Accredited Standards Committee*
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Date: January 17, 2002
Reply to: John Lohmeyer

To: T10 Membership
From: Ralph Weber & John Lohmeyer
Subject: Parallel SCSI Working Group Meeting -- January 15, 2002
                Houston, TX

Agenda

1. Opening Remarks
2. Approval of Agenda
3. Attendance and Membership
4. SPI-4 Topics
    4.1   Resolution of SPI-4 Letter Ballot Comments (01-340) [Penokie]
    4.2   Duplicate Tag ASC Correction in SPI-4 (02-034) [Penokie]
    4.3   Compaq "No" Vote (02-046r0) [Ham]
5. SPI-5 Topics
    5.1   Periodic structures on SCSI buses (00-352) [Barnes]
    5.2   SPI-5 Programmable Termination (01-270) [Aloisi]
    5.3   Timing Budget (02-047) [Petty]
    5.4   SPI-5 Testing [Manildi]
    5.5   Twist and Flat Cable Issues (02-048r0) [Aloisi]
    5.6   Ultra640 SCSI Receiver Offset Issues (02-038) [Brown]
    5.7   Ultra640 SCSI Training Pattern Proposal (02-039) [Leshay]
    5.8   Driver/Receiver Asymmetry Correction (02-045) [Petty]
    5.9   SPI-5 Status
6. Old Business
    6.1   Project Proposal for SPI-6 (01-145) [Lohmeyer]
7. New Business
    7.1   PIP Report [Ham]
8. Review of Recommendations to the Plenary
9. Meeting Schedule
10. Adjournment

Results of Meeting

1.   Opening Remarks

John Lohmeyer, the T10 Chair, called the meeting to order at 9:00 a.m., Tuesday, January 15, 2002. He thanked Rob Elliott of Compaq for hosting the meeting.

As is customary, the people attending introduced themselves and a copy of the attendance list was circulated.

2. Approval of Agenda

The draft agenda was approved with the following changes:

4.2   Duplicate Tag ASC Correction in SPI-4 (02-034) [Penokie]
4.3   Compaq "No" Vote (02-046r0) [Ham]
5.3   Timing Budget (02-047) [Petty]
5.4   SPI-5 Testing [Manildi]
5.5   Twist and Flat Cable Issues (02-048r0) [Aloisi]
5.6   Ultra640 SCSI Receiver Offset Issues (02-038) [Brown]
5.7   Ultra640 SCSI Training Pattern Proposal (02-039) [Leshay]
5.8   Driver/Receiver Asymmetry Correction (02-045) [Petty]
7.1   PIP Report [Ham]

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

5.9   SPI-5 Status

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:

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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. Vince Bastiani     A  Bass Technology          bass.tech@gte.net
                          Consulting
Mr. Bill Galloway      P  BREA Technologies, Inc.  billg@breatech.com
Mr. Robert C. Elliott  P  Compaq Computer Corp.    Robert.Elliott@compaq.com
Dr. William Ham        A  Compaq Computer Corp.    bill_ham@ix.netcom.com
Mr. Wayne Bellamy      V  Compaq Computer Corp.    wayne.bellamy@compaq.com
Mr. Greg Larson        V  Compaq Computer Corp.    greg.larson@compaq.com
Mr. James A. Lott, Jr. A  Dallas Semiconductor     jim.lott@dalsemi.com
Mr. Kevin Marks        P  Dell Computer Corp.      kevin_marks@dell.com
Mr. Gary S. Robinson   P  EMC                      robinson_gary@emc.com
Mr. Ralph O. Weber     P  ENDL Texas               roweber@acm.org
Mr. Douglas Wagner     P  FCI                      dwagner@fciconnect.com
Mr. Eugene Lew         P  Fujitsu                  elew@fcpa.fujitsu.com
Mr. Randy Wasylak      A  Hitachi Cable Manchester rwasylak@hcm.hitachi.com
Mr. George O. Penokie  P  IBM / Tivoli Systems     gop@us.ibm.com
Mr. Dennis Moore       P  KnowledgeTek, Inc.       dmoore@ix.netcom.com
Mr. John Lohmeyer      P  LSI Logic Corp.          lohmeyer@t10.org
Mr. William Petty      A  LSI Logic Corp.          william.petty@lsil.com
Mr. Dave Gissel        V  LSI Logic Corp.          david.gissel@lsil.com
Mr. Mark Evans         P  Maxtor Corp.             mark_evans@maxtor.com
Mr. Russ Brown         V  Maxtor Corp.             russ_brown@maxtor.com
Mr. Bruce Leshay       V  Maxtor Corp.             bruce_leshay@maxtor.com
Mr. John Daly          AV Methode Electronics, Inc. jdaly@methode.com
Mr. Tim Hsia           V  QLogic Corp.             tim.hsia@qlogic.com
Mr. Gerald Houlder     P  Seagate Technology       gerry_houlder@seagate.com
Mr. Daniel F. Smith    AV Seagate Technology       daniel.f.smith@seagate.
                                                   com
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Mr. Paul Sweazey        AV Seagate Technology        sweazeyp@cdg.stsv.
                                                     seagate.com
Mr. Paul D. Aloisi      P  Texas Instruments         Paul_Aloisi@ti.com
Mr. Donald R. Getty     A  Texas Instruments         donald_getty@ti.com

29 People Present

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

4.1 Resolution of SPI-4 Letter Ballot Comments (01-340) [Penokie]

George Penokie reviewed the open SPI-4 letter ballot comments (01-340r0) and related issues. Several changes in the comments resolution were agreed and George agreed to prepare a new revision of the comments resolution document (01-340r1).

