Unapproved Minutes
IEEE P802.3AP - Backplane Ethernet
March 15 -17, 2005
Atlanta, GA

Prepared by: John D'Ambrosia

Meeting convened at 8:41 am, March 15, 2005

Agenda / Housekeeping Issues

- Introductions
- Agenda (agenda_01_0305)
    - Discussion – Chair asked for the following presentations to be added
        - Caithy Liu's presentation – met the timeline, but with changes
        - Amir update with technical change
    - Approved by voice vote without objection
        - Moved by Schelto Van Doorn
        - Seconded by Mile Altmann
- Review of Minutes from January meeting
    - Motion to approve minutes from January meeting
        - Moved by Rob Brink
        - Seconded by Mike Lerer
        - Minutes were Approved by voice vote without objection
- Goals for meeting discussed
    - Development of Draft 1.0
        - Adopt proposals to fill holes in baseline text.
        - Big Ticket Items
            - 10GBASE-KR Signaling
            - Backplane Channel Specifications
            - Compliance Test Methodologies
        - Resolve comments against Draft 0.8
    - Presentations
    - Formalize points of agreement with motions
- IEEE rules read to the body by Chair
- IEEE Patent policy read to the body by Chair
- Inappropriate Topics for IEEE meetings read to the body by Chair
- IEEE Project Flow Discussed
- Project Details
    - Approved PAR - http://standards.ieee.org/board/nes/projects/802-3ap.pdf
    - 5 Criteria - http://ieee802.org/3/ap/802_3_ap_5criteria.pdf
    - Objectives - http://ieee802.org/3/ap/802_3_ap_objectives.pdf
- Project schedule discussed
    - See agenda_1_0305 for Project Timeline
- Chair requested
    - All questions on presentation be held to end
    - All questions relevant to content and clarification of content

Presentation #1

Title – Editor's Report
By – Schelto van Doorn
See – vandoorn_01_0305.pdf

Presentation #2

Title – Signaling Ad Hoc Report
By – Mike Altmann
See - altmann_01_0305.pdf

Discussion

- Need to review status of Signaling Ad Hoc

Presentation #3

Title – Simulation Results for 10 Gb/s Duobinary Signaling
By – Majid Barazande-Pour
See - barazande_pour_01_0305

Discussion

- Number of taps reported in presentation were minimum number of taps (FFE / DFE) to obtain 10^-18 BER
- Effect of Rx jitter calculated analytically, not simulated
- Only 15K bit were simulated, no comparison was done between this and higher bit count simulations
- Concern discussed regarding handling of xtalk, but no comparisons were done with xtalk removed as a point of comparison.
    - Decreased sensitivity to xtalk related to null at half speed where no boost is needed, where channel xtalk tends to increase
- No DCD component added
- FFE in Rx will help mitigate jitter amplification, but is not guaranteed to do so when implemented in Tx (depends on where non-linearity resides, prior to FFE or after FFE).

Break – 9:52am
Reconvened at 10:18 am

Presentation #4

Title – Simplified Theory of NRZ, Duo-binary, and PR-4
By – Charles Moore
See - moore_01_0305

Presentation #5

Title – Signaling Method Performance Results
By – Stephen Anderson
See anderson_01_0305.pdf

Discussion

- The different perspectives that the data shows is that the performance of a given signaling scheme depends on the channel or vice versa.

Presentation #6

Title – Comparison of Signaling Schemes for 802.3ap
By – Cathy Liu
See liu_01_0305.pdf

Break for Lunch at 11:58
Meeting Reconvened at 1:25 pm

Presentation #7

Title – Simulation Results for 10Gb Serial BP Links
By – Mike Altmann
See altmann_02_0305.pdf

Discussion

- Results were not necessarily what was expected, and need to review on a case by case basis

Presentation #8

Title – Comparison of NRZ, PR-2, and PR-4 signaling
By – Rob Brink
See brink_01_0305.pdf

Discussion

- Chair asked secretary (John D'Ambrosia) to moderate discussion of presentation to allow chair's participation in the discussion of his company's presentation.

Presentation #9

Title – NRZ-/DFE Simulation Results Over Ad-Hoc Channels
By – Joe Abler
See abler_01_0305.pdf

Discussion

- Analysis considered conservative
- Concern expressed over low number of channels that were able to be equalized
- Margin was a total of 10ps opening
- Discussion over channels working / not working – channels to

Break at 2:50
Meeting reconvened at 3:10

Presentation #10

Title – NRZ Simulation on Pre-Selected Ad-Hoc Channels
By – Amir Bar-Niv
See bar_niv_01_0305.pdf

Presentation #11

Title – 10 Gb/s NRZ Signaling on Ethernet Backplane
By – Petre Popsescu
See popsescu_01_0305.pdf

Presentation #12

Title – Channel Model Ad Hoc Report
By – Adam Healey
See healey_01_0305.pdf

Presentation #13

Title – 10 Gbps Data Transmission in FR-408 GbX Reference Backplane
By – Gourgen Oganessyan
See oganessyan_01_0305.pdf

Discussion

- Question regarding humidity testing with FR408 was raised.

