

Unconfirmed Meeting Minutes: Meeting of the IEEE P802.3cg 10 Mbps Single Twisted Pair Ethernet Task Force

July 10-11, 2017
Berlin, Germany

Prepared by Jon Lewis

The meeting of the IEEE P802.3cg 10 Mbps Single Twisted Pair Ethernet Task Force convened at 1:04PM, Monday, July 10, 2017 by George Zimmerman, P802.3cg Task Force chair.

Attendance for the meeting is listed in Appendix A

All presentations referenced in these minutes are located on the [July 2017 802.3cg public website](#).

Administrative Matters

Mr. Zimmerman appointed Jon Lewis as recording secretary for this session.

The Task Force Chair called for introductions and affiliations.

George Zimmerman displayed the agenda in agenda_3cg_01b_0717.pdf.

Motion #1: Move to approve the agenda as shown in agenda_3cg_01b_0717.pdf changing the approval of the minutes to May instead of March.

**M: Alan Flatman S: Ron Nordin
Approved by voice without opposition (Procedural > 50%)**

George Zimmerman reviewed the agenda in agenda_3cg_01b_0717.pdf.

Motion #2: Move to approve minutes of IEEE P802.3cg 10 Mbps Single Twisted Pair Ethernet Task Force from March 2017 as posted.

**M: C. Diminico S: P. Vanderlaan
Approved by voice without opposition (Procedural > 50%)**

- Mr. Zimmerman noted that there should be no recording or photography without permission.

- Mr. Zimmerman asked if anyone was attending from the press including those who would run a public blog on this meeting. Peter Jones informed the Task Force that he occasionally uses publically available information.

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

Attendance, Mr. Zimmerman advised the group of the IEEE meeting attendance tool and procedures, including both the attendance log and the web attendance tracking tool (IMAT).

Mr. Zimmerman reviewed the slide entitled “Participation in IEEE 802 Meetings” and asked if there was any discussion necessary, none responded.

IEEE Patent Policy, at **1:24 PM**, Mr. Zimmerman showed slides 0 through 4 patent policy from agenda_3cg_01a_0317.pdf. Mr. Zimmerman showed slide 0 and read aloud slides 1 through 4. Mr. Zimmerman made the call for potentially essential patents at **1:27 PM**, and none responded. Mr. Zimmerman then completed the reading of slide #4.

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.

Mr. Zimmerman reviewed the presentations for this week.

LIAISONS

TIA TR-42: TR-42 liaison to IEEE 802.3 regarding single-pair cabling standards

ISO/IEC JTC1 SC25: Alan Flatman gave an update on ongoing work related to P802.3cg. It was noted that the next meeting of the ISO/IEC JTC2 SC25 coincides with the IEEE 802.3 meetings in September.

ODVA: David Brandt gave a short update.

Title: Ad Hoc Report (jones_10spe_01_0717.pdf)

Presenter: George Zimmerman, Commscope, Aquantia, LTC, CME Consulting, Cisco, ADI, BMW, APL Group for Peter Jones, Cisco

The Chair asked if there was any objection to approving the ad hoc meeting minutes, none responded.

PRESENTATIONS

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

Title: ISO/IEC JTC1 SC25 WG3, Single-pair channels specifications, investigation (hess_10SPE_01a_0717.pdf)

Presenter: Dave Hess, Cord Data

Title: IEEE 802.3cg LC Copper Connector Interface for enterprise networking applications (keith_shariff_3cg_01_0717-rev2.pdf)

Presenter: Masood Shariff, Commscope; Scott Keith, Commscope

The meeting recessed for a short break at 3:17 PM.

The meeting resumed at 3:44 PM.

Title: Analysis of connector S-parameters for 10SPE (DiBiaso_Bergner_01a_0717.pdf)

Presenter: Bert Bergner, TE Connectivity

Title: “Engineered” power delivery 1000 m Link Segment (diminico_3cg_01a_0717.pdf)

Presenter: Chris Diminico, MC Communications, PHY-SI, Cu-Test, Panduit

Title: Editor’s Report: P802.3cg Draft D0.1 (maguire_3cg_01_0717.pdf)

Presenter: Valerie Maguire, Siemon; P802.3cg chief editor

- The chief editor pointed to: 802.3 Draft Development Process (maguire_3cg_02_0717.pdf)

Title: Update on non-industrial use cases (Lewis_3cg_01_0717.pdf)

Presenter: Jon Lewis, Dell EMC

The meeting recessed for the day at 5:30 PM.

