

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

Sept 12-14, 2018
Spokane, WA USA

Prepared by Jon Lewis, Dell EMC and Curtis Donahue, UNH-IOL

The meeting of the IEEE P802.3cg 10 Mbps Single Pair Ethernet Task Force convened at 8:00 AM, Wednesday, September 12, 2018 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 [September 2018 802.3cg public website](#).

Administrative Matters

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_01e_0918.pdf.

M: Mathius Fritsche S: Brett McClellan

Approved by voice without opposition (Procedural > 50%)

Motion Passes

George Zimmerman displayed the agenda in agenda_3cg_01e_0918.pdf.

Motion #2: Move to approve minutes of IEEE P802.3cg 10 Mbps Single Pair Ethernet Task Force from July 2018 as posted.

M: Bob Voss S: James Withey

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 and that for today the only meeting that counts in IMAT is the plenary meeting held this morning. The physical attendance log was introduced and passed to the group.

IEEE Patent Policy, at **8:23 AM**, Mr. Zimmerman noted that the patent policy had been updated and then read slides 1-4 of the patent policy aloud. Mr. Zimmerman then made the call for potentially essential patents at **8:26 AM**, none responded. Mr. Zimmerman then read aloud slide #3.

Mr. Thompson reminded the group to review LOAs already submitted and available on the IEEE patcom website. (<https://standards.ieee.org/about/sasb/patcom/>)

Mr. Zimmerman asked if anyone had not seen the slide entitled "Participation in IEEE 802 Meetings" and asked if there was any discussion necessary, none responded. Mr. Zimmerman then gave an overview of the policy.

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 SC25 WG3 to IEEE 802.3 on connecting hardware for single pair cabling – http://www.ieee802.org/3/minutes/sep18/incoming/SC25_WG3_to_IEEE_802d3_1_pair_Aug_2018.pdf

**Title: ISO/IEC SC25/WG3 Update Report
(SC25%20WG3%20Interim%20Update%20Report%20for%20802.3%20Sept%202018.pdf)**

Presenter: James Withey, Fluke

Mr. Zimmerman showed the PAR, CSD and Objectives URLs and reviewed the approved timeline for the Task Force.

Attendance Poll:

I will attend P802.3cg on Friday afternoon, September 14, 2018.

Y: 26

I am likely to attend 802.3cg at:

Nov 2018 802 Bangkok Thailand plenary:

Y: 33 N: 10 M: 2

January 2019, Long Beach, CA, USA:

Y: 36 N: 0 M: 8

Title: 802.3cg 10SPE TF Ad Hoc Report (jones_10spe_01_0918.pdf)
Presenter: Peter Jones, Cisco

Title: Editor's Report: P802.3cg Draft D1.3 (maguire_3cg_01a_0918.pdf)
Presenter: Valerie Maguire, Siemon; P802.3cg chief editor

The Editor outlined the comments by topic, and reminded participants that the comments had been posted by topic on the website.

Motion #3: Move to include 13 comments (#727, #728, #729, #730, #731, #732, #733, #734, #735, #736, #737, #738, and #739) submitted after the P802.3cg draft 2.0 Initial Working Group review deadline

M: Valerie Maguire S: Peter Jones
(Technical >= 75%)

Motions Passes by Voice without Opposition

The Editor asked if anyone would like more time to review the EZ bucket or needed any comments pulled from the EZ bucket list.

Motion #4: Accept the resolutions to all P802.3cg d2p0 comments marked with the Topic "EZ" and posted as, "EZ Bucket" comments with proposed resolutions sorted by clause/subclause', excluding comments #93, #110, #308, #384, #403, #409, #436, #464, #585, and #638

M: Valerie Maguire S: Piergiorgio Beruto
(Technical >= 75%)

Y: 42 N: 0 A: 4

Motion Passes

Motion #5: Move to postpone Motion #4 until first thing Thursday morning.

M: Geoff Thompson S:

Motion Fails for lack of a seconder

Motion #6: Accept the resolutions to all P802.3cg d2p0 comments marked with the Topic "Editorial" and posted as, "Editorial" comments with proposed resolutions sorted by clause/subclause', excluding comments #265, #267, #292, #294, #368, #450, and #466

M: Valerie Maguire S: Gergely Huszak
(Technical >= 75%)

Y: 47 N: 0 A: 2

Motion Passes

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.