Presentation #14

Title – Improved HVM ATCA Models
By – William Peters
See peters_01_0305.pdf

Discussion

- Discussion regarding different issues related to manufacturing and materials selection

Presentation #15

Title – Enterprise Midplane Channel Definition
By – Matt Hendrick
See hendrick_01_0305.pdf

Discussion

- Different architecture that has not been discussed to date.
- Fabric cards would be one side and blades would be on the other.
- Fabric card has estimated maximum thickness of 0.092".

Presentation #16

Title – Comparisons of Different S-Parameter DC Extrapolation methods and Their Impacts on Equalization
By – Xiao Ming Gao
See gao_01_0305.pdf

Modification to Agenda Request
Chair asked for approval from group to move presentations in morning (Thaler, Szczepanek, Fakterman) to afternoon, and start comment resolution in the morning.
Approved by voice vote without objection.

Meeting break for day at 5:30pm

Meeting Reconvened Wednesday, at 8:30am

Presentation #17

Title – Specifying Crosstalk
By – Charles Moore
See moore_02_0305.pdf

Presentation #18

Title – Crosstalk Penalty Analysis
By – Petre Popsescu
See popsescu_02_0305.pdf

Comment Resolution

Motion #1 General Session Motion
Description: Move to accept suggested remedy with the table of a range and resolutions of the taps being informative.
Motion Type: Technical 75 % required
Moved By: Justin Gaither
Seconded By Charles Moore

Results:	All	Yes – 24	No – 1	Abstain – 15
	802.3	Yes - 18	No - 1	Abstain - 11

P/F **Motion Passes**

Meeting broke for lunch at 12:08pm
Meeting reconvened at 1:31pm

Presentation #19

Title – Codes Comparison for 10G Backplane System
By – Boris Fakterman
See fakterman_01_0305.pdf

Presentation #20

Title – CEI-P FEC and 802.3ap
By – Andre Szczepanek
See szczepanek_01_0305.pdf

Discussion

- Pat Thaler – discussion of undetected error codes in Ethernet and adding FEC

Presentation #20

Title – Digital Signal Detect Function
By – Pat Thaler
See thaler_01_0305.pdf

Discussion

- Discussion in room about the need for analog signal detect
  - Some would like to see it go away, as it causes problems and could hinder interoperability
  - It has been shown Upper protocols detected signal detect, prior to the actual signal detect.
  -

Meeting Break at 3pm
Meeting reconvened at 3:25pm

Comment Resolution

Motion #2	General Session Motion			
Description:	Move to accept Signal Detect as part of the KX Baseline (as written).			
Motion Type:	Technical 75 % required			
Moved By:	Fulvio Spagna			
Seconded By	Ilango Ganga			
Results:	All	Yes – 19	No – 4	Abstain – 16
	802.3	Yes - 11	No - 4	Abstain - 12
P/F	**Motion Passes**			

Motion #3	General Session Motion			
Description:	Move to accept Signal Detect as part of the KX4 Baseline (as written).			
Motion Type:	Technical 75 % required			
Moved By:	Schelto van Doorn			
Seconded By	Ilano Ganga			
Results:	All	Yes – 19	No – 4	Abstain – 14
	802.3	Yes - 15	No - 5	Abstain - 9
P/F	**Motion Passes**			

Meeting adjourned at 6pm.

Meeting reconvened 8:30am Thursday, March 17

Comment Resolution

Regarding Comment #39

Presentation #21

Title – Return Loss Data
By – Shannon Sawyer
See sawyer_01_0305.pdf

Break - 10am
Reconvene at 10:30am

Comment resolution continued.

Chair asked the room if anyone wanted to elevate editorial comments to technical comments. No one indicated there was a need.

Motion #4	General Session Motion			
Description:	Move that 802.3ap Task Force Adopt NRZ as the baseline signaling targeting the channel set consisting of Molex, Tyco, and updated Intel channels.			
Motion Type:	Technical 75 % required			
Moved By:	Mike Altmann			
Seconded By	Brian Seemann			
Results:	All	Yes – 36	No – 6	Abstain – 4
	802.3	Yes - 27	No - 3	Abstain - 3
P/F	**Passes**			

Discussion

- See seemann_01_0305
- Intel will provide new channel data that will supersede existing channel data that Intel provided previously.
- Concern regarding power of implementation. Innovation and progress will drive power down.
- Implementation plays a key role in designing channels.

Straw Poll #1 – Is further investigation of the use of FEC codes valuable to 802.3ap?
Yes - 26
No – 6

Signaling Ad Hoc has completed its mission, and no further meetings planned. Thanks to Mike Altmann and all participants!

Channel Ad Hoc

- Schedule to be announced.

Draft 0.9 Schedule

- Review Period Open – April 20
- Review Period Close – May 11

“Bit Ticket” Items

- Backplane Channel Specification
- 10GBASE-KR Transceiver Compliance Methodology

Motion #5 General Session Motion
Description: Accept proposed comment resolutions and direct editor to create Draft 0.9 based on comment resolutions and adopted proposals and submit to the Task Force for review.
Motion Type: Technical 75 % required
Moved By: John D’Ambrosia
Seconded By Jeff Lynch
Results: All Yes – 40 No – 0 Abstain – 0
P/F - **Passes**

Straw Poll #2 - Does the task force feel the need for June Interim?
Yes - 15
No - 0

Call for new business - none

Motion to Adjourn
Moved by Tom Palkert
Seconded by Schelto Van Doorn
Approved by voice vote without objection

Meeting adjourned at 11:55am.