

Unconfirmed Meeting Minutes: IEEE P802.3ch Multi-Gigabit Automotive Ethernet PHY
Task Force

March 12-14, 2019
Vancouver, BC Canada

Prepared by Jon Lewis and Phil Brownlee

IEEE P802.3ch Multi-Gigabit Automotive Ethernet PHY Task Force meeting convened at 1:03 PM, Tuesday, March 12, 2019 by Steve Carlson, Task Force Chair.

Attendance is listed in Appendix A

Administrative Matters

Mr. Carlson reviewed the agenda in [agenda 3ch 01 0319.pdf](#).

Motion #1: Move to approve the agenda as shown in [agenda 3ch 01 0319.pdf](#)

M: Phil Brownlee S: Brett McClellan

Approved by voice without opposition (Procedural > 50%)

Motion Passes

Motion #2: Move to approve the minutes of the January 2019 IEEE P802.3ch Multi-Gigabit Automotive Ethernet PHY Task Force Meeting.

M: Chris Mash S: Natalie Wienckowski

Approved by voice without opposition (Procedural > 50%)

Motion Passes

Mr. Carlson noted that there should be no recording or photography.

At 1:10 PM, Mr. Carlson asked if anyone was attending from the press including those who would run a public blog on this meeting. None responded.

The Task Force Chair reviewed the goals for the meeting, big ticket items, access to the reflector and website, and ground rules for the meeting.

Attendance, Mr. Carlson advised the group of the IEEE meeting attendance tool and procedures, including both the attendance book and the web attendance tracking tool. Mr. Carlson pointed out that the new attendance book contains GDPR notice.

The TF Chair reviewed the IEEE structure for standards development and the bylaws by which the Task Force is governed.

IEEE Patent Policy, at **1:23 PM**, Mr. Carlson showed the patent slides and proceeded to read aloud slides 1 and 2. Mr. Carlson made the call for potentially essential patents at **1:25 PM**, and none responded. Mr. Carlson then read aloud slides 3 and 4.

Mr. Carlson showed slide 16 entitled "Participation in IEEE 802 Meetings" and proceeded to read the slide aloud. Mr. Carlson asked if there was any discussion on the slide, none responded.

The Chair reviewed the IEEE 802.3 Standards process and where the Task Force was in the process and the process by which we will develop the standard.

The Chair then showed the locations of the approved project documents for the Task Force and reviewed the objectives for the Task Force.

Liaisons:

[MIPI Alliance Automotive Interface Standards Development Update](#)

The Task Force took a short break to change rooms at 1:50 PM.

The Task Force resumed at 2:10 PM.

The Chair then called for the participants to introduce themselves.

PRESENTATIONS:

Mr. Carlson then moved to the presentations for the meeting.

Title: Ad-Hoc Report ([zimmerman 3ch 01 0319.pdf](#))

Presenter: George Zimmerman, Commscope, Aquantia, CME Consulting, Cisco, ADI, BMW, APL Group, SensTek

Motion #3: Move to confirm minutes for ad hocs on 1/30 and 2/27/19 as posted

M: G. Zimmerman S: N. Wienckowski

Approved by voice without opposition (Procedural > 50%)

Motion Passes

Wednesday, 7-9AM Pacific Time every 2 weeks.

Next scheduled ad hoc is 3/19/19. The meeting notice will be available in the private area.

Title: Opening Editor's Report – P802.3ch Draft 1.1

([wienckowski 3ch 01c 0319.pdf](#))

Presenter: Natalie Wienckowski, General Motors

COMMENT RESOLUTION

Decisions during comment resolution were made by consensus, except where noted that motions were taken. For details on comment resolution see the posted comment database.

Presentations related to comment resolution are listed as they were presented. Details on the outcome of these presentations are contained in the comment database.

Motion #4: Move to include 1 comment (#309) submitted after P802.3ch draft 1.1 declared comment deadline of February 23, 2019 AOE, included with Editor's proposed responses.

