

Accredited Standards Committee\*  
X3, Information Technology

Doc. No.: X3T10.1/96a147R1

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Project:

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Reply to: Larry Lamers

To: Membership of X3T10.1  
From: Lawrence J. Lamers, Chair X3T10.1  
Subject: Minutes of X3T10.1 Working Group : June 24-26, 1996  
June 24-26, 1996 -- St. Petersburg, FL

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Agenda

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## 1. Opening Remarks

Larry Lamers convened the meeting at 9:00 am. He thanked Chuck Brill of AMP for hosting the meeting.

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

It was stated that the meeting had been authorized by X3T10.1 and would be conducted under the X3 rules. Ad hoc meetings take no final actions, but prepare recommendations for approval by the X3T10.1 task group. The voting rules for the meeting are those of the parent committee, X3T10. For the ad hoc, other than straw votes, the voting rules are: one vote per participating company.

The minutes of this meeting will be posted to the X3T10 BBS and the SSA Reflector and will be included in the next X3T10.1 committee mailing.

Larry stated that the X3T10.1 mailings are part of the X3T10 mailings. Persons that want to receive documents should subscribe to the X3T10 mailings by sending their request to the secretariat. An electronic option is available.

## 2. Attendance and Membership, Introductions

Attendance at working group meetings does not count toward minimum attendance requirements for X3T10.1 membership. Working group meetings are open to any person or company to attend and to express their opinion on the subjects being discussed.

The following people attended the meeting.

Lawrence Lamers	Adaptec	408-957-7817	ljlammers@aol.com
Charles Brill	AMP, Inc	717-592-6198	cebrill@amp.com
Lisa A. Huff	AMP, Inc	717-986-3143	lisa.huff@amp.com
Bill Mable	Amphenol Interconnect Products	607-786-4236	
Adge Hawes	IBM Corporation	011-44-1705-486363	adage@uk.ibm.com
Chris Parker	IBM Corporation	912-892-2719	
John Scheible	IBM Corporation	512-823-8208	scheible@vnet.ibm.com
Daniel Tsai	IBM Corporation	408-256-5729	
Wolfgang Drichelt	ITT Canon	49-7151 699 233	101573.2601@compuserve.com
Werner Pfitzenreiter	ITT Canon	7151-699147	
Brian Morissette	Madison Cable	508-752-2884 x214	brian_morissette@madisonusa.ccmil.compuserve.com
Vince Melendy	Methode Electronics	617-273-2650	72540.1774@compuserve.com
Mark DeWilde	Pathlight Technology	607-266-4000	mark@ironics.com
Neil Edmunds	Xyratex	011-44-1705-486363	neiledmunds@uk.xyratex.com
David E. Instone	Xyratex	01705 486363	dinstone@uk.xyratex.com

3. Approval of Agenda

The agenda was approved.

4. Approval of Minutes

The minutes of the last Working Group meeting (see 96a130r0) were approved.

5. Document Distribution

Larry Lamers stated that the next mailing deadline is Wednesday, July 24, 1996. Documents are available on the BBS (714) 533-7950 in area 26 and at ftp.symbios.com in /pub/standards/io/x3t10.1

X3T10.1/95a210R3	Interlocked Election of Master Process - Simplified Version	M. DeWilde
X3T10.1/96a119R0	Extensions to Simple Speed Negotiation	A. Hawes
X3T10.1/96a124R0	Empirical/Analytical Test Results for Internal Connector	D. Bunker
X3T10.1/96a127R2	Device Services Interface	A. Hawes
X3T10.1/96a134R1	Third Party Data Transfers	A. Hawes
X3T10.1/96a136R1	S3P Services Model	J. Scheible
X3T10.1/96a140R1	Third Party Support proposal for S3P	J. Scheible
X3T10.1/96a141R1	Entend Buffer Full condition to BUSY	J. Scheible
X3T10.1/96a142R0	SSA-PH2 changes proposal	J. Scheible
X3T10.1/96a143R0	Resurrection of Longer full speed Link proposal	M. DeWilde
X3T10.1/96a144R0	Notification of Change in ULPs supported	M. DeWilde
X3T10.1/96a145R0	TL2 Configutor Table Management Support	M. DeWilde
X3T10.1/96a146R0	Changes to TL2 Rev 1	J. Scheible
X3T10.1/96a147R0	Minutes of Working Group - 6/96	L. Lamers
X3T10.1/96a148R0	Minutes of Plenary Meeting #16 - 6/96	L. Lamers
X3T10.1/96a149R0	Jitter Nulling	D. Instone
X3T10.1/1051D r1a	SSA SCSI-3 Protocol	J. Scheible

## 6. Review of Old Action Items

- 10) Wolfgang Drichelt will provide data comparing the test specified in PH2 with the line injection method at the next meeting. Completed.
- 11) Martin Chester will provide a proposal for the performance requirements at the next meeting. [Carried over. Completed.](#)
- 12) Adge Hawes to provide an electronic version of 96a127r1. Completed.

