Unapproved Meeting Minutes
IEEE P802.3bq Rx CMNR Ad Hoc

October 22nd, 2014
Prepared by Pete Cibula

Meeting Agenda:

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

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

3) Housekeeping:
   a) Review & approve meeting agenda.
   b) Review the ad hoc charter/scope and deliverables.

4) New business for the October 22nd ad hoc meeting as follows:
   a) Review relevant content from prior study group/task force work and/or new contributions.
   b) Discuss actions/next steps needed to begin moving forward with developing the ad hoc's deliverables.
   c) New contributions with discussion
      - 40GBASET EMC (German Feyh and Neven Pischl, Broadcom).
      - George Zimmerman provided a copy of "An Improved Common Mode Noise Tolerance Test for 1000BASE-T" (Luc Adriaenssens, then SYSTIMAX Systems Applications Director) for review by participants. This contribution provided the basis for IEEE Std 802.3-2012 Section Three, Subclause 40.6.1.3.3 and Annex 40B, which were carried forward with modifications to Section Four, Subclause 55.5.4.3.

5) General Discussion and meeting wrap-up
   a) Next steps/future meetings

The 1st meeting of the P802.3bq Receiver Common-Mode Noise Rejection (Rx CMNR) Ad Hoc was called to order at 8:20 AM Pacific Standard Time.

1) Participants were asked to register their attendance by email; responses are reproduced in the attendance record at the end of these minutes.

2) Participants were reminded of the IEEE's patent policy. All in attendance acknowledged the policy; as a reference, anyone not familiar with said policy is directed to the URL above.

3) Houskeeping & general updates:

   a) The agenda was reviewed with those in attendance. Attendees were notified that a contribution related to 40GBASE-T EMC had been received and would be added to the proposed agenda. The updated agenda was accepted without opposition.

b) The chair presented information on ad hoc communications and meeting logistics. Details are available in the ad hoc overview (cibula_01_1022a.pdf).

c) The chair presented a proposed charter and scope/deliverables for the ad hoc as follows:
   - Charter and scope - Investigate the receiver common mode noise rejection (Rx CMNR) test, also known as the cable clamp test, and define an appropriate requirement for 40GBASE-T PHYs.
   - Deliverables - Develop corresponding text for IEEE P802.3bq™/D1.0, subclause 98.5.4.3 Common mode noise rejection and any associated Annexes.
     (1) As a point of clarification, it was noted that developing corresponding text does not preclude recommending that the requirement be removed from the standard.

d) Participants reviewed areas for discussion & investigation, relevant previous contributions, and a "shopping list" of things needed to move the work of the ad hoc forward.
   - Areas for discussion & investigation covered three main areas, including those along the lines of improving and augmenting the existing test, of replacing the existing test, and of deleting the existing requirement
   - Relevant previous contributions included material on screened cabling systems, twisted pair common-mode noise rejection specifications, and some suggestions for 40GBASE-T.
   - A non-comprehensive list of things needed included reviewing the relationship/correlation between the Rx CMNR test and system immunity requirements, clarifying relevant performance parameters of the channel components (cabling/MDI/magnetics/PHY), and defining/characterizing possible test implementations.

e) Participants then heard a new contribution related to 40GBASE-T EMC, submitted by German Feyh and Neven Pischl of Broadcom and presented by German and Tom Souvignier (also of Broadcom)
   - The presenters shared their motivation, which is to provide a test (replacing 98.5.4.3) that exhibits the EMI-suppression quality of magnetics, connectors and cables in a setup that is related to the required EMC test setup. The proposed test would use test setups and levels for conducted and radiated immunity per manufacturers' requirements, and employ a new PHY test mode that measures management-register-reportable maximum common-mode and differential-mode voltages observed during a noise sweep or scan with transmitters disabled. Pass/fail criteria (to be defined) would be defined as a not-to-exceed maximum threshold. The test would include some features to support system-level design debug. Participants discussed some limitations of existing Rx CMNR tests and agreed that a novel approach has merit. Further definition of the proposal is anticipated and welcomed, as well as better differentiation of the approach as a valuable diagnostic vs. a normative/informative requirement for 40GBASE-T technology.

f) George Zimmerman provided information related to Luc Adriaenssens' contribution on 1000BASE-T receiver common-mode noise rejection. Participants were encouraged to review the document and consider implications for both 40GBASE-T and potentially 10GBASE-T maintenance actions.

g) Closing discussion – Action item review and future meetings

- The Task Force chair reminded participants of upcoming deadlines for task force contributions.

4) Meeting wrap-up - The next meeting was tentatively scheduled for October 29th, 2014 at 8:00 AM Pacific Daylight Time. Participants were also informed that, due to the close timing of this tentative meeting and the November Plenary, the October 29th meeting could be cancelled.
    - *Update: The October 29th meeting was cancelled and* ***the next meeting has been scheduled for November 19th, 2014 at 8:00AM Pacific Standard Time****.*

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

Meeting Attendance (From e-mail acknowledgements and on-line participant list)

Name	Employer	Affiliation (if different)
Dave Chalupsky	Intel	
Pete Cibula	Intel	
German Feyh	Broadcom	
Mike Good	Berk-Tek LLC	
Dave Jeskey	Sentinel Connector Systems	
Brett McClellan	Marvell	
Neven Pischl	Broadcom	
Tom Souvignier	Broadcom	
Paul Vanderlaan	Berk-Tek LLC	
Peter Wu	Marvell	
George Zimmerman	CME Consulting	Aquantia, Commscope