Meeting Minutes
IEEE P802.3bq Channel Model Ad Hoc
October 16th, 2013
Prepared by Pete Cibula and Brad Booth

Meeting Agenda:

1) Roll call - Record attendance, attendees' names and affiliations

2) Reminder of IEEE patent policy: www.ieee802.org/3/patent.html

3) Houskeeping:

   a) Review & approve meeting agenda.
   b) Approve meeting minutes from the October 16th meeting (will be available at the P802.3bq public area)

4) New business for the October 16th ad hoc meeting as follows:

   a) Channel Modeling ad hoc sub-team updates with discussion
      i) MDI & isolation path (M. Grimwood and G. Zimmerman) – Update on data collection for MDI and isolation path with discussion.
      ii) PCB transmission lines & noise for 10GBASE-T systems (B. Booth and P. Cibula) - Update on data collection on PCB transmission lines and noise for 10GBASE-T systems with discussion.
      iii) MDI-to-MDI cabling channel (C. DiMinico and W. Larsen) – Update on MDI-to-MDI cabling channel efforts with discussion

   b) New contributions with discussion
   Limit Line Scaling (Mike Grimwood, Broadcom; George Zimmerman, CME Consulting; Wayne Larsen, Commscope)

5) General Discussion and meeting wrap-up
   a) Review action items from the October 16th meeting
   b) Suggestions for future presentations
   c) Next steps/future meetings

The 9th meeting of the P802.3bq Channel Modeling Ad Hoc was called to order at 8:09 AM Pacific Time.

1) Participants were asked to email B. Booth or P. Cibula a note confirming their attendance. The attendance record at the bottom of these minutes is a compilation of email confirmations and an online meeting log.

2) D. Chalupsky reminded everyone of the patent policy. Those not familiar with it were directed to the URL above.

3) Houskeeping & general updates:

a) The agenda was reviewed with those in attendance; no modifications were suggested and the agenda was approved without opposition. The agenda stands approved.

b) Participants were informed that the October 2nd meeting minutes were posted and are available for review.

4) The meeting was then opened to hear new business for the October 16th ad hoc meeting as follows:

a) Channel Modeling ad hoc sub-team updates

i) MDI & isolation path (M. Grimwood and G. Zimmerman)
(1) Subteam participants are working to have 16 port measurements ready for the November meeting.

ii) PCB transmission lines & noise for 10GBASE-T systems (B. Booth and P. Cibula).

(1) Subteam participants are continuing their effort to evaluate the effects of variations in channel impedance using 90 ohm and 110 ohm targets, as well as to characterize the robustness of the host PCB trace channel model with respect to stability, causality, and passivity.

iii) MDI-to-MDI cabling channel (C. DiMinico and W. Larsen).

(1) The subteam has provided a set of MDI-to-MDI cable channels necessary for PHY participants to begin evaluating PHY solutions/characteristics, thus meeting their charter and stated goals. The subteam currently plans to maintain their 3 week meeting schedule and will continue to support other channel modeling sub-teams and PHY activities as needed.

b) New contribution - Limit Line Scaling (Mike Grimwood, Broadcom; George Zimmerman, CME Consulting; Wayne Larsen, Commscope)

i) W. Larsen presented the contribution to meeting participants, noting that the scaling methodology is intended to allow modelers and PHY designers to (within reason) evaluate modeled/scaled worst-case channels that complement the channels characterized by the MDI-to-MDI cabling channel subteam. The goal in bringing this contribution forward is to solicit feedback on this scaling methodology and its application in creating representative/realistic near-limit-line channels. It was noted that several of the defined channels do provide near-limit-line performance for some channel parameters, a fact acknowledged by the contributors.
ii) Participants noted that the scaling techniques as presented are applied to frequency domain magnitude characteristics, which led to some discussion about the significant of the phase response and how it could be assessed using time-domain techniques. This topic was left open as an area for further study.
iii) Participants discussed several related topics, including the relationship of scaling to field measurements using hand-held testers, advantages & disadvantages of a “touch the limit line” vs. “filling in the white spaces” approach to parameter scaling, and the merits of parameter scaling vs. synthesis. No specific actions followed from these discussions.

iv) Closing discussion concerned next steps for the methodology as well as a general discussion of the "state of the model."
   (1) With respect to next steps, it was noted that FEXT is the next characteristic that will be evaluated for scaling. Several participants noted that they would like the opportunity to evaluate and experiment with the methodology outlined in the contribution.
   (2) With respect to the "state of the model," it was noted that scaling methodologies, applied within reason, can provide some value in evaluating corner cases. Some additional work in characterizing corner cases for PCB transmission lines will be helpful, and participants are looking forward to reviewing MDI and isolation path model elements.

v) Wayne Larsen was asked if he could provide sets of equations that correspond to steps outlined in the scaling contribution; he graciously agreed to provide those to the ad hoc. The scaling equations will be posted to the channel modeling ad hoc when they are available. (Thank you, Wayne).

Action Required: Wayne Larsen – Provide equations for the scaling methodology presented to the channel modeling ad hoc.

c) Closing discussion – It was noted that there is a potential conflict between the proposed date for the next channel modeling ad hoc meeting and another standards body meeting. Participants agreed that the meeting should be rescheduled so as to not conflict with other scheduled meetings.

5) The next meeting was scheduled for Tuesday, October 29th, 2013 at 8:00AM PDT.

The P802.3bq Channel Modeling Ad Hoc meeting was adjourned at 9:30 AM Pacific Daylight Time.

Meeting Attendance

Name	Employer	Affiliation (if different)
Anna An	FIT-Foxconn	
Brian Buckmeier	Bel Fuse, Inc.	
Dave Chalupsky	Intel	
Jerry Chiang	Foxconn	
Pete Cibula	Intel	
Chris DiMinico	MC Communications	Panduit
Thuyen Dinh	Pulse	
Fred Fons	Foxconn Hbg	
Mike Good	Berk-Tek	
Mike Grimwood	Broadcom	
John Hess	Bel Fuse, Inc.	
Andrew Jimenez	Anixter	
Wayne Larsen	Commscope	
Shachi Paithankar	Intel	

Rich Mellitz	Intel	
Victor Renteria	Bel Fuse, Inc.	
Masood Shariff	Commscope	
Sterling Vaden	OCC	
Paul Wachtel	Panduit	
Bob Wagner	Panduit	
Peter Wu	Marvell	
George Zimmerman	CME Consulting	Commscope, Aquantia