M: Natalie Wienckowski **S:** George Zimmerman
(Technical $\geq 75\%$)

Approved by voice without opposition

Motion Passes

Motion #5: Move to include 2 comments (#290 & #292) submitted prior to the deadline; however, presentation of suggested solution was not submitted prior to the deadline.

M: Natalie Wienckowski **S:** George Zimmerman
(Technical $\geq 75\%$)

Approved by voice without opposition

Motion Passes

Motion #6: Move to accept all proposed "EZ bucket" resolutions sorted by clause/subclause, excluding Comment #124.

M: Natalie Wienckowski **S:** George Zimmerman
(Technical $\geq 75\%$)

Y: 64 **N:** 0 **A:** 1

Motion Passes

Motion #7: Move to accept all proposed "Editorial bucket" resolutions sorted by clause/subclause excluding none.

M: Natalie Wienckowski **S:** George Zimmerman
(Technical $\geq 75\%$)

Y: 64 **N:** 0 **A:** 1

Motion Passes

The meeting broke for short break at 3:00 PM.

The meeting resumed at 3:23 PM.

The Chair brought the meeting back to order and Comment Resolution continued.

Title: 802.3ch link segment alien crosstalk ([mueller 3ch 03 0319.pdf](#))

Presenter: Thomas Müller, Rosenberger

Title: Draft 1.1 Proposed Comment Details ([Lo 3ch 01 0319.pdf](#))

Presenter: William Lo, Axionne

Title: RS-FEC Frame Error Rate ([DenBesten 3ch 01 0319.pdf](#))

Presenter: Gerrit den Besten, NXP Semiconductors

The Task Force recessed for the day at 6:06.

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Prepared by Phil Brownlee (Edited by Jon Lewis for consistency)

The Task Force reconvened Wednesday March 13, 2019 at 8:05 AM.

- Steve Carlson advised the group of the IEEE meeting attendance tool, including both the attendance book and the web attendance tracking tool (IMAT)

Comment resolution continued.

- Comment resolution with about 100 comments left to resolve with about six minutes per comment allowed in general
- Decisions during comment resolution were made by consensus, except where noted that motions were taken. For details on comment resolution see the posted comment database
- Presentations related to comment resolution are listed as they were presented. Details on the outcome of these presentations are contained in the comment database.

Title: Alien Cross Talk Rejection ([mueller 3ch 02a 0319.pdf](#))

Presenter: Thomas Muller/Rosenberger

Straw poll:

- Vote: 8 people wanted 2×10^{-10}
 - Vote: 4 people wanted 1×10^{-10}
- Note: Most task force attendees had no input

The Chief Editor informed the group that 65 comments are left. The Task force had completed 35 comments in <2 hours.

Title: Transmitter timing Jitter Proposal, ([souvignier_3ch_01a_0319.pdf](#))

Presenter: Tom Souvignier/Broadcom

The meeting broke for a short recess at 10:08 AM.

The meeting resumed at 10:30 AM.

Comment resolution continued.

Title: A Proposed Specification for Transmit Jitter in 802.3ch, ([farjarad_3ch_01a_0319.pdf](#))

Presenter: Ramin Farjadrad/Aquantia

- “Potential” straw poll or motion on Aquantia’s presentation on Thursday; suggested by Natalie Wienckowski

Clause 149.4.2.2.10 (startup sequence) discussion directed by George Zimmerman

Title: Use of the term “shield”, ([DenBesten_3ch_03_0319.pdf](#))

Presenter: Gerrit den Besten/NXP

The Task Force recesses for lunch at 12:05 PM.

The Task Force resumed at 1:15 PM.

Comment resolution continued.

Title: Issues in D1.1 State Diagrams, ([tu_3ch_01a_0319.pdf](#))

Presenter: Mike Tu/Broadcom

Straw Poll—Chicago Rules

Change the appropriate bits to RO and add the specific definitions in Clause 45: **Count: (1)**

Keep the bits R/W and move the content to 149.3.8.2.11 into an informative annex with appropriate linking language: **Count: (13)**

Add a note in 45.2.3.3.7.6 that these bits can be set by the phy. If this is the case, the bits that are set by the phy should not be written to. **Count: (2)**

Title: “Transmit PSD mask” (Comment # 290), ([DenBesten_3ch_02a_0319.pdf](#))

Presenter: Gerrit den Besten/NXP

Comment resolution concluded.