## 7. 2nd Generation Protocol Layer Topics []

### 7.1 Hot Swapping () []

This issue was addressed adequately with the confirmed status.

### 7.2 Protocols for other ULPs

Mark reported that he had not made significant progress but wanted the topic retained for the next meeting.

### 7.3 Opportunities for improved array performance (96a134) [Hawes]

Adge Hawes stepped the group through a proposal for features that would improve array performance. Adge took notes to generate a revised proposal. The plan is to incorporate this into the next revision of the draft.

Recommend 96a134r1 be incorporated into the working draft.

### 7.4 NACA Bit () [Scheible]

There is still an open question on how the NACA bit is supported in serial interfaces. The consensus was to have S3P devices always perform automatic contingent allegiance and have the S3P layer in the initiator handle the emulation for SCSI-2. John will develop an emulate CA proposal.

### 7.5 Third party support proposal for S3P (96a140r0) [Scheible]

Add note to map to 10-byte versions of RESERVE and RELEASE to access more than 3-bits worth of initiators.

Recommend 96a140r1 be incorporated into the working draft.

### 7.6 SSA-S3P Services Model (96a136r1) [Scheible]

Discussion on adding a logical path element to provide a method to insure ordering. Need to associate a logical path id with a task set. A logical path guarantees ordered delivery.

Redefine logical path as a logical outgoing path and a logical incoming path. Add a parameter to SEND SMS for the logical outgoing path; change to GET LOGICAL RETURN PATH; define logical path to be a unidirectional connection between two nodes; add two paragraphs to services model to explain usage.

Recommend 96a136r2 be incorporated into the working draft.

### 7.7 Extend Buffer Full condition to BUSY (96a141r0) [Scheible]

This addresses a number of issues with delivery of commands to protect the ordering of in-flight commands.

Recommend 96a141r1 be incorporated into the working draft.

## 8. 2nd Generation Transport Layer Topics

### 8.1 Congestion Policy () [Monia]

No activity.

### 8.2 Interlocked Election of Master Process (95a210r2) [DeWilde]

Mark DeWilde presented a revised proposal for a simplified interlocked election of master. He set up as a rules based because it is recursive. Ther rules for reconfiguration if there is a master in a joined sub-web will be incorporated. The consensus is that a problem exists; the proposal is not complete enough to be put into the current working draft; a tele-conference is planned to followup on this topic.

### 8.3 Notification of Change in ULPs supported (96a144r0) [DeWilde]

Mark DeWilde proposed adding a code to AYSNC ALERT to indicate the ULP has changed.

Recommended to incorporate 96a144r0 into the working draft.

### 8.4 TL2 Configutor Table Management Support (96a145r0) [DeWilde]

Tool to remove part of the initiators table space - DELETE RETURN PATH; add a separate field for the deleted return path id.

Tool to get lost historical information - QUERY REGISTRATION.

Questions on initial configuration and whether it is mandatory for devices to support these SMSs.

### 8.5 Changes to TL2 Rev 1(96a146r0) [Scheible]

John Scheible stepped through a number of issues that need to be resolved in TL2.

- 1) Make all configators master capable
- 2) Change as shown with additional parenthesis
- 3) remove redundant table
- 4) update picture
- 5) need to specify the reciever frequency

### 8.6 Clarification of timeouts (96axxr0) [DeWilde]

Mark DeWilde noted that the configuration process is open ended and we need to establish a timeout for the configuration process. No conclusion on the time limit was reached.

### 8.7 Resurrection of Longer full speed Link (96a143r0) [DeWilde]

Agreement in principal; proposal needs further work for incorporation for the next mailing.

Recommend rev 1 for incorporation into working draft.

## 9. 2nd Generation Physical Topics

### 9.1 MDSM Connector test results

Werner Pfitenreiter presented impedance measurement technique and data. He also discussed the transfer impedance method vs the line injection method. Both test methods showed good correlation.