**Title: Auto-Negotiation Start Delimiter (Comments #182, #256)
(Graber_3cg_01a_0818.pdf)**
Presenter: Steffen Graber, Pepperl+Fuchs

Title: MDI update (Fritsche_3cg_01a_0918.pdf)
Presenter: Matthias Fritsche, HARTING Technology Group

Title: Copper LC connector interoperability (pelletier_3cg_01_0918.pdf)
Presenter: Masood Shariff, Commscope

The meeting recessed for a short break at 10:29 AM.

The meeting resumed at 10:49 AM.

Comment resolution continued.

Title: Optional Cable Resistance Measurement (stewart_0918_01.pdf)
Presenter: Gitesh Bhagwat, Heath Stewart, Analog Devices

**Title: Proposed resolution for Comments 477, 478, 583 relating to Fast Startup of
a T1L PHY (ocuanachain_8023cg_02_0818.pdf)**
Presenter: Michal Brychta, Analog Devices

**Title: 10BASE-T1L PHY Control State Diagram (Comment #584)
(Graber_3cg_05a_0818.pdf)**
Presenter: Steffen Graber, Pepperl+Fuchs

The meeting recessed for lunch at 12:06 PM.

The meeting resumed at 1:21 PM.

The Chair called the meeting to order and presentations relating to comment resolution resumed.

**Title: 10BASE-T1L Receive State Diagram (Comment #577)
(Graber_3cg_04a_8118.pdf)**

Presenter: Steffen Graber, Pepperl+Fuchs

**Title: 10BASE-T1L EEE (Comments #574, #575, #579, #582)
(Graber_3cg_06a_8118.pdf)**

Presenter: Steffen Graber, Pepperl+Fuchs

**Title: 10BASE-T1L PSD Mask Changes (Comment #192)
(Graber_3cg_02a_8118.pdf)**

Presenter: Steffen Graber, Pepperl+Fuchs

**Title: 10BASE-T1L JAB State Diagram (Comment #469)
(Graber_3cg_03a_8118.pdf)**

Presenter: Steffen Graber, Pepperl+Fuchs

**Title: 10BASE-T1L Transmit Amplitude (Comments #723, #671)
(Graber_3cg_07b_8118.pdf)**

Presenter: Steffen Graber, Pepperl+Fuchs

The meeting recessed for a short break at 3:14 PM.

The meeting resumed at 3:31 PM.

Comment resolution continued.

Title: -Tutorial- What are the functional requirements for monitoring media to support CSMA/CD? (thompson_3cg_01_0918.pdf)

Presenter: Geoff Thompson, GraCaSI S.A.

**Title: -Tutorial- Just what is an 802.3 Repeater: What is it good for? Why is it better than a Dot 1bridge? Why is it worse than a Dot 1bridge?
(thompson_3cg_02_0918.pdf)**

Presenter: Geoff Thompson, GraCaSI S.A.

Straw Poll #2:

I agree with the following statement:

A: P802.3cg should define its PHYs to support repeaters and the necessary functionality (e.g., AUI)

B: P802.3cg should define repeaters as out of bounds for all 10BASE-T1 PHY types

C: None of the above, but I have an opinion

A: 6 B: 23 C: 0 Abstain: 9

The Task Force meeting recessed for the day at 6:34 PM.

The Task Force was brought to order at 8:02 AM.

Mr. Zimmerman called the meeting to order.

- Mr. Zimmerman noted that there should be no recording or photography.
- 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 **8:11 AM**, Mr. Zimmerman asked if anyone had not seen the patent policy this week, none responded. Mr. Zimmerman then made the call for potentially essential patents at **8:12 AM**, none responded. The Chair then read aloud slide #3 and slide #4.

Mr. Zimmerman reviewed the slide entitled “Participation in IEEE 802 Meetings” and 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.

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

Comment resolution continued.

The meeting recessed for a short break at 10:29 AM.

The meeting resumed at 10:53 AM.

Presentations related to comments resumed.

Title: PLCA CRS usage (beruto_3cg_CRS_usage.pdf)

Presenter: Piergiorgio Beruto, Canova Tech

Title: 10BASE-T1S jabber problem (beruto_3cg_T1S_jabber.pdf)

Presenter: Piergiorgio Beruto, Canova Tech

**Title: 10BASE-T1S Autoneg and Link Status Indication
(beruto_3cg_T1S_autoneg_r1.1.pdf)**

Presenter: Piergiorgio Beruto, Canova Tech

Comment resolution continued.

