Minutes IEEE P802.3ch Multigig Automotive Ethernet PHY TF AdHoc meeting October 31, 2018

Prepared by George Zimmerman

Proposed Agenda:

1. Agenda/Admin: George Zimmerman, agenda_3chah_01_103118.pdf
2. TF Chair's comments: no presentation
3. Presentations:

OAM Extension Proposal	William Lo	Axonne
PHY Control	William Lo	Axonne
Interleaving Options	William Lo	Axonne
OAM Frame Proposal	Jim Graba Saied Benyamin	Broadcom Aquantia
EEE Baseline Proposal	Saied Benyamin Jim Graba	Aquantia Broadcom
Alert detect for 802.3ch	Saied Benyamin, Dragan Labalo	Aquantia
Frequency range limits for 2.5/5/10GBASE-T1	Gerrit den Besten	NXP
Link segment requirements for 2.5Gbps operation (Rev a)	Gerrit den Besten	NXP
Coupling & shielding attenuation	Gerrit den Besten	NXP

4. Discussion & Next steps – All

See adhoc webpage for agenda deck and presentations

Agenda/Admin: George Zimmerman as ad hoc chair:

Meeting began at 7:00 am PT.

Presented file: **agenda_3chah_01_103118.pdf**

1. Reviewed the Attendance information related to the ad hoc.
2. Displayed the Participation slide and reviewed it.
3. Displayed patent slide deck and reviewed it.
   Call for Patents was made at 7:08 am Pacific Time, none responded
4. Reminded participants to indicate full names and employer/affiliation for the meeting minutes.

Instructions for subscribing to the reflector may be found at http://www.ieee802.org/3/ch/reflector.html. If you cannot subscribe to the reflector for some reason, and need additional assistance please contact the Task Force chair.

Chair's/Chief Editor's Comments – Steve Carlson

Steve and Natalie reminded the group that the draft 0.6 finished the comment period and that comments would be posted shortly. Steve reminded the group to PLEASE get him presentations early, but certainly by Wednesday November 7, so that he can upload them before he leaves for Bangkok.

Additionally, Natalie reminded the group to please use the updated comment spreadsheet tool, and, if at all possible, avoid putting comments in email text to send to the editor – this takes time for the editor and can introduce errors into the process. The spreadsheet tool is fairly easy to use.

Presentations/Discussion:

Presentation: OAM Extension Proposal, William Lo, Axonne

The presenter discussed an updated version of his proposal from the prior ad hoc to provide multiple bytes of OAM information to provide 8 bytes of OAM messaging, protected by a 16-bit CRC error detection, in an extension of the format used in 1000BASE-T1. There was discussion and questions were asked and answered.

Presentation: PHY Control, William Lo, Axonne

The presenter discussed adding a "training idle" code to the 64/65b encoding to be used during PHY training so that data was not sent. Discussion suggested perhaps defining a new sequence ordered set to do this.

Presentation: Interleaving Options, William Lo, Axonne

The presenter discussed a proposal to exclude a number of the interleaving combinations to reduce conformance testing cases. The proposal was focused on balancing latency and error protection in an impulsive noise environment and would exclude low-latency options for 10G, high-latency options for 2.5G and take the middle-options for 5G. There was discussion including support and concern that the pruning of interleaver modes reduced the applicability of the PHY to differing interference and application environments.

Presentation: OAM Frame Proposal, Jim Graba, Broadcom, & Saied Benyamin, Aquantia (presenter)

The presenter discussed a consensus OAM Frame proposal between the two individuals, based on 6, 10-bit OAM words protected by an RS-FEC. There was discussion, and questions were asked and answered.

Presentation: EEE Baseline Proposal, Saied Benyamin, Aquantia & Jim Graba, Broadcom (presenter)

The presenter discussed a consensus proposal on EEE parameters between the two individuals, converging the main LPI parameters (sleep, quiet, refresh structure, OAM, alert and wake).

Presentation: Alert Detect for 802.3ch, Saied Benyamin, Aquantia (presenter) & Dragan Labalo, Aquantia

The presenter discussed simulation of the performance of the 10GBASE-T-style alert in an automotive environment showing high SNR from the correlator to answer previous questions. In discussion, there was a suggestion to consider using the same correlation sequence for PHY sync as for alert.

Presentation: Frequency range limits for 2.5/5/10GBASE-T1, Gerritt den Besten, NXP

The presenter discussed reducing the lower frequency limit to 1 MHz and scaling the upper frequency of the link segment specification limits based on PHY rate. There was active discussion of the impact on return loss and potential cabling complexity. There was also discussion of having too many cable specifications and fracturing the broad market potential of the cabling components, with the suggestion that 5 Gbps might be rolled into the 10Gbps cable spec.

Presentation: Link segment requirements for 2.5Gbps operation, Gerritt den Besten, NXP

The presenter presented an updated version (version "02a") of the slides posted to the reflector. The presenter discussed revising the link segment requirements for 2.5 Gbps at a 1 GHz top frequency, with reduced shielding requirements.

Presentation: Coupling & Shielding Attenuation, Gerritt den Besten, NXP

The presenter briefly discussed that coupling and shielding attenuation might be specified separately, and previewed a motion for consideration at the plenary in Bangkok.

Closing Business

Steve Carlson (TF Chair) reminded people to get their presentations in by Wednesday 7 November, so that he could have them before he left. He also asked for volunteers to be recording secretary and reminded people that this is a plenary (meaning that if you wanted attendance credit Monday or Thursday you needed to sign in during the 802.3 Working Group meeting), and there would be substantial overlap with 802.3cg and with other groups.

Meeting adjourned at 9:00 AM PT.

Attendees (from Webex + emails)

First	Last	Affiliation
James	Bauer	Marvell
Saied	Benyamin	Aquantia
Youssef	Bouri	Aptiv
Phillip	Brownlee	Self/TDK
Steven	Carlson	High Speed Design/Robert Bosch GmbH
Gerrit	denBesten	NXP
Eric	DiBiaso	TE
German	Feyh	Broadcom
Matthias	Fritrsche	Harting
Mike	Gardner	Molex
Jim	Graba	Broadcom

Marty	Gubow	Keysight Technologies
Craig	Gunther	Craig Gunther Consulting
Kevin	Holcomb	Cisco
Haysam	Kadry	Ford
Dongok	Kim	Hyundai
Taiji	Kondo	Megachips
David	Law	HPE
Bin	Lin	TE
William	Lo	Axonne
larry	Matola	Aptiv
Brett	McClellan	Marvell
Wes	Mir	Aptiv
Thomas	Müller	Rosenberger
Doug	Oliver	Ford
Sujan	Pandey	NXP
Harsh	Patel	Molex
Torsten	Reuschel	Robert Bosch GmbH
Tom	Souvignier	Broadcom
Yves	Stricot	Aptiv
Giuseppe	Tofanicchio	ST
Mike	Tu	Broadcom
Chao	Wang	Huawei
Natalie	Wienckowski	GM
Peter	Wu	Marvell
Allan	Zhu	Huawei
George	Zimmerman	CME Consulting/ADI, APL Group, Aquantia, BMW, Cisco, Commscope
TOTAL	**37**	**Attendees**