Title: Transmitter Droop Limit Proposal ([souvignier_3ch_02_0319.pdf](#))

Presenter: Tom Souvignier/Broadcom

Title: Transmitter Distortion Proposal ([Donahue_3ch_01_0319.pdf](#))

Presenter: Curtis Donahue/UNH-IOL

Mr. Carlson provided details for future meetings, Salt Lake City Utah (May 2019) and Vienna Austria (July 2019)

Straw Poll for expected attendance at the May and July meetings:

- May: Y: 26 N:7 M:10
- July: Y: 23. N:2 M:15

Mr. Carlson noted that the start time for Thursday would be 9:00 AM.

Meeting recessed for the day at 6:00 PM.

The Task Force reconvened Thursday at 9:00 AM.

Mr. Carlson advised the group of the IEEE meeting attendance tool, including both the attendance book and the web attendance tracking tool (IMAT)during closing plenary

Comment resolution for Comment 44 update (Natalie)

Motion #8:

- **Move that P802.3ch hold an OOC interim April 16-17 in Warren, MI, hosted by GM, in order to advance the draft to Working Group ballot.**
- **M: Natalie Wienckowski**
- **S: Bob Grow**
Procedural (>50%)
- **Approved by voice without opposition**
- **Motion Passes**

Motion #9:

- **Move to adopt the droop test (test mode 6) as shown on page 6 of [souvignier 3ch 02 0319.pdf](#).**
- **M: Tom Souvignier**
- **S: Mike Tu**
- **Y: 30 N: 0 A: 15**
- **(Technical >= 75%)**
- **Motion Passes**

Motion #10:

- **Move to add test mode 4: Transmit the sequence specified in 94.3.12.5.1 with a link partner.**

- When in test mode 4, the transmitter shall meet the SNDR distortion as specified in 94.3.12.7.
- With editorial license to conform to style
- M: George Zimmerman
- S: Saied Benyamin
- (Technical $\geq 75\%$)
- Y: 32 N: 0 A: 12
- Motion Passes

Motion #11:

- Replace subclause 149.7.1.5 Shielding attenuation with subclause 149.7.1.5 Screening attenuation, title and content, as shown on page 1 of mueller_3ch_04_0319.pdf and grant editorial license to implement the proposal.
- M: Thomas Mueller
- S: Gerrit den Besten
- (Technical $\geq 75\%$)
- Y: 31 N: 0 A: 12
- Motion Passes

Motion #12:

- Replace Annex 149 A in D1.1 with Annex 149 A subclause as shown on pages 2-4 of mueller_3ch_04_0319.pdf and grant editorial license to implement the proposal.
- M: Thomas Mueller
- S: Gerrit den Besten
- (Technical $\geq 75\%$)
- Y: 33 N: 0 A: 10
- Motion Passes

Task force recessed for a morning break at 9:58 AM.

Task force reconvened at 10:20 AM.

Title: Low data rate EEE mode ([Lo_3ch_03a_0319.pdf](#))

Presenter: William Lo/Axonne

Title: Low Power Data ([sedarat_3ch_01a_0319.pdf](#))

Presenter: Hossein Sedarat/ Ethernovia

The Chair reminded the Task Force that changes to the PAR could delay the draft by 6-9 months.

Title: Editor's closing report

Presenter: Natalie Wienckowski, GM

Motion #13:

- **Move to instruct the Chief Editor to create D1.2 from D1.1, closed comments received on D1.1, and adopted baselines from passed motions.**
- **M: Natalie Wienckowski**
- **S: Olaf Grau**
- **(Technical $\geq 75\%$)**
- **Y: 49 N: 0 A: 1**
- **Motion Passes**

Motion #14:

- **Move to adjourn.**
- **M: Brett McClellan**
- **S: Peter Wu**
- **Approved by voice without opposition (Procedural $> 50\%$)**

The Task Force meeting was adjourned at 11:39 AM.

