

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

May 22-24, 2019
Salt Lake City, UT USA

Prepared by Jon Lewis, Dell EMC

The meeting of the IEEE P802.3cg 10 Mbps Single Pair Ethernet Task Force convened at 8:31 AM, Monday, May 22, 2019 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 [May 2019 P802.3cg public website](#).

Administrative Matters

George Zimmerman displayed the agenda in [agenda_3cg_01_0519.pdf](#).

The Task Force Chair asked the participants to introduce themselves, their employer and affiliations.

Motion #1: Move to approve the agenda as shown in [agenda_3cg_01_0519.pdf](#).

M: Heath Stewart S: Peter Jones

Approved by voice without opposition (Procedural > 50%)

Motion Passes

Motion #2: Move to approve minutes of IEEE P802.3cg 10 Mbps Single Pair Ethernet Task Force from March 2019 as posted.

M: Rich Boyer S: Bob Voss

Approved by voice without opposition (Procedural > 50%)

Motion Passes

- Mr. Zimmerman noted that there should be no recording or photography permitted.
- 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 that the attendance tool should be used each day to record attendance. The physical attendance log was introduced and passed to the group.

IEEE Patent Policy, at **8:50 AM**, Mr. Zimmerman read aloud slides #1 and #2. Mr. Zimmerman then made the call for potentially essential patents at **8:52 AM**, none responded. Mr. Zimmerman then read aloud slides #3 and #4.

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

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.

LIAISONS

[ISO/IEC JTC1 SC25 to IEEE 802.3 on single pair cabling](#)

The Task Force decided that no response was required to this liaison letter.

The Chair then showed the project documentation and noted that no changes had been made.

Title: Editor's Opening Report: P802.3cg Draft D3.0 ([maguire 3cg 01a 0519.pdf](#))
Presenter: Valerie Maguire, Siemon; P802.3cg chief editor

The Editor reviewed the last draft balloting status, outlined the comments by topic, and reminded participants that the comments had been posted by topic on the website.

Motion #3: Move to consider 1 comment (i-430) submitted after the P802.3cg draft 3.0 SA ballot deadline, included with Editor's proposed resolutions

M: Valerie Maguire S: Peter Jones

(Technical >= 75%)

Motion Passes by voice without objection

During Motion #3 the Chair asked Jon Lewis to run the meeting.

The Chief Editor reviewed the distribution of the submitted comments and asked if there were any comments where the commenter would like to withdraw the comment, none responded.

Motion #4: Accept the resolutions to all P802.3cg d3p0 comments marked with the Topic "EZ" and posted as, "EZ Bucket" comments with proposed resolutions sorted by Comment ID, excluding comments i-20, i-68, i-72, i-73, i-74, i-78, i-80, i-121, i-125, i-137, i-141, i-146, i-152, i-162, i-243, i-251, i-326, i-359, i-361, i-362, i-366, and i-422.

M: Valerie Maguire S: Bob Voss
(Technical >= 75%)
Motion Passes by voice without objection

Motion #5: Accept the resolutions to all P802.3cg d3p0 comments marked with the Topic “EZ” and posted as, “EZ Bucket” comments with proposed resolutions sorted by Comment ID, excluding comments i-8, i-207, i-208, i-263, i-274, i-288, i-289, i-312, and i-343.

M: Valerie Maguire S: Stefan Graber
(Technical >= 75%)
Motion Passes by voice without objection

At this time, the editor’s report was concluded.

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.

The group took a short break at 10:06 AM.

The group resumed at 10:30 AM.

Comment resolution continued.

Title: Clause 104 Modifications ([stewart_3cg_01_0519_v2.pdf](#))
Presenter: Heath Stewart, Analog Devices

Straw Poll #1:

Would you support removing the (3) proposed 42V to 50V classes in
stewart_3cg_01_0519_v2?

Yes: 30

No: 1

The group recessed for lunch at 12:01 PM

The Chair brought the meeting to order at 1:03 PM and comment resolution continued.

Title: Proposed Remedies Comments 40 and 41 ([stewart_3cg_02_0519_v1.pdf](#))
Presenter: Gitesh Bhagwat, Heath Stewart; Analog Devices

Title: Comment i-112 text for resolution ([Comment%20i112%20text.docx](#))

Presenter: Chris Diminico, MC Communications

The group took a short break at 3:10 PM.

