corp.          david.weber@lsil.com
Mr. Martin Czekalski    A  Maxtor Corp.             marty_czekalski@maxtor.
                                                    com
Mr. Mark Evans          P  Maxtor Corp.             mark_evans@maxtor.com
Mr. Craig W. Carlson    A# QLogic Corp.             craig.carlson@qlogic.com
Mr. Don Carothers       V  QLogic Corp.             don.carothers@qlogic.com
Mr. Greg Elkins         V  QLogic Corp.             greg.elkins@qlogic.com
Mr. Arie Krantz         V  QLogic Corp.             l_krantz@qlc.com
Mr. Gilbert Romo        V  QLogic Corp.             gil.romo@qlogic.com
Mr. John A. Fobel       AV Rancho Technology, Inc.  johnf@rancho.com
Mr. Jim Coomes          A  Seagate Technology       jim.coomes@seagate.com
Mr. Gerald Houlder      P  Seagate Technology       gerry.houlder@seagate.com
Mr. Vit Novak           P  Sun Microsystems, Inc.   vit.novak@sun.com
Mr. Ron Mathews         P  UNISYS Corporation       ronald.mathews@unisys.com
Mr. Michael Joiner      V  Vitesse                  joiner@vitesse.com
Mr. Ed D'Avignon        V  Vitesse Semiconductor    davignon@vitesse.com

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

4.1 SAS 1.1, adding the Terminate Data Transfer protocol service (03-245) [Evans]

Mark Evans presented a proposal for canceling outstanding protocol service transactions (03-245r4).

The group requested numerous changes and Mark agreed to prepare a new revision for consideration at the next meeting.

4.2 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.

4.3 SAS-1.1:Close Port Selector Detection Gap (04-029) [Sheffield]

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

4.4 SAS-1.1 ALIGNs through expanders (04-032) [Elliott]

Rob Elliott presented a proposal regarding rate matching aligns (04-032r1).

Rob Elliott moved that 04-032r1 be recommended for inclusion in SAS-1.1. Ed D'Avignon seconded the motion. In the absence of any objections, the motion passed unanimously.

4.5 SAS 1.1 UML Corrections (04-042) [Penokie]

George Penokie proposed corrections to the SAS UML diagrams intended to make the notation consistent with standard UML (04-042r1).

The group requested many changes and George agreed to prepare a new revision for consideration at the next meeting.

5. New Business

5.1 SAS-1.1: Fix SP Hang States (04-030) [Sheffield]

Bob Sheffield presented a proposal to clearly identify SP state diagram transitions to COMINIT (04-030r0). The group requested changes and Bob agreed to prepare a new revision.

Bob Sheffield moved that 04-030r1 (r1 as modified) be recommended for inclusion in SAS-1.1. Neil Wanamaker seconded the motion.

Rob Elliott questioned whether additional transitions to COMINIT need to be added. Bob stated that he assumed that loss of Dword Synch would result in COMINIT. The group agreed that a 'may' in SAS-1 invalidates Bob's assumption.

After the issue was reviewed in detail, Bob agreed to make additional changes in r1 of the proposal. Bob further agreed that more consideration of the changes is necessary. So, Bob withdrew his motion.

Rob Elliott requested that Bob make additional changes related to the Spin-Up Hold function. In consultation with the group, Bob agreed to add a Spin-Up Hold state to address the issues.

5.2   SAS-1.1:BREAK handling clarifications (04-061) [Hoglund]

Tim Hoglund presented a proposal to clarify the handling of a BREAK Received message (04-061r0).

Tim Hoglund moved that 04-061r0 be recommended for inclusion in SAS-1.1 Rob Elliott seconded the motion. In the absence of any objections, the motion passed unanimously.

5.3   SAM-3 SAS-1.1 SRP-2 Unit attention on transport layer frame discard (04-073) [Elliott]

Rob Elliott proposed adding a unit attention condition to report discarded frames (04-073r0). Several of those present voiced opposition to the proposal. Questions were raised regarding whether the problem described needs a solution, since most (if not all) instances of the problem result from the initiator incorrectly formatting the content of SAS frames. Noting that the proposal needs to be discussed in CAP before it can be approved, Rob agreed to return next time.

6.   Review of SAS-1.1 Working Draft [Elliott]

Rob Elliott noted that the group needs to review and resolve the editor's notes in SAS-1.1, but owing to the late hour he requested that discussion of this topic be deferred to the next meeting.

7.   Review of Recommendations

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

For inclusion in SAS-1.1:
    04-032r1 (SAS-1.1 ALIGNs through expanders) [Elliott]
    04-061r0 (SAS-1.1:BREAK handling clarifications) [Hoglund]

8.   Meeting Schedule

A SAS Protocol Working Group meeting is scheduled for:

    Monday, May 3, 2004 commencing at 9:00 a.m. in Seaside, CA at the Embassy Suites on Monterey Bay Hotel (831-393-1115), hosted by Brocade Communications Systems.

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

9.   Adjournment

The meeting was adjourned at 6:10 p.m. on Monday March 8, 2004.