Appendix A: Attendees at the IEEE P802.3ch Multi-Gigabit Automotive Ethernet PHY Task Force Meeting, March 12-14, 2019.

IEEE 802.3 P802.3ch Multi-Gig Automotive Ethernet PHY Task Force IEEE 802.3 March 2019				Day 1 12 March	Day 2 13 March	Day 3 14 March
By choosing to attend and sign in to this meeting, you acknowledge and agree that your personal data will be documented for IEEE standards development purposes to comply with policies and procedures, legal and accreditation requirements, and evaluation of patent claims by patent offices. See Front Page for additional information.						
Last Name	First Name	Employer	Other Affiliations	Tues	Wed	Thur
Andrac	Stefan	SEI Antech-Europe GmbH	SEI Antech-Europe GmbH	X	X	X
Aono	Michikazu	Yazaki	Yazaki	X	X	X
Araki	Nobuyasu	Yazaki	Yazaki	X	X	X
Bains	Amrik	Cisco	Cisco	X		
Beaudoin	Denis	TI	TI	X	X	X
Benyamin	Saied	Aquantia	Aquantia	X		X
Bhagwat	Gitesh	Analog Devices	Analog Devices	X	X	
Boyer	Rich	Aptiv	Aptiv	X	X	X
Brownlee	Phillip	Independent	TDK	X	X	X
Carlson	Steve	High Speed Design	Robert Bosch	X	X	X
Carty	Clark	Cisco	Cisco	X	X	X
Chabot	Craig	UNH-IOL	UNH-IOL		X	
Chalupsky	David	Intel	Intel			X
Dawson	Fred	Chemours	Chemours	X	X	X
Den Besten	Gerrit	NXP Semiconductors	NXP Semiconductors	X	X	X

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Last Name	First Name	Employer	Other Affiliations	Tues	Wed	Thur
Diminico	Chris	PHY-SI	Panduit	X		
Donahue	Curtis	UNH-IOL	UNH-IOL	X		
Dube	Kathryn	UNH-IOL	UNH-IOL	X	X	
Dupuis	Marcel	Web Industries	Web Industries		X	
Eyal	Massad	Valens Semi	Valens Semi	X	X	X
Farjadrad	Ramin	Aquantia	Aquantia	X	X	
Fazlolahi	Amir	Futurewei Technologies	Futurewei Technologies	X	X	X
Fritsche	Matthias	Harting	Harting	X	X	X
Gardner	Mike	Molex, LLC	Molex, LLC	X	X	X
Gauthier	Claude	NXP Semiconductors	NXP Semiconductors	X	X	
Gilb	James	GA-ASI, USD	GA-ASI, USD	X		
Grau	Olaf	Robert Bosch	Robert Bosch	X	X	X
Grow	Robert	RMG Consulting	RMG Consulting	X	X	X
Gubow	Martin	Keysight Technologies	Keysight Technologies	X	X	
Gupta	Sanjay	Futurewei Technologies	Futurewei Technologies		X	
He	Xiang	Huawei	Huawei	X		

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Last Name	First Name	Employer	Other Affiliations	Tues	Wed	Thur
Hopkinson	Wayne	Commscope	Commscope	X	X	X
Hu	Wei	Mediatek	Mediatek			X
Hyakutake	Yasuhiro	Adamant Namiki Precision Jewel	Adamant Namiki Precision Jewel	X	X	X
Ito	Hiroaki	Yazaki	Yazaki	X	X	X
Kadry	Haysam	Ford Motor Company	Ford Motor Company		X	X
Kappermler	Daniel	MD Elektronik GmbH	MD Elektronik GmbH	X	X	X
Kim	Yong	NIO	NIO	X		
Kondo	Taiji	Megachips	Megachips	X	X	X
Kountz	Dennis	Chemours	Chemours	X	X	X
Lackner	Hans	QoSCom GmbH	QoSCom GmbH	X	X	
Law	David	Hewlett Packard Enterprise	Hewlett Packard Enterprise	X		X
Lewis	Jon	Dell EMC	Dell EMC	X		
Liang	Haixiang	Futurewei Technologies	Futurewei Technologies	X		
Lin	Alex	Mediatek	Mediatek	X	X	X