The group resumed at 3:32 PM.

Title: 802.3cg 10SPE TF Ad Hoc Report ([jones 10spe 01 0519.pdf](#))

Presenter: Peter Jones, Cisco

Peter noted that the next meeting of the ad hoc would be 3 July 2019.

Title: Proposal relating to comments i-282 and i-283

([mccarthy 3cg 01b 0519.pdf](#))

Presenter: Mick McCarthy, Analog Devices

Straw Poll: Future Meetings:

July 2019 Plenary; Vienna, Austria

July 15-18

Y: 25 N: 9 M: 8

Sept 2019 Interim; Indianapolis, IN, USA

September 9-13

Y: 22 N: 2 M: 20

Comment resolution continued.

Motion#6: Move to accept the response for comment i-46 as:

REJECT.

According to IEEE Standards style, 'may' can be replaced by 'is/are allowed'. The text "may be used" would therefore be understood as "are allowed to be used", which does not convey that these "have to be used" as the commenter suggests.

Further, the additional text that the connectors meet IEC 63171 would levy new requirements on the MDI connector without justification.

M: Jon Lewis S: Masood Shariff

(Technical >= 75%)

Y:29 N:1 A:4

MOTION PASSES

The Task Force meeting recessed at 5:55 PM.

The Task Force was brought to order at 8:00 AM.

The Chair brought the meeting to order and asked if anyone in the group was new and would like to introduce themselves, none responded.

The Chair reminded the group to sign into IMAT and the attendance sheet.

- Mr. Zimmerman noted that there should be no recording or photography permitted.
- 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.

IEEE Patent Policy, at **8:05 AM**, Mr. Zimmerman asked the group if anyone had not already seen the patent policy this week, none responded. Mr. Zimmerman then displayed slides #1 and #2 and made the call for potentially essential patents at **8:06 AM**, none responded. Mr. Zimmerman then displayed slides #3 and #4.

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

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.

Comment resolution continued

Straw poll #2

Comment i-196 (to get direction, separate action will resolve comment):

I support the following response: (Chicago rules)

- A. ACCEPT the commenter’s remedy**
- B. REJECT with explanatory text and liaison per the editor’s published proposed response.**
- C. ACCEPT IN PRINCIPLE with the proposed response:**

Align the text for the two example connector types with the guidance provided by TIA and ISO/IEC (e.g., IEC 63171-1 for E1 and E2 per Table 146-7 and IEC 61076-3-125 for E3 per Table 146-7).

A: 10 B: 8 C: 21

The group took a short break at 9:58 AM.

The group resumed at 10:25 AM.

Comment resolution continued

Motion #7: Move to accept the following response to comment i-196:

ACCEPT IN PRINCIPLE

Replace, "Connectors meeting the requirements of IEC 63171-1 or IEC 61076-3-125 may be used as the mechanical interface to the balanced cabling."

With, "Connectors meeting the requirements of IEC 63171-1 may be used as the mechanical interface to the balanced cabling in environments meeting the E1 and E2 electromagnetic classifications specified in Table 146-7. Connectors meeting the requirements of IEC 63171-6 may be used as the mechanical interface to the balanced cabling in environments meeting the E3 electromagnetic classifications specified in Table 146-7."

Editor's implementation note: The 1, 2, and 3 in E1, E2, and E3 are subscript.

M: Masood Shariff S: Valerie Maguire

(Technical >=75%)

Y:16 N: 5 A: 16

MOTION PASSES

Title: Comments i-427, i-425, i-198: Specifying PLCA delay and overflow behavior (v2p0)

[\(Koczwara 3cg Specifying%20PLCA%20delay%20and%20overflow%20behavior v2p0.pdf\)](#)

Presenter: Wojciech Koczwara, Rockwell Automation

Motion #8: Move to accept the above proposed reject response to comment i-27:

M: Chad Jones S: Valerie Maguire

Proposed reject response is:

REJECT.