During discussion on the disposition of comment #573: The chair charters an ad hoc specifically to investigate and propose a recommended solution within the project scope of IEEE P802.3cg to implement the functionality desired in comment 573 on 802.3cg d2p0 (e.g., at least not requiring a new service interface). The ad hoc shall report its progress to the Task Force by the November plenary, and the comment will be re-opened for discussion.

The meeting recessed for lunch at 12:19 PM.

The meeting resumed at 1:32 PM.

The Chair called the meeting to order and comment resolution continued.

**Title: Interworking between PLCA enabled nodes with non-PLCA enabled nodes
(beruto_3cg_mixing_PLCA_with_non_PLCA_enabled_nodes_r1.1.pdf)**

Presenter: Piergiorgio Beruto, Canova Tech

The meeting recessed for a short break at 2:59 PM.

The meeting resumed at 3:21 PM.

Comment resolution resumed.

Motion #7: Move that 10BASE-T1S and 10BASE-T1L will not define an AUI or support use of Clause 9 Repeater unit with 10BASE-T1S and 10BASE-T1L.

M: Peter Jones S: Piergiorgio Beruto

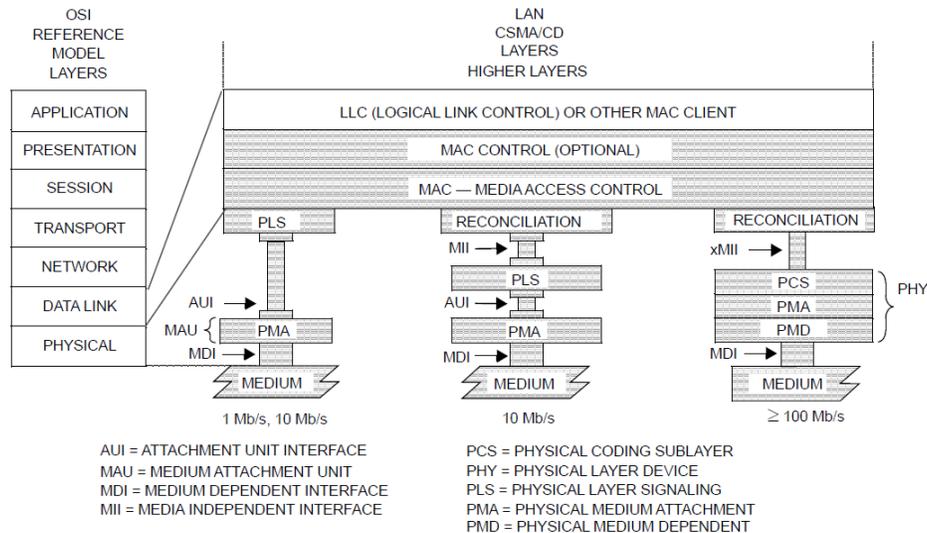
(Technical >= 75%)

Y:27 N: 2 A: 7

Motion Passes

Motion #8: Move to disposition comment #304 as “Accept in Principle” with the following modifications to the draft.

In Clause 1.1.3 Architectural perspectives, update “Figure 1–1—IEEE 802.3 standard relationship to the ISO/IEC Open Systems Interconnection (OSI) reference model (shown below).



NOTE—In this figure, the xMII is used as a generic term for the Media Independent Interfaces for implementations of 100 Mb/s and above. For example: for 100 Mb/s implementations this interface is called MII; for 1 Gb/s implementations it is called GMII; for 10 Gb/s implementations it is called XGMII; etc.

Figure 1–1—IEEE 802.3 standard relationship to the ISO/IEC Open Systems Interconnection (OSI) reference model

Change “100 Mb/s” at the bottom of the right column to “100 Mb/s, 10BASE-T1L, 10BASE-T1S”

In Clause 9.1 “Overview”

Change:

“This clause specifies a repeater for use with IEEE 802.3 10 Mb/s baseband networks.”

To:

“This clause specifies a repeater for use with IEEE 802.3 10 Mb/s baseband networks, with the exceptions of 10BASE-T1L (Clause 146) and 10BASE-T1S (Clause 147).”

In Clause 146.1 Overview add the following sentence

“10BASE-T1L does not define an AUI.”

In Clause 147.1 Overview add the following sentence

“10BASE-T1S does not define an AUI.”