The Task Force meeting resumed at 8:04 AM.

The Task Force Chair called for introductions and affiliations.

George Zimmerman reviewed the agenda in agenda_3cg_01b_0717.pdf.

- Mr. Zimmerman noted that there should be no recording or photography without permission.
- Mr. Zimmerman asked if anyone was attending from the press including those who would run a public blog on this meeting. None responded.

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

Attendance, Mr. Zimmerman advised the group of the IEEE meeting attendance tool and procedures, including both the attendance log and the web attendance tracking tool (IMAT).

Mr. Zimmerman reviewed the slide entitled "Participation in IEEE 802 Meetings" and asked if there was any discussion necessary, none responded.

IEEE Patent Policy, at **8:15 AM**, Mr. Zimmerman showed slides 0 through 4 patent policy from agenda_3cg_01b_0717.pdf. Mr. Zimmerman showed slide 0 and asked if anyone has not seen slides 1 through 4. None responded. Mr. Zimmerman then made the call for potentially essential patents at **8:17 AM**, and none responded. Mr. Zimmerman then showed slide #4.

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 asked the group if there was any objection to hearing two late presentations from David Brandt. None responded.

Title: Clause 98 for 10SPE@15m (matheus_zimmerman_3cg_01b_0717.pdf)
Presenter: Kirsten Matheus, BMW

Title: Short/Mid-Reach 10SPE PHY with Multipoint (gauthier_3cg_01b_0717.pdf)
Presenter: Claude Gauthier, OmniPHY

Title: Discussion of Multidrop Access Methods (brandt_cg_01a_0717.pdf)
Presenter: David Brandt, Rockwell Automation

The meeting recessed for a short break at 10:30 AM.

The meeting resumed at 10:53 AM.

Title: Multidrop PHY Simulation (brandt_cg_03_0717.pdf)
Presenter: David Brandt, Rockwell Automation

Straw Poll #1: Should the group adopt a multi-drop objective, I would support development effort on:

- **CSMA/CD: 39**
- **FDMA: 3**
- **TDMA (explicitly at physical layer): 23**

- I have voted on one of the above but am equally happy with no multi-drop: 23
- Abstain: 9+8 = 17

Straw Poll #2: I support adopting one of the multi-drop schemes mentioned in Straw Poll #1:

- Yes, I support a specified multi-drop scheme: 32
- No, I prefer the group to focus on full-duplex, point-to-point efforts only: 22
- Abstain: 17

Straw Poll #3: I would support an optional multi-drop capability in addition to point to point for up to at least 15m reach and 5 nodes in a linear topology

Y: 35

N: 15

Abstain: 22

Straw Poll #4: I would support an optional multi-drop capability in addition to point to point in all use cases of 10SPE

Y: 9

N: 45

Abstain: 17

Straw Poll #5: I would support an optional multi-drop capability in addition to point to point for:

Y: 15m: 34

Y: 1000m: 4

No: 21

Abstain: 15

During straw poll discussion on 1000 m link segment Cornelia Eitel, Hirschmann Automation and Control, informed the group that her employer had IP related to the discussion, and stated that if the group should go in that direction, a letter of assurance would be provided.

**Title: Proposed Link Segment for short –reach objective
(Lewis_3cg_02a_0717.pdf)**

Presenter: Jon Lewis, Dell EMC

The meeting recessed for lunch at 12:00 PM.

The meeting resumed at 1:03 PM.

The Chair called the meeting to order, reminded people to sign in the attendance sheet and proceeded with afternoon presentations.

Title: PCS Layer Ideas (Graber_3cg_12_0717.pdf)

Presenter: Steffen Graber, Pepperl+Fuchs

Title: Coupling Network and MDI Return Loss (Graber_3cg_11_0717.pdf)

Presenter: Steffen Graber, Pepperl+Fuchs

**Title: Addendum to “Primary Drive Noise Measurements”
(brandt_cg_02c_0717.pdf)**

Presenter: David Brandt, Rockwell Automation

Valerie Maguire, P802.3cg chief editor, has produced a D0.1 draft that will be posted to private area.