The CRG disagrees with the commenter. The specification of PLCA is appropriately placed in the physical layer and carries out the operations delegated to the physical layer in the 802.3 architecture, providing mapping of PLS primitives to signalling for the PHY, and aligning the MAC data with the needs of the PHY. Nodes implementing the PLCA RS are interoperable on the same mixing segment with nodes without the PLCA RS implemented or enabled. The functions are located in the physical layer according to the definitions in ISO 7894-1:1994, which states that the physical layer provides "functional and procedural means to activate, maintain, and de-activate physical-connections for bit transmission between data-link-entities." (7.7.2), and that "functions may be provided by the (N)-layer to enhance the facilities offered to, and the quality of service seen by the (N+1)-entities over those which are offered to the (N)-layer by the (N-1)-layer" (5.3.3.1.2). The PLCA RS conforms to the Physical layer service specifications in IEEE 802.3 by interfacing with the MAC at the existing PLS_CARRIER, PLS_DATA_VALID, and PLS_SIGNAL primitives and providing

the information necessary for the local MAC sublayer entity to perform media access functions. (IEEE Std 802.3-2018 6.2.3). The augmentation of the physical layer is consistent with prior augmentation of these primitives in IEEE Std 802.3 over its lifetime, but particularly the last 20 years. For further information, please see http://www.ieee802.org/3/cg/public/adhoc/brandt_020619_3cg_01a_adhoc.pdf

(Technical $\geq 75\%$)

Y: 27 N: 4 A: 8

MOTION PASSES

The group recessed for lunch at 12:01 PM

The Chair brought the meeting to order at 1:00 PM and comment resolution continued.

The group took a short break at 3:02 PM.

The group resumed at 3:33 PM.

Comment resolution continued.

Title: Comment i - 423 ([Comment%20i-423.pdf](#))

Presenter: Piergiorgio Beruto, Canova Tech

The Task Force meeting recessed at 5:53 PM.

The Task Force was brought to order at 8:03 AM.

The Chair brought the meeting to order and asked if anyone in the group was new and would like to introduce themselves, none responded.

The Chair reminded the group to sign into IMAT and the attendance sheet.

- Mr. Zimmerman noted that there should be no recording or photography permitted.
- 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.

IEEE Patent Policy, at 8:09 AM, Mr. Zimmerman asked the group if anyone had not already seen the patent policy this week, none responded. Mr. Zimmerman then displayed slides #1 and #2 and made the call for potentially essential patents at **8:10 AM**, none responded. Mr. Zimmerman then displayed slides #3 and #4.

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

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.

Comment resolution continued

Title: Comment i-285 ([mccarthy_3cg_02a_0519.pdf](#))

Presenter: Mick McCarthy, Analog Devices

The group took a short break at 10:07 AM.

The group resumed at 11:30 AM.

Motion #9: Accept the text above as the response to comment i-265 without the text in angle brackets, as described by straw poll #3 choice B.

M: Peter Jones S: Phil Brownlee

(Technical >=75%)

Y: 21 N: 2 A:5

Motion Passes

Response for Motion #9:

ACCEPT IN PRINCIPLE.

Change "This clause specifies the optional Physical Layer Collision Avoidance (PLCA) capabilities. PLCA is defined for half-duplex mode of operation only. The PLCA RS is specified for operation with the PHY defined in Clause 147 (10BASE-T1S). PLCA is designed to work in conjunction with CSMA/CD and can be dynamically enabled or disabled via management interface."

to

"This clause specifies a reconciliation sublayer to provide optional Physical Layer Collision Avoidance (PLCA) capabilities among participating stations. The PLCA RS is specified for operation with Clause 147 (10BASE-T1S) PHYs operating in half-duplex multidrop mode. PLCA can be dynamically enabled or disabled via management interface.

When enabled, the PLCA RS aligns data from the MAC with transmission opportunities of the physical layer and maps the physical layer signals to PLS primitives towards the MAC. The use of PLCA-enabled physical layers in CSMA/CD half-duplex shared-medium networks provides enhanced performance relative to CSMA/CD without PLCA. PLCA-enabled nodes can coexist with nodes without PLCA enabled on the same mixing segment, all using 802.3 CSMA/CD."

Motion #10: Resolve comment i-270 with the proposed reject response above:

M: Peter Jones S: Tim Baggett
(Technical >=75%)
Y: 20 N: 0 A: 10
Motion Passes

Proposed Reject Response:
REJECT.