4.2 Duplicate Tag ASC Correction in SPI-4 (02-034) [Penokie]

The group reviewed the two options for duplicate task tag additional sense codes in SPI-4. The first option was described as "the old way", wherein the duplicated tag value is not included in the ASCQ. The second option, "the new way", would have the duplicate tag value in the ASCQ of an ASC/ASCQ combination. The first option was agreed as the right way to handle the error.

George agreed to prepare a new revision that contains only the agreed option. In the absence of any objections, the group unanimously agreed that 02-034r1 (r0 as revised) be recommended for inclusion in SPI-4.

4.3 Compaq "No" Vote (02-046r0) [Ham]

Bill Ham presented his concerns with the cable length statements in SPI-4 (02-046r0). The group agreed to accept the premise of several Compaq comments but with revisions to the proposed new wording. Bill and George both pronounced themselves ready to accept the wording changes worked out by the group.

George agreed to update the comments resolution document, which will still be 01-340r1, to reflect the agreed new resolutions for the comments that Bill considered critical for Compaq acceptance of the SPI-4 letter ballot comments resolution.

George Penokie moved that 01-340r1 be recommended as the resolution for the SPI-4 letter ballot comments. Bill Galloway seconded the motion. The motion passed on a vote of 13:1:0. Gerry Houlder stated that his objection was based on the addition of a requirement that a WDTR must be followed by an SDTR.

5. SPI-5 Topics

5.1 Periodic structures on SCSI buses (00-352) [Barnes]

In the absence of Larry Barnes, discussion of this topic was deferred to the next meeting.

5.2 SPI-5 Programmable Termination (01-270) [Aloisi]

Paul Aloisi presented the revised programmable terminator proposal (01-270r1). As requested as the last meeting, Paul had reduced the proposal to just the changes needed to allow terminators to operate in a wider range than previously allowed.

The group found remnants of the programmable terminator proposal even in the revised text and requested changes. Paul agreed to prepare a new revision for presentation at the next meeting.

5.3 Timing Budget (02-047) [Petty]

Based on the ideas presented in 02-045r0 (see item 5.8), Bill Petty walked the group through a first pass at the Ultra640 timing budget (02-047r0). The group discussed the sources of the numbers in the budget, the computed values, how the values are computed, and the degree to which the budget can be met.

It was noted that with the ideas in 02-045r0 the budget sum is positive but Bruce Leshay questioned whether a term is being double counted.

Bill agreed to bring a more detailed look at the timing budget, including clearer presentation of how the intermediate computed values participate in the final results.

5.4 SPI-5 Testing [Manildi]

In the absence of Bruce Manildi, discussion of this topic was deferred to the next meeting.

5.5 Twist and Flat Cable Issues (02-048r0) [Aloisi]

Paul Aloisi presented a discussion of twisted and flat cable and backplane issues in Ultra640 (02-048r0). Paul noted that the purpose of this presentation was to educate the group about the problems of signal attenuation due to regular structures in SCSI configurations.

5.6 Ultra640 SCSI Receiver Offset Issues (02-038) [Brown]

Russ Brown presented some Ultra640 issues to the group (02-038r0). The group agreed with Russ' issues and generally approved of the direction he charted for addressing the issues. Russ agreed to bring a detailed proposal to the next meeting.

5.7 Ultra640 SCSI Training Pattern Proposal (02-039) [Leshay]

Bruce Leshay presented a proposal for the Ultra640 training pattern (02-039r0). The content and length of the training pattern generated much discussion. The complexity of the training pattern description was raised as an issue. The group agreed that the ideas presented need some time to develop and that it would be best to allow time for members to discuss them with the engineers at the factory. Continued discussion of the training pattern was anticipated for the next meeting.

5.8 Driver/Receiver Asymmetry Correction (02-045) [Petty]

Bill Petty presented a discussion of signal path asymmetries (02-045r0) and a mechanism for addressing them.

5.9 SPI-5 Status

George Penokie stated that he plans to have SPI-5 rev 0 out in April incorporating all the things that the group can agree on during the March meeting. He urged everybody to do as much work as possible between now and March on the developing proposals so that SPI-5 rev 0 can contain as much new material as possible.

6. Old Business

6.1 Project Proposal for SPI-6 (01-145) [Lohmeyer]

John Lohmeyer asked that this item be deferred to the March meeting.

7. New Business

7.1 PIP Report [Ham]

Bill Ham briefly reported on the activities of the PIP working group (minutes in 02-019). The group discussed the possibility that the PIP material for Ultra640 might be ready before SPI-5 goes to letter ballot. Incorporating PIP in SPI-5 wholesale was discussed and rejected when the PIP page count was mentioned as over 100 pages.

8. Review of Recommendations to the Plenary

Ralph Weber noted that the following recommendations have been made to the T10 plenary:

    02-034r1 (r0 as revised) Duplicate Tag ASC Correction in SPI-4 [Penokie] - unanimous
    01-340r1 (r0 as revised) Resolution of SPI-4 Letter Ballot Comments [Penokie] - 13:1:0

9. Meeting Schedule

The next meeting of the Parallel SCSI Working Group will be Tuesday March 12, 2002 commencing at 9:00 a.m. in Dallas, TX at the Crowne Plaza Suites (972-233-7600).

10. Adjournment

The meeting was adjourned at 5:40 p.m. on Tuesday, January 15, 2002.