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

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Date: January 13, 2004
Reply to: John Lohmeyer

To: T10 Membership
From: Ralph Weber and John Lohmeyer
Subject: SAS Protocol WG -- January 12, 2004
                 Chandler, AZ

Agenda

1. Opening Remarks
2. Approval of Agenda
3. Attendance and Membership
4. Old Business
    4.1   SAS-1.1: Transport Layer Retries (03-186) [Elliott/Jones]
    4.2   SAS 1.1, adding the Terminate Data Transfer protocol service (03-245) [Evans]
    4.3   SAS-1.1, protocol for changing driver amplitude (03-285) [Evans]
    4.4   SAS-1.1 ALIGN insertion clarifications (03-334) [Elliott]
5. New Business
    5.1   SAS 1.1 READY LED signal behavior (04-027) [Cox]
    5.2   SAS-1.1:Clarify phy disable in route-table initialization (04-028) [Sheffield]
    5.3   SAS-1.1:Close Port Selector Detection Gap (04-029) [Sheffield]
    5.4   SAS-1.1 ALIGNs through expanders (04-032) [Elliott]
    5.5   SAS-1.1:AIP clarifications and XL state transition (04-036) [Hoglund]
    5.6   SAS 1.1 UML Corrections (04-042) [Penokie]
6. Review of Recommendations
7. Meeting Schedule
8. Adjournment

Results of Meeting

1.   Opening Remarks

John Lohmeyer called the meeting to order at 9:05 a.m. Monday, January 12, 2004. He thanked Bob Sheffield of Intel 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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Ms. Pat Thaler         P  Agilent Technologies     pat_thaler@agilent.com
Mr. Neil Wanamaker     AV AMCC                     nwanamaker@amcc.com
Mr. Murali Rajagopal   V  Broadcom Corp.           muralir@broadcom.com
Mr. Titkwan Hui        A  Dallas Semiconductor     tk.hui@dalsemi.com
Ms. Elizabeth          V  Dot Hill Systems Corp    elizabeth.rodriguez@
Rodriguez                                          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. Tim Mackley        A  General Dynamics         timothy.mackley@gd-ais.
                                                   com
Mr. Rob Elliott        P  Hewlett Packard Co.      Elliott@hp.com
Mr. Steven Fairchild   V  Hewlett Packard Co.      Steve.Fairchild@hp.com
Mr. George O. Penokie  P  IBM / Tivoli Systems     gop@us.ibm.com
Mr. Robert Sheffield   P  Intel Corp.              robert.l.sheffield@intel.
                                                   com
Mr. Dennis Moore       AV KnowledgeTek, Inc.       dmoore@ix.netcom.com
Mr. Brian Day          V  LSI Logic Corp.          brian.day@lsil.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. Doug Cole          V  Maxim/Dallas             doug.cole@dalsemi.com
                          Semiconductor
Mr. Martin Czekalski   A  Maxtor Corp.             marty_czekalski@maxtor.
                                                   com
Mr. Mark Evans         P  Maxtor Corp.             mark_evans@maxtor.com
Ms. Rachelle Trent     AV PMC-Sierra               rachelle_trent@pmc-
                                                   sierra.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. Gilbert Romo       V  QLogic Corp.             gil.romo@qlogic.com
Mr. Jim Jones          A  Quantum Corp.            jim.jones@quantum.com
Mr. Jim Coomes         A  Seagate Technology       jim.coomes@seagate.com
Mr. Edward J.          V  Vitesse Semiconductor    davignon@vitesse.com
D'Avignon
Mr. Gregory Tabor      AV Vitesse Semiconductor    greg@vitesse.com


31 People Present


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

4.1 SAS-1.1: Transport Layer Retries (03-186) [Elliott/Jones]

Rob Elliott presented a review of the proposed transport layer retry rules and state machines (03-186r4). The group requested several editorial changes and Rob agreed to prepare a new revision.

Rob Elliott moved that 03-186r5 (r4 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.

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

Mark Evans presented a proposal for canceling outstanding protocol service transactions (03-245r3). He noted that changes in this proposal revise changes in the just-recommended 03-186r5 proposal.

