Minutes IEEE P802.3ch Multigig Automotive Ethernet PHY TF AdHoc meeting June 26, 2019

Prepared by George Zimmerman

Proposed Agenda:

1.

Title	Presenters(s)	Affiliation(s)
Agenda (agenda_	George Zimmerman	CME Consulting/ADI, APL Group, Aquantia, BMW, Cisco, Commscope, SenTekse
Chief Editor's comments	Natalie Wienckowski, Chief Editor	GM NA
Power Supply Ripple and MDI Return Loss Modifications (Comments 266, 267, 268, & 269) (rev a, as presented)	Gitesh Bhagwat	Analog Devices
Proposed Comment on Master Jitter Spec for Initial Working Group Ballot (Comments 38, 39, 40, & 41)	Ramin Farjad	Aquantia
PHY Auto Precoder Selection (Comments 277, 278, 279, & 280)	Mike Tu Tom Souvignier	Broadcom
Fixing A Corner Case in the Link Monitor State Diagram (Comment 281)	Mike Tu, Steven Chen, Tom Souvignier	Broadcom
SNDR Target in Transmit Linearity Test (Comments 120 & 121)	Hossein Sedarat	Ethernovia
Missing Constants in RFER Monitor State Diagram(Comment 282)	Mike Tu	Broadcom
Closing	Natalie Wienckowski, Chief Editor	GM NA

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_062619.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 7:11am 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.

Chief Editor's Comments –Natalie Wienckowski (Steve Carlson, TF Chair was not present)

The Chief Editor, Ms. Wienckowski, advised the group that initial working group ballot had closed and to be on the lookout for emails from her regarding proposed responses. These are expected to be developed by July 10. She advised the group that she would have intermittent email contact over the next ~ 1.5 weeks due to personal travel.

Presentations/Discussion:

Presentation: Power Supply Ripple and MDI Return Loss Modifications (Gitesh Bhagwat, ADI)

The presenter discussed proposed changes to the power supply ripple specifications for type F PoDL, as well as MDI return loss specification changes. Participants suggested that the proposed specification changes were tied to assumptions about the PHY, rather than the power supply. Finding implementation-independent specifications for power which were consistent with PHY specifications, but not necessarily identical would be preferred. If previous specifications from could be reused, PoDL types might be more universal, facilitating adoption and implementation. Discussion to continue on the reflector and at the meeting.

Presentation: Proposed Comment on Master Jitter Spec for Initial Working Group Ballot (Author: Ramin Farjad, Aquantia; Presenter: George Zimmerman, CME Consulting/Aquantia)

The presenter reviewed proposed text changes to fix an issue resulting from the multiple jitter tests in draft 2.0. The proposal adds additional bits to select the test pattern used with test mode 2 for testing the jitter.

Presentation: PHY Auto Precoder Selection (Mike Tu, Broadcom)

The presenter reviewed a proposed changes allowing the PHY to set the precoder to be used automatically, rather than requiring them to be written by an external entity (e.g., user) into the MDIO register space. In discussion, a participant suggested that this was the way he had expected it to work, and that the only reason an external entity might overwrite the registers would be to test the precoder. To make this clear, it was suggested rather than having the user set a bit for "auto precoder selection", the bit might be for "precoder override" with the default setting being that the PHY sets the precoder bits and the user just reads them. (bits written to "precoder setting" could be ignored unless the override was set). Further discussion and consideration may be left for the reflector. Additionally, the presenter proposed that the infofield capability bits only be considered valid when the loc_rcvr_status bit is 1.

Presentation: Fixing A Corner Case in the Link Monitor State Diagram, Mike Tu, Broadcom

The presenter discussed changing the condition at which the Link Monitor state diagram sets "link_status = OK" from "pcs_status = OK" (in d2p0) to "pcs_data_mode = true" – indicating simply that the PHY control had entered the pcs data mode state. The stated purpose of this was that if the pcs_status went to NOT_OK during the first minwait_timer period (1ms) in data mode, the existing model would not go to link_status = OK, and auto-negotiation would wait for the link_fail_inhibit_timer to time out before restarting training. With the proposed change text, link_status would go to OK would happen even if the pcs_status transitioned to NOT_OK, allowing auto-negotiation to think it was complete, but link_status would immediately transition back to FAIL, starting the break_link_timer in autoneg rather than waiting for link_fail_inhibit to time out. A possible alternative to this by allowing a retrain path in PHY control was mentioned by a participant. Further discussion is expected.

Presentation: SNDR Target in Transmit Linearity Test, Hossein Sedarat, Ethernovia

The presenter discussed considerations and concerns with the transmit linearity test in draft 2.0. Among these there was general agreement that the metric derived did not include the factor of 2.6 dB for the difference between peak pulse energy and average received energy on PAM4 signals. There were several questions from participants regarding the SNDR levels proposed. Questions of clarification on the assumptions for the impact of the proposed SNDR metric were discussed, with the presenter suggesting a modified presentation with the assumptions listed would be presented in July.

Presentation: Missing Constants in RFER Monitor State Diagram, Mike Tu, Broadcom

The presenter discussed proposals to fill in the RFER_CNT_LIMIT at 16, and the RFRX_CNT_LIMIT at 88, since these constants are used in the RFER monitor state diagram, but are not defined. There was general agreement that the RFER_CNT_LIMIT was correct and consistent with the hi_rfer definition, but that RFRX_CNT_LIMIT was subject to a wider problem, because in other places hi_rfer was defined as being counted over a 312 500 bit time interval (which is not an integer number of RFER frames) whereas in the RFER monitor state diagram counts over RFRX_CNT_LIMIT. Further discussion is needed to understand the correct text alignments, which appear to be more than just defining the constant.

Closing Discussion: Natalie Wienckowski

Natalie reminded the group that the proposed responses were in preparation and to watch for emails regarding questions.

Meeting adjourned at 8:56 AM PT.

Attendees (from Webex + emails)

First	Last	Affiliation
Sina	Barkeshli	Aquantia
Gitesh	Bhagwat	Analog Devices
rich	boyer	Aptiv
Phil	Brownlee	Independent/TDK
Clark	Carty	Cisco Systems
Gerrit	den Besten	NXP
Eric	DiBiaso	TE
German	Feyh	Broadcom
Andrew	Gardner	Analog Devices
Jim	Graba	Broadcom
Marty	Gubow	Keysight Technologies
Frank	McCarthy	Aquantia
Wes	Mir	Aptiv
Thomas	Mueller	Rosenberger
Jim	Nadolny	Samtec
Josef	Ohni	MD-Elecktronik
Douglas	Oliver	Ford
Alireza	Razavi	Aquantia
Hossein	Sedarat	Ethernovia
Steve	Sedio	TDK
Tom	Souvignier	Broadcom
Mike	Tu	Broadcom
Kambiz	Vakilian	Broadcom
Dong	Wei	Futurewei
Natalie	Wienckowski	GM
George	Zimmerman	CME Consulting/ADI, Aquantia, APL Group, BMW, Cisco, Commscope, SenTekSe
TOTAL	**26**	**Attendees**