The CRG disagrees with the commenter's description of layering and the proper placement of PLCA in the layering model. PLCA performs the functions delegated by the 802.3 layer model to the physical layer - carrier sense and collision detection. Commenter seems to posit an implementation which is not described in the amendment, where the PLCA sublayer interfaces to the MAC via an MII. (a "top MII" per the commenter), whereas PLCA maintains the layering and communicates to the MAC via the primitives PLS_CARRIER and PLS_SIGNAL defined in IEEE Std 802.3, and communicates with the remainder of the physical layer through the MII interface. For more detail on how PLCA relates to OSI layering please see http://www.ieee802.org/3/cg/public/adhoc/brandt_020619_3cg_01a_adhoc.pdf.

Additionally, the fact that PLCA-enabled half-duplex CSMA/CD stations may operate with and coexist with non-PLCA enabled half-duplex CSMA/CD stations on the same mixing segment is evidence that the PLCA RS is located beneath the CSMA/CD MAC and not a new MAC function in itself. See http://www.ieee802.org/3/cg/public/Jan2019/Tutorial_cg_0119_final.pdf and http://www.ieee802.org/3/cg/public/Sept2018/beruto_3cg_mixing_PLCA_with_non_PLCA_enabled_nodes_r1.2.pdf

The group recessed for lunch at 12:33 PM

The Chair brought the meeting to order at 1:34 PM and comment resolution continued.

Title: Proposal relating to comment i-284 ([mccarthy 3cg 03 0519.pdf](#))
Presenter: George Zimmerman, CME Consulting

Title: 10BASE-T1S Detection of Collisions on a Mixing Segment
([griffiths 3cg 01b 0519.pdf](#))
Presenter: David Brandt, Rockwell Automation

The group took a short break at 3:07 PM.

The group resumed at 3:17 PM.

Comment resolution continued.

Comment resolution concluded

Title: Editor's Closing Report: P802.3cg Draft D2.3 ([maquire 3cg 02 0319.pdf](#))

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

Motion #11: Move to grant the Task Force editors license to editorially conform the responses to RevCom guidelines

M: James Gilb S: Steffen Graber

(Technical >= 75%)

Motion passes by voice without objection

(room count = 15)

Motion #12: Move to instruct the Task Force editors to generate draft 3.1 from draft 3.0 and the closed comments, and conduct a 15-day first SA Recirculation ballot.

M: David Brandt S: Brian Franchuk

(Technical >= 75%)

Motion Passes by voice without opposition

(Room count = 15)

The Chair asked if anyone had additional business, none responded.

Motion #13: Adjourn the meeting.

M: Piergiorgio Beruto S: Steffen Graber

Approved by voice without opposition (Procedural > 50%)

Motion Passes

THE MEETING ADJOURNED AT 4:33 AM

Appendix A: Attendees at the IEEE P802.3cg 10 Mb/s Single-Pair Ethernet Task Force Meeting, May 22-24, 2019.

IEEE 802.3 P802.3cg 10 Mb/s Single Pair Ethernet Task Force IEEE 802.3 May 2019	Day 1 22 May	Day 2 23 May	Day 3 24 May
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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	Wed	Thurs	Fri
An	Hongming	Microchip	Microchip	X	X	X
Aono	Michikazu	Yazaki	Yazaki	X	X	X
Baggett	Tim	Microchip	Microchip	X	X	X
Beruto	Piergiorgio	Canova Tech SRL	Canova Tech SRL	X	X	X
Boyer	Rich	Aptiv	Aptiv	X	X	
Brandt	David	Rockwell Automation	Rockwell Automation	X	X	X
Brownlee	Phillip	Independent	TDK	X	X	X
Buchanan	Rory	On Semiconductor	On Semiconductor	X	X	
Choi	Eunmin	DGIST	DGIST	X	X	X
Dawson	Fred	Chemours	Chemours	X		
DiBiaso	Eric	TE Connectivity	TE Connectivity	X		
DiMinico	Christopher	MC Communications	Panduit	X		
Dodge	Matthias	UNH-IOL	UNH-IOL	X	X	
Dube	Kathryn	UNH-IOL	UNH-IOL	X	X	X
Dupuis	Marc	Web Industries	Web Industries	X		
Franchuk	Brian	Emerson Automation Solutions	Emerson Automation Solutions	X	X	X