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Last Name	First Name	Employer	Other Affiliations	Tues	Wed	Thur
Lo	William	Axonne Inc	Axonne Inc	X	X	X
Maguire	Valerie	Siemon	Siemon	X	X	X
Mash	Chris	Marvell	Marvell	X		
McClellan	Brett	Marvell	Marvell	X	X	X
McIntesh	James	Microchip	Microchip	X	X	X
Miller	Martin	Microchip	Microchip	X	X	
Mootazau	Sanaz	Volkswagon AG	Volkswagon AG		X	
Mueller	Thomas	Rosenberger	Rosenberger	X	X	X
Neveux	Paul	Superior Essex	Superior Essex	X	X	X
Ohni	Josef	MD Elektronik	MD Elektronik	X	X	X
Parthasarathy	Raju	Tektronix	Tektronix	X	X	
Patel	Harsh	Molex, LLC	Molex, LLC	X	X	X
Pohl	Christopher	Beckhoff	Beckhoff		X	
Ramirez	Perla	Leoni Cable Inc.	Leon Cable Inc.	X	X	X
Rashidi	Habib	Pulse Electronics	Pulse Electronics	X	X	X
Renteria	Victor	Bel Fuse Inc	Bel Fuse Inc	X	X	X

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Last Name	First Name	Employer	Other Affiliations	Tues	Wed	Thur
Rettig	Thomas	Beckhoff Automation	Beckhoff Automation		X	
Salehi	Hamid Reza	Marvell	Marvell	X		
Savi	Olindo	Hubbell	Hubbell		X	X
Sederat	Hosseini	Ethernovia	Ethernovia	X	X	X
Sedio	Steve	TDK	TDK	X	X	
Shiino	Masato	Furukawa Electric	Furukawa Electric	X	X	
Shirani	Ramin	Ethernovia	Ethernovia	X	X	X
Souvignier	Tom	Broadcom Ltd.	Broadcom Ltd.	X	X	X
Sparrowhawk	Bryan	Leviton	Leviton	X	X	X
Stewart	Heath	Analog Devices	Analog Devices		X	X
Takahashi	Satoshi	POF Promotion	POF Promotion	X	X	
Takahashi	Tadashi	Nitto Denko Corporation	Nitto Denko Corporation	X	X	
Takashi	Fukuoka	Auto Networks Tech	Auto Networks Tech	X	X	
Takata	Kensaku	Auto Networks Tech	Auto Networks Tech	X	X	
Takayama	Kazuya	Nitto Denko Corporation	Nitto Denko Corporation	X	X	X
Tseng	Tachin	Realtek	Realtek	X	X	X

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Last Name	First Name	Employer	Other Affiliations	Tues	Wed	Thur
Tu	Mike	Broadcom Ltd.	Broadcom Ltd.	X	X	X
Tzahi	Madgar	Valens Semi	Valens Semi	X	X	X
Vernickel	Ricky	Leoni	Leoni	X	X	X
Wechsler	Christoph	Audi	Audi	X	X	X
Wei	Dong	Futurewei Technologies	Futurewei Technologies	X	X	X
Wienckowski	Natalie	GM	GM	X	X	X
Withey	James	Fluke	Fluke	X	X	X
Wu	Peter	Marvell	Marvell	X	X	X
Wu	Dance	Marvell	Marvell	X	X	X
Zhu	Chunhui	Huawei	Huawei	X	X	X
Zimmerman	George	CME Consulting	Commscope, Aquantia, CME Consulting, Cisco, ADI, BMW, APL Group, SensTek	X	X	X