Editorial License granted to the Editor to do a global search and correct as necessary.

M: Peter Jones S: Piergiorgio Beruto

(Technical >= 75%)

Y: 26 N: 2 A: 6

Motion Passes

Motion #9: Move that the disposition of comments #313, #632, #638, #659 and #661 is "Reject: Consensus not to change"

M: Peter Jones S: Piergiorgio Beruto

(Technical >= 75%)

Y: 28 N: 1 A: 6

Motion Passes

The Chair noted that the start time for the Task Force was 8:00 AM.

The Task Force meeting recessed for the day at 6:34 PM.

The Task Force was brought to order at 8:10 AM.

Mr. Zimmerman called the meeting to order.

- Mr. Zimmerman noted that there should be no recording or photography.
- 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 **8:17 AM**, Mr. Zimmerman asked if anyone had not seen the patent policy this week, none responded. Mr. Zimmerman then made the call for potentially essential patents at **8:18 AM**, none responded. The Chair then read aloud slide #3 and slide #4.

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

Chair briefly 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 resumed.

The meeting recessed for a short break at 10:29 AM.

The meeting resumed at 10:53 AM.

The Chair resume the meeting and Curtis Donahue assumed the role of recording secretary.

Motion #10: Move to resolve comment 617 as ACCEPT IN PRINCIPLE with the new paragraph above.

M: Masood Sheriff **S:** Chris DiMinico

(Technical \geq 75%)

Y: 23 **N:** 2 **A:** 3

Motion Passes

Motion #11: Move to reject comment 618 with rationale of NO CONSENSUS TO CHANGE..

M: Gerrit den Besten **S:** Chris DiMinico

(Technical \geq 75%)

Y: 17 **N:** 1 **A:** 12

Motion Passes

Motion #12: Move to accept the editor's proposed resolutions on the comments in file 802.3cg_draft2p0_Remaining_by_CommentID.pdf.

M: S:

(Technical \geq 75%)

Y: 17 **N:** 0 **A:** 3

Motion Passes

Motion #13: Move to confirm adhoc minutes as posted for 8/15/18 and 8/29/18.

M: Peter Jones **S:** Chris DiMinico

(Procedural \geq 50%)

Motion Passes by voice without opposition

Title: Editor's Closing Report: P802.3cg Draft D2.0 (maguire_3cg_02_0918.pdf)

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

Motion #14: Move to instruct editors to generate draft 2.1 from draft 2.0 and the closed comments, and request that IEEE 802.3 progress the draft to a 20-day first WG Recirculation Ballot.

M: Valerie Maguire **S:** Gergely Huszak

(Technical \geq 75%)

Y: 21 **N:** 0 **A:** 0

Motion Passes

The Chair then reviewed the proposed timelines and discussion was heard on the different options presented.

Motion #: Adjourn the meeting.

M: Curtis Donahue

S: Kae Dube

**Approved by voice without opposition (Procedural > 50%)
Motion Passes**

THE MEETING ADJOURNED AT 5:02 PM

Appendix A: Attendees at the IEEE P802.3cg 10 Mb/s Single-Pair Ethernet Task Force Meeting, September 12-14, 2018.

IEEE 802.3 September 2018 Interim Meeting: P802.3cg 10 Mb/s Single Pair Ethernet Task Force				Day 1 12 Sept	Day 2 13 Sept	Day 3 14 Sept
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	Thur	Fri
Aekins	Robert	Legrand	Legrand	X		
Anslow	Pete	Ciena	Ciena			X
Baggett	Tim	Microchip	Microchip	X	X	X
Bains	Amrik	Cisco	Cisco	X	X	X
Beruto	Piergiorgio	Canova Tech SRL	Canova Tech SRL	X	X	
Bhagwat	Gitesh	Analog Devices	Analog Devices	X	X	X
Brandt	David	Rockwell Automation	Rockwell Automation	X	X	X
Brillhart	Theo	Fluke Networks	Fluke Networks	X		
Brownlee	Phillip	Independent	TDK	X	X	X
Brychta	Michal	Analog Devices	Analog Devices	X	X	X
Den Besten	Gerrit	NXP Semiconductors	NXP Semiconductors	X	X	X
DiMinico	Christopher	MC Communications	Panduit		X	X
Dinh	Thuyen	Pulse Electronics	Pulse Electronics	X	X	

