802.3BQ PHY BASELINE PROPOSAL AD HOC MINUTES (unapproved) -
23 June 2014

Participants are encouraged to review IEEE meeting guidelines available at the following URL -
https://development.standards.ieee.org/myproject/Public/mytools/mob/preparslides.pdf

The proposed agenda for the meeting follows.

9 AM Pacific Time meeting start (two hour meeting planned)

1. Roll call : Please send an email indicating your attendance, employer and affiliation to mailto:george@cmeconsulting.onmicrosoft.com?subject=802.3bq PHY ad hoc attendance 23June 2014

   Attendance:
   Hugh Barrass, Cisco
   Brian Buckmeier, Bel Stewart Connector
   David Chalupsky, Intel
   Peter Cibula, Intel
   Chris DiMinico, MC Communications / Panduit
   Dave Jeskey, Sentinel
   Wayne Larsen, Commscope
   William Lo, Marvell
   Brett McClellan, Marvell
   Rick Mellitz, Intel
   Victor Renteria, Bel Stewart Connector
   Martin Rossbach, Nexans
   Tom Souvignier, Broadcom
   Paul Vanderlaan, Berk Tek LLC
   Robert Wagner, Panduit
   Peter Wu, Marvell
   George Zimmerman, Chair, CME Consulting / Commscope & Aquantia

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

3. Housekeeping

Review & approve meeting agenda. : Approved by voice without opposition.

Approve minutes from 8 May 2014 PHY ad hoc meeting
http://www.ieee802.org/3/bq/public/phyproposal/minutes_3bq_phyadhoc_may-8-14.pdf
M: Dave Chalupsky
S: Wayne Larsen
Approved by voice without opposition

4. Old business from previous ad hoc meetings:
   None

5. New business at this meeting:

Name of presenter: George Zimmerman, CME Consulting
Title of presentation: Clause 98 PHY TBDs and some proposals
Brief description of topic: Review of draft highlighting the specifications that can be easily extended and those that require proposals

Discussion: There was some discussion regarding changing timing parameters. There was a desire to scale LPI refresh timing with the bit time to improve phase tracking – a contribution was requested with a proposal. There was also discussion of the benefits of trading EEE power savings with wake times, which was to be covered in the subsequent contribution. There was also a discussion of startup timing, and a call for contributions. Generally there was some opposition to scaling startup timing by BT, and rather keep timing similar to 10GBASE-T in milliseconds. Some participants offered that the constraints specifying startup timing might be tightened to improve interoperability. Contributions on startup were solicited sooner rather than later. The presenter also identified specifications in common mode noise rejection and alien crosstalk noise rejection that required some work and solicited contributions.

Name of presenter: Hugh Barrass, Cisco
Title of presentation: Energy Efficiency and 40GBASE-T
Brief description of topic: Review of options and possibilities for improving energy efficient Ethernet modes in 40GBASE-T, aimed at making 40GBASE-T competitive with QSFP on EEE modes. The contribution reviews the 100G broadened EEE from just LPI (in 10GBASE-T) to include EEE deep sleep, EEE fast wake. It also posed some questions of what transmitter options might be considered to enable fast wake (~250nsec).

Discussion: The contribution was focused on making 40GBASE-T at least competitive to QSFP on energy efficient Ethernet operation. It discussed the importance of waking quickly (e.g., 250nsec fast wake), but there was discussion of the interaction between voltage sag on regulator power rails vs. short wake times, and a request for some data. There was some discussion about what time scales analog power might be saved and what kinds of data pattern changes might allow that. There was further discussion about what changes could be made to allow power savings in the various cancellers. Contributions were solicited.

6. Next meeting time: 10 AM Pacific Time Monday July 7, 2014

There was discussion about contributions for the next meeting. Contributions were solicited on:

- Timing of refresh in LPI mode (Jim Graba)
- PBO thresholds (George Zimmerman & others)
- Startup timing considerations (George Zimmerman & others)
- EEE power savings opportunities in fast wake (general)

7. Adjournment: 10:55AM Paciifc Time