

Minutes IEEE P802.3ch Multigig Automotive Ethernet PHY TF AdHoc meeting October 17, 2018

Prepared by George Zimmerman

Proposed Agenda:

1. Agenda/Admin: George Zimmerman, [agenda_3chah_01a_101718.pdf](#)
2. TF Chair's comments: no presentation
3. Presentations:

802.3ch Link Partner Register Access Redux	Paul Langner/Saeid Benyamin George Zimmerman	Aquantia CME Consulting/Aquantia
Multi Gig Automotive EEE Proposal (updated from 10/3 – rev c)	Jim Graba, Tom Souvignier, Mike Tu	Broadcom
Interleaver Depth and Proposed Baseline for PHY Control function (also text is provided)	Mike Tu	Broadcom
Ultra Sleep Power Saving	Saeid Benyamin/ Paul Langner George Zimmerman	Aquantia CME Consulting/Aquantia
Clause 45 PHY Registers for 802.3ch (also text is provided)	George Zimmerman	CME Consulting/Aquantia
Yet another Oam Proposal	William Lo	Axonne
Editor's to do list from September Interim (updated)	Natalie Wienckowski, Chief Editor	General Motors

4. Discussion & Next steps – All

[See adhoc webpage for agenda deck and presentations](#)

Agenda/Admin George Zimmerman as ad hoc chair:

Meeting began at 7:05 am PT.

Introductions & Affiliations.

Presented file: [agenda_3chah_01_101718.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 7:11 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 reminded the group that the draft 0.6 is currently out for task force comments, and to get your comments to Natalie sooner rather than later for processing

Presentations/Discussion:

Presentation: 802.3ch Link Partner Register Access Redux, Paul Langner, Aquantia

The presenter reviewed an updated proposal for link partner register access, detailing that latching (and self clearing) bits for the 1000BASE-T1 PHY were relatively few and could be duplicated in a special register for remote reads. Additionally, he clarified that the 'interrupt bit' would be a self-clearing bit (clear on remote read) used to indicate changes in the special OAM or 'alarm' register under discussion. Questions of clarification were asked and answered, including discussion of designating a portion of the register space readable remotely (and the rest unreadable). More work was needed to define which portion

Presentation: Multi Gig Automotive EEE Proposal, Jim Graba, Broadcom

The presenter reviewed parameters for EEE, providing analysis of power on transients and frequency drift considerations and calculations referencing the methods used for 10GBASE-T in the initial 802.3az project by grimwood & powell to determine quiet and refresh times. The resulting duty cycles were more similar to 802.3bz (2.5G/5GBASE-T) than 802.3az (original 10GBASE-T). Other details include refresh frames with RS FEC frames containing OAM data, a 1000BASE-T1 style wake and non-interleaved frames in sleep. See presentation for detailed parameters. Questions on scaling the duty cycle with the timing were asked and answered.

Presentation: Interleaver Depth and Proposed Baseline for PHY Control Function, Mike Tu, Broadcom

The presenter described analysis for detail of PHY control and interleaver depths for 2.5G/5G/10GBASE-T1.

Presentation: Ultra Sleep Power Saving, Saeid Benyamin, Aquantia

The presenter described a mode where the slave transmitter could go quiet for extended periods of time to match the power consumption profile for highly asymmetric (essentially one-way) links. Discussion included naming the mode (not 'Zombie' mode), whether we should pursue an objective to provide an ultra low power state for highly asymmetric links, and how to keep knowledge that the link was intact at the side that was transmitting and not receiving.

Presentation: Clause 45 PHY Registers for 802.3ch, George Zimmerman, CME Consulting/Aquantia

The presenter presented text and a framework for the clause 45 register space associated with 802.3ch PHYs. The baseline was based on 1000BASE-T1 registers, but treating the 3 phys as a single ‘MultiGBASE-T1’ family. There were two choices for additions/augmentation discussed, and feedback was solicited. The first choice was whether to additionally provide SNR operating margin and received power measurements. General reception was positive, with some questions about the resolution and accuracy. The second point of discussion was about the fault reporting – whether to report transmit faults, or follow the 1000BASE-T1 model where the PMA receive fault is optional and an array of PCS error conditions are reported, along with a PCS fault, but no PMA transmit fault is provided. There was general consensus in discussion that the 1000BASE-T1 approach was the way to go, but some question as to whether the 1.1 and 3.1 register space needed to be supported in BASE-T1 PHYs – this requires follow up.

Presentation: Yet another OAM Proposal, William Lo, Axonne

The presenter discussed his views on pros and cons of the various oam proposals and presented an additional proposal to provide multiple bytes of OAM information to provide more bits. An informative annex for one message type was provided.

Presentation: 802.3ch ToDo list, Natalie Wienckowski, General Motors

Natalie shared the todo list. She asked people to volunteer for topics. Please see the list for those who have volunteered and when they plan to present on this topic. Additional volunteers are requested for areas that already have volunteers and those that don’t. You are urged to contact Natalie with any topics that may be missing from this list. We want to ensure we are ready to create D1p0 out of November. Additionally, George volunteered to email UNH-IOL for advice on testing the selectable precoder.

Closing Business

Everyone was urged to ‘keep up the good work’.

Meeting adjourned at 9:07 AM PT.

Attendees (from Webex + emails)

First	Last	Affiliation
James	Bauer	Marvell
Saied	Benyamin	Aquantia
Rich	Boyer	Aptiv
Phillip	Brownlee	Cable One/TDK Semiconductor
Steven	Carlson	High Speed Design/Robert Bosch
Clark	Carty	Cisco
Gerrit	den Besten	NXP
Eric	DiBiaso	TE
German	Feyh	Broadcom
Claude	Gauthier	NXP

Jim	Graba	broadcom
Marty	Gubow	Keysight Technologies
Craig	Gunther	Craig Gunther Consulting
Dongok	Kim	Hyundai
Taiji	Kondo	Megachips
Paul	Langner	Aquantia
David	Law	HPE
Bin	Lin	TE
William	Lo	Axonne
Larry	Matola	Aptiv
Brett	McClellan	marvell
Wes	Mir	Aptiv
Thomas	Müller	Rosenberger
Josef	Ohni	MD-Elektronik
Sujan	Pandey	NXP
Harsh	Patel	Molex
Tom	Souvignier	Broadcom
Mike	Tu	Broadcom
Natalie	Wienckowski	GM
John	Yurtin	Aptiv
George	Zimmerman	CME Consulting/Aquantia, APL Group, ADI, BMW, Cisco, Commscope
TOTAL	31	Attendees