The group asked that Mark update his proposal based on the discussion of 03-186r4 and to make other minor changes. Mark agreed to prepare a new revision of the proposal for consideration at the next meeting.

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

Mark Evans presented proposed protocol changes that would allow changing driver signal amplitude (03-285r2). Mark received advice from Bob Sheffield, Steve Schauer, and Tim Hoglund regarding the operation of a SATA port selector, so that the proposal could be revised to properly reflect port selector and expander behavior.

Mark agreed to prepare a new revision of the proposal for consideration at the next meeting.

4.4 SAS-1.1 ALIGN insertion clarifications (03-334) [Elliott]

Rob Elliott presented a proposal to address issues with ALIGN and NOTIFY insertion for clock skew management and rate matching (03-334r2). The group requested editorial changes and Rob agreed to prepare a new revision.

Rob Elliott moved that 03-334r3 (r2 as modified) be recommended for inclusion in SAS-1.1. Tim Hoglund seconded the motion. In the absence of any objections, the motion passed unanimously.

5. New Business

5.1 SAS 1.1 READY LED signal behavior (04-027) [Cox]

Jim Coomes presented a proposal to restore a previously removed paragraph that describes LEDs as being off when a drive has spun down and it is safe to move the drive (04-027r0). He reminded the group of the problems associated with moving disk drives while the platters are still spinning and the importance of informing operators when it is save to move a drive.

Steve Fairchild pointed out that operators move drives when they want to, which is the practical, real world definition of hot plugging.

The group requested changes and Jim agreed to revise the proposal.

Jim Coomes moved that 04-027r1 (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.

5.2 SAS-1.1:Clarify phy disable in route-table initialization (04-028) [Sheffield]

Bob Sheffield presented a proposal to replace the SMP CONFIGURE ROUTE INFORMATION with PHY CONTROL for disabling phys (04-028r0).

The group requested the addition of details in the proposed new text describing the phys to be disabled to break loops. The group requested that text duplicating information already in SAS be removed from the proposal. Bob agreed to prepare a new revision.

Bob Sheffield moved that 04-028r1 (r0 as modified) 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 SAS-1.1:Close Port Selector Detection Gap (04-029) [Sheffield]

Bob Sheffield presented a proposal to add information about the validity of port selector information reported by the Discover function (04-029r0).

The group requested substantial changes and Bob agreed to rewrite the proposal for consideration at the next meeting.

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

Rob Elliott presented a proposal regarding rate matching aligns (04-032r0). The group discussed the motivation for the proposal.

Concerns were raised about making the change this week and it was noted that phy designers need to review this proposal carefully. Rob agreed to bring the proposal back to the next meeting.

5.5 SAS-1.1:AIP clarifications and XL state transition (04-036) [Hoglund]

Tim Hoglund presented several clarifications to the AIP and XL state machines (04-036r0). The group requested minor changes and Tim agreed to prepare a new revision.

Tim Hoglund moved that 04-036r1 (r0 as modified) be recommended for inclusion in SAS-1.1. Rob Elliott seconded the motion. In the absence of any objections, the motion passed unanimously.

5.6 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 (04-042r0). The group requested changes and George agreed to prepare a new revision for consideration at the next meeting.

6. Review of Recommendations

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

    SAS-1.1: Transport Layer Retries (03-186r5) [Elliott/Jones] {r4 as modified, unanimous}
    SAS-1.1 ALIGN insertion clarifications (03-334r3) [Elliott] {r2 as modified, unanimous}
    SAS 1.1 READY LED signal behavior (04-027r1) [Cox] {r0 as modified, unanimous}
    SAS-1.1:Clarify phy disable in route-table initialization (04-028r1) [Sheffield] {r0 as modified, unanimous}
    SAS-1.1:AIP clarifications and XL state transition (04-036r1) [Hoglund] {r0 as modified, unanimous}

7.   Meeting Schedule

A SAS Protocol Working Group meeting is scheduled for:

Monday, March 8, 2004 commencing at 9:00 a.m. in Dana Point, CA at the Laguna Cliffs Marriott Hotel (949-661-5000), hosted by QLogic Corp.

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

8.   Adjournment

The meeting was adjourned at 5:25 p.m. on Monday January 12, 2004.