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Last Name	First Name	Employer	Other Affiliations	Wed	Thurs	Fri
Fritsche	Matthias	Harting	Harting	X	X	X
Gardner	Mike	Molex, LLC	Molex, LLC	X		
Gilb	James	General Atomics Aeronautical Systems Inc.	General Atomics Aeronautical Systems Inc.			X
Graber	Steffen	Pepperl+Fuchs	Pepperl+Fuchs	X	X	X
Grau	Olaf	Robert Bosch	Robert Bosch	X	X	
Grow	Robert	RMG Consulting	RMG Consulting	X	X	X
Hess	Dave	Cord Data	Cord Data	X	X	
Hyakutake	Yasuhiro	Adament Namiki Precision Jewel	Adament Namiki Precision Jewel	X	X	X
Jason	Mies	Infinite Electronics	Infinite Electronics	X		
Jeony	Woojin	DGIST	DGIST	X	X	X
Jones	Chad	Cisco	Cisco		X	
Jones	Peter	Cisco	Cisco	X	X	X
Kadry	Haysam	Ford Motor Company	Ford Motor Company	X	X	X
Kagami	Manabu	NITech	NITech	X		
Kang	Steve	Velonect	Velonect	X		
Koczwara	Wojciech	Rockwell Automation	Rockwell Automation	X	X	X
Kumada	Taketo	Yazaki	Yazaki	X	X	X

IEEE 802.3 P802.3cg 10 Mb/s Single Pair Ethernet Task Force IEEE 802.3 May 2019	Day 1 22 May	Day 2 23 May	Day 3 24 May
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Last Name	First Name	Employer	Other Affiliations	Wed	Thurs	Fri
Lackner	Hans	QoSCom	QoSCom	X	X	X
Law	David	Hewlett Packard Enterprise	Hewlett Packard Enterprise	X	X	X
Lewis	Jon	Dell EMC	Dell EMC	X	X	X
Maguire	Valerie	Siemon	Siemon	X	X	X
Masuda	Takeo	OITDA	OITDA	X	X	
Matheus	Kirsten	BMW	BMW	X	X	
McCarthy	Mick	Analog Devices	Analog Devices	X	X	X
McClellan	Brett	Marvell	Marvell	X	X	X
McMillan	Larry	Western Digital	Western Digital		X	X
Neveux	Paul	Superior Essex	Superior Essex	X	X	X
Pandey	Sujan	NXP	NXP	X	X	
Patwardhan	Gaurav	ADI	ADI	X	X	X
Raju	Parthasarathy	Tektronix	Tektronix	X		
Regev	Alon	Keysight Technologies	Keysight Technologies		X	
Reinhard	Michael	SEI ANTech-Europe GmbH	SEI ANTech-Europe GmbH	X	X	X
Renteria	Victor	Bel Fuse Inc.	Bel Fuse Inc.	X	X	X
Sambarasu	Rakesh	Nexans	Nexans	X		
Savi	Olindo	Hubbell	Hubbell	X	X	
Sedio	Steve	TDK	TDK	X	X	X
Shariff	Masood	Commscope	Commscope	X	X	X

IEEE 802.3 P802.3cg 10 Mb/s Single Pair Ethernet Task Force IEEE 802.3 May 2019	Day 1 22 May	Day 2 23 May	Day 3 24 May
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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	Wed	Thurs	Fri
Shiino	Masato	Furukawa Electric	Furukawa Electric	X	X	X
Sisk	Jason	UNH-IOL	UNH-IOL	X	X	
Sparrowhawk	Bryan	Leviton	Leviton	X	X	
Stewart	Heath	Analog Devices	Analog Devices	X	X	
Taiji	Kondo	Megachips	Megachips	X	X	X
Takeuchi	Junichi	JAE	JAE	X		
Tazebay	Mehmet	Broadcom Ltd.	Broadcom Ltd.	X	X	
Tellas	Ron	Belden	Belden	X	X	
Thompson	Geoff	GraCaSI SA.	Independent	X	X	X
Voss	Bob	Panduit	Panduit	X	X	X
Wienckowski	Natalie	GM	GM	X	X	
Wu	Peter	Marvell	Marvell	X		
Wucher	Markus	Endress+Hauser	Endress+Hauser	X	X	X
Yoshihiro	Niihara	Fujikura	Fujikura	X	X	X
Young	Adrian	Leviton	Leviton	X		
Zimmerman	George	CME Consulting	Commscope, Aquantia, CME Consulting, Cisco, ADI, BMW, APL Group, SensTek	X	X	X