

# SSM MEETING Minutes 02-132r0

April 4, 2002 meeting; 9AM to 6PM SSM meeting at Sheraton Tara, Nashua, New Hampshire – Hosted by Hitachi Cable Manchester

## 1. AGENDA SSM MEETING

### 2. Introductions

Paul Aloisi opened the meeting at 9:00 and thanked Zane Daggett for hosting the meeting. The normal introductions and the fact that this is the working group and does not count toward the T10 membership.

Larry Barnes sends greetings, he has prospects with 3 companies, all mean moving to another area. He has the SSM-2 document, and can either make a CD or he is working with his ISP to create a web page that will have the information.

### 3. Attendance

Paul Aloisi	TI	<a href="mailto:Paul_Aloisi@TI.com">Paul_Aloisi@TI.com</a>	603-222-8687
Zane Daggett	Hitachi	<a href="mailto:zdaggett@hcm.hitachi.com">zdaggett@hcm.hitachi.com</a>	603-669-4347x236
Jie Fan	Madison Cable	<a href="mailto:jfan@madisoncable.com">jfan@madisoncable.com</a>	508-752-2884
Nicholaos Limberopoulos	C&M	<a href="mailto:nlimberopoulos@cmcorporation.com">nlimberopoulos@cmcorporation.com</a>	860-779-4815
A. Bruce Manildi	Seagate	<a href="mailto:bruce_manildi@seagate.com">bruce_manildi@seagate.com</a>	831-439-7229
Martin Ogbuokiri	Molex	<a href="mailto:mogbuokiri@molex.com">mogbuokiri@molex.com</a>	630-527-4370
Himmeler Themistocle	Madison	<a href="mailto:hthemistocle@madisoncable.com">hthemistocle@madisoncable.com</a>	508-752-2884
Richard Uber	Maxtor	<a href="mailto:richard.uber@maxtor.com">richard.uber@maxtor.com</a>	508-770-2568

### 4. Agenda development

Approved

### 5. Approval of previous minutes - 02-072r0

Approved as written

### 6. Action item review -

**Action items reviewed see section 17**

### **T10 minutes 8.9 SCSI Signal Modeling (SSM) {Project 1414-DT} [Aloisi]**

John Lohmeyer reported that SSM had been approved by INCITS and will be published as INCITS/TR-29:2002.

### 7. Administrative structure

Chair - Paul Aloisi

Vice Chair - (Open)

Secretary - Bruce Manildi

Editor - Bruce Manildi

## 8. Presentation Policy

### 10. Presentations

#### 10.1 Carry over presentations

10.1.1 Cable Models and Procedures (02-052) [Bruce Manildi & Umesh Chandra]  
Rev 1 has been posted - tested at 3 feet - 10 meter round cable should be tested, Bruce will get a quote on testing the round cable at Gigatest, more funding may be required.

#### 10.1.2 Periodic Structures in transmission lines, Larry Barnes

- 160 and 320 MHz for twist and Flat, Backplanes - Bruce will work with Larry Barnes

#### 10.1.3 IBIS presentations, (Open)

- Need some contacts with IBIS (Bill Troop?)

#### 10.1.5 Models for instrumentation interfaces status, Jason Chou

Traveling - Remove presented at the last meeting 02-073r0

#### 10.1.6 Backplane presentation, Bruce Manildi

### 10.2 New presentations

#### 10.2.1

#### 10.2.2

### 10.3 Basic system model, Bill Troop IBM

Contact Bill Troop

### 10.4 SSM-2 Document review -

#### 10.4.1 SSM-2

Bruce Manildi and Paul Aloisi will meet with Larry Barnes in Colorado to work the transfer of the SSM-2 document editing. Discussion with Larry, he believes that he has incorporated all the letter ballot comments from the SSM-TR into the current working document of SSM-2. 01-303r0, SSM-TR, SSM-2 working rev and the Fibre Channel modeling document need to be reviewed. Note The Fibre Channel modeling document took the SSM-TR as starting point, building on our work.

Sections 1-6 need a general review and update to the current revisions of specifications. The IBIS development schedule needs to be mapped into the SSM-2 development schedule. IBIS 4.0 is expanding the current IBIS capability, but if IBIS x is the generation, this allows HSPICE type models that would allow a lot more detail in the system models.

Section 6.2.1.5.4.10 needs the Ultra640 driver additions.

Reviewed the section of the document and assigned work to be completed and delivered to Bruce by the June editing meeting. The items were assigned as formal action items listed in section 17.

Host bus adapters need to have three models; end point, center point and when used as a multi-initiator with a Y cable where the whole module is a stub.

Sections 8.4, 9.4 and 10 need input from system companies, Paul Aloisi will contact Bill Ham and Bill Troop to help develop these sections. 9.4 should use eye patterns tied to the receiver mask in the different versions of SPI.

Instrument models need to be updated with the active probe data from Jason Chou's 02-037r0 presentation.

Cable, PCB and backplane model validation measurements should reference sections of the Passive Interconnect Performance standard (PIP).

Terminator model validation is defined in section 6 of the SPI-2 through 5 documents.

Driver model validation should use SPI-X Annex A procedures.

An Annex needs to be added of the examples of concatenations for cables and systems.

We will work out a schedule at the next meeting, but the intent is to forward the document at the same time SPI-5 is forwarded. SPI-5 is planned to forward at the January 2003 T10 meeting.