IEEE 802.3 September 2018 Interim Meeting: P802.3cg 10 Mb/s Single Pair Ethernet Task Force				Day 1 12 Sept	Day 2 13 Sept	Day 3 14 Sept
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	Thur	Fri
Donahue	Curtis	UNH - IOL	UNH - IOL	X	X	X
Dube	Kathryn	UNH-IOL	UNH-IOL	X	X	X
Fathi Moghadam	Borhan	NVIDIA	NVIDIA	X		X
Fazlollah	Amir	Futurewei	Futurewei	X		
Franchuk	Brian	Emerson Automation Solutions	Emerson Automation Solutions	X	X	X
Fritsche	Matthias	Harting	Harting	X	X	X
Gardner	Mike	Molex, LLC	Molex, LLC	X	X	X
Gauthier	Claude	NXP	NXP	X	X	X
Gottron	Jens	Siemens AG	Siemens AG	X	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
Hajduczenia	Marek	Charter	Charter			X
Healey	Adam	Broadcom Ltd.	Broadcom Ltd.			X
Hess	Dave	Cord Data	Cord Data	X		
Huszak	Gergely	Kone	Kone	X	X	X

IEEE 802.3 September 2018 Interim Meeting: P802.3cg 10 Mb/s Single Pair Ethernet Task Force	Day 1 12 Sept	Day 2 13 Sept	Day 3 14 Sept
--	--------------------------	--------------------------	--------------------------

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	Thur	Fri
Ingrassia	Alessandro	Canova Tech SRL	Canova Tech SRL		X	
Iyer	Venket	Microchip	Microchip	X	X	X
Jones	Chad	Cisco	Cisco	X	X	
Jones	Peter	Cisco	Cisco	X	X	X
Krieger	Olaf	Volkswagon	Volkswagon	X	X	
Lackner	Hans	QoSCom	QoSCom	X	X	X
Law	David	Hewlett Packard Enterprise	Hewlett Packard Enterprise	X	X	X
Lawlis	James	Ford Motor Company	Ford Motor Company	X	X	
Lewis	Jon	Dell EMC	Dell EMC	X	X	X
Loukianov	Dmitri	Broadcom Ltd.	Broadcom Ltd.	X	X	X
Maguire	Valerie	Siemon	Siemon	X	X	X
Masuda	Takeo	OITDA	OITDA	X	X	
McClellan	Brett	Marvell	Marvell	X	X	X
Miller	Martin	Microchip	Microchip	X	X	X
Mueller	Harald	Endress+Hauser	Endress+Hauser	X	X	X

IEEE 802.3 September 2018 Interim Meeting: P802.3cg 10 Mb/s Single Pair Ethernet Task Force				Day 1 12 Sept	Day 2 13 Sept	Day 3 14 Sept
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	Thur	Fri
Pardo	Carlos	KDPOF	KDPOF	X		
Pohl	Christopher	Beckhoff	Beckhoff	X	X	X
Renteria	Victor	Bel Fuse Inc.	Bel Fuse Inc.	X	X	X
Savi	Olindo	Hubbell	Hubell	X	X	
Shariff	Masood	Commscope	Commscope	X	X	
Stassar	Peter	Huawei	Huawei			X
Stewart	Heath	Analog Devices	Analog Devices	X	X	
Taiji	Kondo	Megachips	Megachips	X	X	X
Thompson	Geoff	GraCaSI SA.	Independent	X	X	
Toshihiro	Ichimaru	SEI	SEI	X	X	X
Voss	Bob	Panduit	Panduit	X	X	
Wendt	Matthias	Signify	Signify	X	X	
Widger	Madelyn	UNH-IOL	UNH-IOL	X	X	X
Wienckowski	Natalie	GM	GM	X		
Withey	James	Fluke Networks	Fluke Networks	X	X	X
Wu	Peter	Marvell	Marvell	X		
Wucher	Markus	Endress+Hauser	Endress+Hauser	X	X	

IEEE 802.3 September 2018 Interim Meeting: P802.3cg 10 Mb/s Single Pair Ethernet Task Force				Day 1 12 Sept	Day 2 13 Sept	Day 3 14 Sept
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	Thur	Fri
Zielinski	Martin	Emerson Automation Solutions	Emerson Automation Solutions	X	X	X
Zimmerman	George	CME Consulting	Commscope, Aquantia, CME Consulting, Cisco, ADI, BMW, APL Group	X	X	X