A remark to state a preference for a closed box for the SSA test method was suggested.

## 9.2 Electrical issues () []

The values of the components for the near-end termination need to be specific. Add a clause for driver source termination.

## 9.3 Device Interface to Enclosure (96a127r1) [Judd]

Adge Hawes reported that he has converted the document to Word format and posted it to the BBS. This version will be available on the ftp site and the electronic mailing. Adge plans to format the document as an SSA IA Tech publication, with expectation of formal approval at the August meeting. Anyone having comments on this document should direct them to Adge.

## 9.4 SSA-PH2 changes proposal (96a142r0) [Scheible]

Add line driver sub-clause - values for components need to be determined.

Recommend that revision 1 based on the set of foils developed at the meeting.

## 9.5 Jitter Nulling (96a149r0) [Instone]

David Instone presented some test results that illustrated a phenomena called jitter nulling. Each individual opening needs to meet the 2 ns detection time; the allowance for jitter that was allowed for multiple occurrence is misleading.

Intersymbol interference is the majority of the jitter; using just the DIS character and an alternte test to eliminate most of the intersymbol interference and picking a clock point gives a much better determination of a good signal. This test does not address the jitter which is not caused by intersymbol effects (i.e., random jitter).

David proposed adding this test to PH2 as an annex with some additional requirements in the body of the draft.

Chris Parker showed data on a test for cable certification that he is working on with the cable folks. If this proves out a test to qualify cables independantly of other system components may be possible.

A study group has been requested on cable testing and validation of driver termination. Chris Parker is organizing this meeting.

## 9.6 SSA Optical converter (96a149r0) [Melendy]

Vince Melendy of Methode Electronics made presentation on an optical convertor that is being developed for high speed serial links. He was requesting some input on dimensions; LED or laser; and operating distance.

Vince would like a specification written for optical converters.

## 10. New Business

### 10.1 PH1 Public Review Comment (96axxr0) []

Dave Instone state he had submitted a public review comment that stated the slew rate should be measured at individual traces. PH2 will be revised to incorporate this. Dave stated that this would satisfy his public review comment and he would not seek to change PH1.

No other comments have been received at this time.

## 10.2 Report on Serial Express (96axxxr0) []

Adge Hawes made the following points regarding the P1394.2 "Serial Express" draft he had reviewed.

- isoch not entirely worked out
- encoding method is not as robust as 8B10B
- assumption for physical based on FC, but not fully understood
- arbitration is 'weird' with the 80/20 assumption regarding priority
- full utilization of the bus is problematic
- spatial reuse is claimed but does not have the full set of SSA capability

## 10.3 Report on Serial Concerns Meeting (96axxxr0) []

Because of the S3P John will request that RESEVRE(6) and RELEASE(6) be made optional. The data integrity issues have been addressed in SSA. A serial concerns reflector is operational at serial\_concerns@zk3.dec.com.

## 10.4 SSA-160 Discussion (96axxxr0) []

The SSA-IA is looking for a marketing document for SSA-160. The net of the discussion is that this document should illustrate the changes from UIG95-PH to SSA-PH1/TL1 to SSA-PH2/TL2 and offer advice to users on strategies for migration.

## 11. Call for Patents

Larry Lamers requested that anyone aware of any patents required for the proposals be disclosed in accordance with the ANSI patent policy. Refer to the minutes of prior meetings for items already identified.

## 12. Action Items

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## 13. Meeting Schedule

The next working group meeting of X3T10.1 will be August 26-28, 1996, in Ithaca, NY at the Ramada Inn Airport & Executive Conference Center, hosted by Pathlight. The meeting will begin at 9:00 a.m. on Monday.

For reservatons, attendees should Contact Fran Hopkins at Pathlight by any of the following means:

Telephone: 607 266 4000,  
fax: 607 266 4010,  
email: fran@pathlight.com

The long-term SSA week of meetings are scheduled as follows:

Week of October 28, 1996 in Hawaii, HI hosted by IBM.

Week of February 24, 1997 in Austin, TX hosted by IBM.

Week of June 23, 1997 in \*.

Week of October 27, 1997 \*.

\* = Tentative locations

Please note that changes to this schedule may occur. All changes to meeting dates, locations, and agendas will be posted to the X3T10-SSA reflector.

## 14. Adjournment

The meeting adjourned at 2:45 p.m. on Wednesday.