The Chair then reviewed the draft liaison letters for ISO/IEC and TIA TR42:

[Proposed draft liaison to ISO/IEC SC25 WG3](#)

[Proposed draft liaison to TIA TR42](#)

Straw Poll #6: Based on current information, to address the multidrop use case, I would support further development effort on (pick one):

- **CSMA/CD: 29**
- **TDMA (explicitly at physical layer): 11**
- **Abstain: 16**

Straw Poll #7: To support a 15m, 5 node multidrop use case, what information do you require? (pick one):

A: Nothing: 7

B: I need to understand the use case and its impact on system costs: 11

C: I need to see detailed proposals on how multidrop will work: 25

Abstain: 10

Future Meeting Straw Polls:

- **I am likely to attend 802.3cg at:**
- **September Interim (Charlotte, NC USA)**
 - **Y: 21 N: 28 M: 12**
- **November plenary (Orlando, FL USA):**
 - **Y: 32 N: 7 M: 16**

The meeting recessed for a short break and the NEA ad hoc at 3:00 PM.

The meeting resumed at 4:44 PM.

Straw Poll #8: I would support 802.3cg adding the intra-system use case within our project, provided it does not increase the number of PHYs in the project.

Y: 30 N: 0 A: 16

Straw Poll #9: Following the provision of further use case and system cost information and detailed implementation proposals, I am likely to support a specified multidrop proposal for up to at least 15m with up to 5 nodes:

Y: 26 N: 6 A: 12

Straw Poll #10: Should the Task Force Chair report to the 802.3 closing plenary that there is ongoing work to address the multi-drop use case (including the results of Straw Poll #9).

By voice without objection

Motion #3: Move to approve draft liaisons to TIA TR42 and ISO/IEC JTC1 SC25 WG3 as posted

M: Valerie Maguire S: Masood Shariff

Approved by voice without opposition (Procedural > 50%)

After completing the meeting agenda the Chair asked if there was further business for the Task Force, none responded. The Chair the adjourned the meeting at 5:11 PM.

Appendix A: Attendees at the IEEE P802.3cg 10 Mb/s Single Twisted Pair Ethernet Task Force Meeting, July 10-11, 2017.

IEEE P802.3cg Task Force July'17				7/10/17	7/11/17
Last Name	First Name	Employer	Affiliation	Monday	Tuesday
Agnes	Andrea	ST Microelectronics	ST Microelectronics	X	X
Akasaki	Shogo	DENSO	DENSO	X	X
Angha	Ali	Spirent Communications	Spirent Communications	X	X
Asedy	Yossuf	Pulse Electronics	Pulse Electronics		X
Bains	Amrik	Cisco	Cisco	X	X
Bergnu	Bert	TE Connectivity	TE Connectivity	X	
Beruto	Piergiorgio	Canova Tech SRL	Canova Tech SRL	X	X
Brandt	David	Rockwell Automation	Rockwell Automation	X	X
Brillhart	Theo	Fluke Electronics	Fluke Electronics	X	X
Brunner	Stefan	Continental	Continental	X	X
Buntz	Stefan	Daimler AG - Mercedes-Benz Cars	Daimler AG - Mercedes-Benz Cars	X	X
Carlson	Steve	High Speed Design	Robert Bosch	X	X
Chabot	Craig	UNH-IOL	UNH-IOL	X	X
Chadha	Mandeep	Microsemi	Microsemi	X	X
Dachin	Tseng	Realtek	Realtek	X	X
Dai	Lizhi	Mediatek	Mediatek	X	X
DiMinico	Christopher	MC Communications	Panduit	X	X
Donahue	Curtis	UNH - IOL	UNH - IOL	X	X
Eitel	Cornelia	Hirschmann Automation and Control	Hirschmann Automation and Control	X	X
Engels	Yuan	Leoni	Leoni	X	X
Flatman	Alan	LAN Technologies	LAN Technologies	X	X
Franchuk	Brian	Emerson Automation Solutions	Emerson Automation Solutions	X	X
Fritsche	Matthias	Harting	Harting	X	X
Frosch	Rick	Phihong USA	Phihong USA	X	
Gauthier	Claude	OmniPHY	OmniPHY	X	X
Gottron	Jens	Siemens AG	Siemens AG	X	X
Graber	Steffen	Pepperl+Fuchs	Pepperl+Fuchs	X	X
Grau	Olaf	Robert Bosch	Robert Bosch	X	X
Grau	Olaf	Robert Bosch	Robert Bosch	X	
Hess	Dave	Cord Data	Cord Data	X	X
Hogenmiller	Thomas	Bosch	Bosch	X	X