11. Matrix development for SSM-2

11.1 Overview section: owner, Bill Ham

11.2 Transceiver chips: owner, (Open)

11.3 Bus segment termination: owner, Paul Aloisi / Don Getty

11.4 Host bus adapter (transceiver board): owners, Lee Hearn

11.5 Mated connectors: owner, Martin Ogbuokiri, Steve Wong

11.6 Transition regions: owners, Bob Gannon, Jason Chou

11.7 Bulk cable: owner, Jie Fan, Zane Daggett, Greg Vaupotic

11.8 Backplane: owner, Bruce Manildi

11.9 Cable assemblies, owner Jason Chou (Lead), Bob Gannon, Steve Wong backup

11.10 How to develop IBIS model section 6.2.1, - Complete for transceivers, Connectors - Molex - Guss Panella

12. Simulation integration strategy

12.1 System configurations - Topology, Bruce Manildi

12.2 Data patterns, Bill Ham, Bruce Manildi

12.3 Data rate - group - Ultra640 & Ultra1280 additions

13. Tools:

14. New business

15. Status of models supplied to the T10 web site

16. Next meetings

June 18 SSM Editing, 19 SSM, 20 PIP Lisle, IL - Molex (Editing meeting Tuesday or Thursday) Posted on T10 - meeting section

Aug 13 PIP Editing, 14 PIP, 15 SSM Jason, Embassy Suites, Buena Park, California

Oct 15 SSM Editing, 16 SSM, 17 PIP Jie, Massachusetts

Dec 3 PIP Editing, 4 PIP, 5 SSM Bob Gannon Electronica Pantera, Mexico

17. Action Items:

17.1 Action items from previous meetings

Jie Fan, Madison Cable to provide access info for a point-to-point bulk cable model to the T10 web site.

Status: model is done, verified and are available internally in circuit form - still needs info supplied to T10 web site - needs web link from internal IT folks - carried over with progress - Paul A to write a brief note to Chuck Grant explaining the need to break thru Madison's internal roadblocks.

Carry over - Web site in construction - Commitment but Jie does not have the time frame.

Paul A to send emails to all folks with open action items on Tuesday of each week (until the action item is completed).

Status: ongoing

Larry Barnes to take the material in the SPI-3 and SPI-4 document relating to the signal budget and figure out how to incorporate into the SSM document

Status: carried over - Bruce

Greg Vaupotic to supply model for 30 AWG solid, TPE dielectric, twist and flat. Models for the flat region and for the twist region from 2D simulations, multiple frequencies to be supplied separately. Complete model for flat + twist needs to be constructed by the user from RLGC matrices.

Status: carried over

Jie to supply source figures describing the curve fitting extraction method to Larry.

Status: carried over, sent to Larry - Done

Jie to present the RLGC data resulting from the curve fitting at the October meeting.

Status: carried over - Jie will test a cable and send cable to Umesh

Bruce Manildi to contact connector suppliers to determine how they can help to supply models for unmated connectors.

Status: On going - Gigatest working on the testing. - Check with Bob Gannon - Cable test and sent to Electronica Pantera for assembly - the cable needs to be returned to gigatest for retesting.

Bob Gannon to investigate IDC effects in transition regions for flat cables.

Status: On going

Bruce Manildi to investigate IDC effects in transition regions for round cables.

Status: on going

## 17.2 New action items from present meeting

Jie and Zane to send 10 meter round cable samples to Bruce for testing.

Bruce will get a quote from Gigatest for the testing of the 10 meter samples

Paul Aloisi will contact Bill Troop or Larry Barnes about providing status for IBIS and additional system model presentations. Should SSM-2 be targeted for IBIS 4 or IBIS X.

Paul Aloisi will check with Larry Barnes on the IBIS vote for Bird 71 (Step back driver)

Paul Aloisi & Bruce Manildi will meet in Colorado with Larry Barnes for the transfer of the documents (SSM-TR Rev 5 and SSM-2) to Bruce for editing.

Jie, Nicholaos and Zane Daggett will review cable model section 7.3.2 for the June Editing meeting. Jie Fan will write up a new procedure for creating the models, that will be sent to Bruce Manildi before the next meeting, that Bruce will distribute. Verify Gigatest method.

Martin Ogbuokiri will review the connector section 7.3.2.5 for the June Editing meeting.

Richard Uber will review the transceiver model section 7.4.2 for the June Editing meeting

Paul Aloisi will review the terminator model section 7.4.3 for the June Editing meeting

Jason Chou & Martin Ogbuokiri will review the instrumentation model section 7.5 for the June Editing meeting

Lee Hearn & (Paul Aloisi Contact Bill Weurtz for an LSI representative and Qlogic representative) to review section 8.1 & 9.4.3 Host bus adapter model for the June Editing meeting

Bob Gannon, Nicholaos Limberopoulos & Martin Ogbuokiri will review Cable assemblies section 8.2 for the June Editing meeting

Bruce Manildi will review the Backplane model section 8.3 & 9.4.3 for the June Editing meeting

Paul Aloisi will contact Bill Ham and Bill Troop about reviewing the system section 8.4 & 9.5 for the June Editing meeting

6.2.1.5.10 Driver section needs the additions for SPI-5 - Bruce Manildi

Paul Aloisi will contact Bill Ham and Bill Troop about reviewing the system section 10 - Ultra640 additions needed for the June Editing meeting

Paul Aloisi will contact John Lohmeyer about the number of hits for the model section. There are more models that can be added, Cable models from Hitachi Cable Manchester and Madison will be added. Seagate fan out models will be added.

18. Adjourn  
3:05 PM