IEEE P802.3cg Task Force July'17				7/10/17	7/11/17
Last Name	First Name	Employer	Affiliation	Monday	Tuesday
Hoglund	David	Johnson Controls	Johnson Controls	X	X
Hormmeyer	Bernd	Phoenix Contact	Phoenix Contact	X	
Hyakutake	Yasuhiro	Adamant Co., Ltd	Adamant Co., Ltd	X	X
Ilyadis	Nicholas	Marvell	Marvell	X	X
Islinger	Tobius	Denso	Denso	X	
Jimenez	Andrew	Anixter Inc.	Anixter Inc.		X
Jones	Chad	Cisco	Cisco	X	
Jones	Peter	Cisco	Cisco		X
Kamatsu	Yasuaki	Apresia Systems	Apresia Systems		X
Keifer	Adrian	Fachhochschule Nordwestschweiz	Fachhochschule Nordwestschweiz	X	X
Klaus	Andrew	Marvell	Marvell/Jaspar	X	X
Kobayashi	Shigeru	TE Connectivity	TE Connectivity	X	
Krieger	Olaf	Volkswagen	Volkswagen	X	X
Lackner	Hans	QoSCom Gmbh	QoSCom Gmbh	X	X
Lewis	Jon	Dell EMC	Dell EMC	X	X
Lin	Alex	Mediatek	Mediatek	X	X
Maguire	Valerie	Siemon	Siemon	X	X
Marris	Arthur	Cadence	Cadence	X	X
Matheus	Kirsten	BMW	BMW	X	X
McCarthy	Mick	Analog Devices	Analog Devices	X	X
McClellan	Brett	Marvell	Marvell	X	X
Medina	Marcel	Spirent	Spirent		X
Montemezzo	Nicola	Canova Tech SRL	Canova Tech SRL	X	X
Mueller	Harald	Endress+Hauser	Endress+Hauser	X	
Mueller	Thomas	Rosenberger	Rosenberger	X	X
Munson	Carrie	Pulse Electronics	Pulse Electronics		X
Muyshondt	Henry	Microchip Technology	Microchip Technology	X	X
Nordin	Ron	Panduit	Panduit	X	X
Ocuanchain	Oisin	Analog Devices	Analog Devices	X	
Pandey	Sujan	NXP	NXP		X
Pandey	Sujan	NXP	NXP	X	
Peker	Arkadiy	Microsemi	Microsemi	X	X
Petrie	Richard	Microchip	Microchip	X	X
Pischl	Neven	Independent	Independent	X	X
Poehmerer	Rainer	Leoni	Leoni	X	X
Regev	Alon	Ixia	Ixia	X	X
Rossbach	Martin	Nexans	Nexans	X	X
Schicketanz	Dieter	Self	Reutlingen University	X	X

IEEE P802.3cg Task Force July'17				7/10/17	7/11/17
Last Name	First Name	Employer	Affiliation	Monday	Tuesday
Schmidt	Robert	Denso	Denso	X	
Shariff	Masood	Commscope	Commscope	X	X
Stewart	Heath	Analog Devices	Analog Devices	X	X
Tan	Alex	NXP	NXP	X	X
Thompson	Geoff	GraCaSI SA.	Independent	X	X
Tost	Johana	R&S	R&S		X
Umnov	Alexander	Corning	Corning	X	X
Vaden	Sterling	Surtec, Ind.	Vaden Enterprises	X	X
Vanderlaan	Paul	Berk-Tek LLC	Berk-Tek LLC	X	X
Weber	Karl	Beckhoff Automation	Beckhoff Automation	X	
Wechsler	Christopher	Audi AG	Audi AG	X	X
Wendt	Matthias	Philips Lighting	Philips Lighting	X	X
Wienckowski	Natalie	GM	GM	X	X
Winkel	Ludwig	Siemens AG	Siemens AG	X	X
Withey	James	Fluke Networks	Fluke Networks	X	X
Wucher	Markus	Endress+Hauser	Endress+Hauser	X	
Xu	Dayin	Rockwell Automation	Rockwell Automation	X	X
Zerna	Conrad	Frannhofer IIS	Frannhofer IIS	X	X
Zielinski	Martin	Emerson Automation Solutions	Emerson Automation Solutions	X	X
Zimmerman	George	CME Consulting	Commscope, Aquantia, LTC, CME Consulting, Cisco, ADI, BMW, APL Group	X	X
Zinner	Helge	Continental	Continental	X	X
Zweck	Harald	Infineon Tech.	Infineon Tech.	X	X