Approved Minutes

# IEEE P802.3cd 50 Gb/s, 100 Gb/s, 200 Gb/s Ethernet Task Force

Interim Meeting

May 22-23, 2018

Pittsburgh, PA, USA

Prepared by Kent Lusted

# Table of Contents

# IEEE P802.3cd 50 Gb/s, 100 Gb/s, 200 Gb/s Ethernet Task Force – May 22, 2018

*Prepared by Kent Lusted*

IEEE P802.3cd 50 Gb/s, 100 Gb/s, and 200 Gb/s Ethernet Task Force meeting convened at ~8:00 a.m., by Kent Lusted.  He noted that he was the appointed Task Force Chair for the meeting by David Law (IEEE 802.3 Working Group Chair) due to Mark Nowell's absence.

Chair welcomed attendees.

Introductions were made.

Chair reviewed agenda in http://www.ieee802.org/3/cd/public/May18/agenda_3cd_01_0518.pdf

**Motion #1:**
Move to approve the agenda:
- Moved by:  Adee Ran
- Second by: Rich Mellitz
- Passed by voice without opposition

Minutes were posted shortly after the March meeting.  Chair asked if there was any feedback on the posted minutes.  No one responded.

**Motion #2:**
Move to approve the March 2018 minutes:
- Moved by:  Adee Ran
- Second by:  Liav Ben-Artsi
- Passed by voice without opposition

Chair reminded participants to observe meeting decorum.  Called for members of the press.  No one responded.  Photography and recording are not permitted.

Chair reviewed the reflector and web information.  Chair reviewed the ground rules for the meeting.

Chair reviewed the attendance procedures.  Chair reminded participants to sign into the IEEE Meeting Attendance Tool and to sign the book.

Chair reviewed the IEEE structure.

Chair reviewed the Bylaws and Rules slides in
http://www.ieee802.org/3/cd/public/May18/agenda_3cd_01_0518.pdf

Chair noted that there was a slide with a statement on the participation in IEEE 802 Meetings. Chair noted that by participating in the IEEE 802 meeting, that participants accept these requirements.  Chair asked if there were questions about the participation requirements.  No one responded.

**IEEE Patent Policy**: Chair reviewed the Patent related slides on the 4 slides contained in the agenda.  Chair calls for potentially essential patents.  No one responded.  Chair read the Guidelines for IEEE WG meetings.   No one responded.

**Chair advised the WG attendees that:**
- The IEEE's patent policy is described in Clause 6 of the *IEEE-SA Standards Board Bylaws*;
- Early identification of patent claims which may be essential for the use of standards under development is strongly encouraged;
- There may be Essential Patent Claims of which the IEEE is not aware. Additionally, the IEEE, the WG, nor the WG chair can ensure the accuracy or completeness of any assurance or whether any such assurance is, in fact, of a Patent Claim that is essential for the use of the standard under development.

No one responded.

Chair reviewed the IEEE 802.3 Standards Process.

Chair noted that there were no liaison letters received.

Chair reviewed the links to the P802.3cd Ethernet Task Force approved project documentation.

Chair reviewed the adopted objectives.

Chair reviewed the adopted timeline and the current timeline.

Chair reviewed the D3.2 recirculation Sponsor Ballot results.

Goals for the meeting:
- Comment Resolution
- Review Technical presentations
- Generate D3.3

Chair reviewed the meeting logistics.

Chair noted that the hot topics in Draft 3.2 were TDECQ and ERL.

Chair reviewed the meeting agenda.

There were 2 late requests from Adee Ran and Mike Dudek. Adee prepared a working document for reference during comment resolution. Mike Dudek had an update with new information on Pmax/Vref. Chair asked if there was opposition to hearing these presentations. No one responded.

Chair noted that the presentation prepared by Pavel Zivny was not associated with a comment against the draft. The presentation would be deferred to the end of comment resolution.

Chair also noted that several presentations were updated and posted to the website.

Future Meetings:
- July 2018 Plenary
    - Week of July 8, 2018 – San Diego, CA, USA
- September 2018 Interim
    - Week of September 9, 2018 -- Spokane, WA, USA

Anyone interested in hosting a meeting should contact the Chair or Steve Carlson.


**IEEE P802.3cd Task Force Ad-hoc report:**
"802.3cd Task Force Ad-hoc report", Kent Lusted
See: http://www.ieee802.org/3/cd/public/May18/lusted_3cd_01_0518.pdf
- Tentatively expect calls to resume on June 13, 2018. Announcement will be made over the email reflector.


**Presentation #1:**
"Chief Editor's Report", Matt Brown
See: http://www.ieee802.org/3/cd/public/May18/brown_3cd_01_0518.pdf
- Chief Editor thanked the editors and advisors for their efforts to review and produce the draft.
- Chair thanked the editorial team for their work to prepare the draft and comment responses.


**Presentation #2:**
"Comment Agenda", Matt Brown
See:

- Matt reviewed the list of comments considered "bucket" worthy. (see: http://www.ieee802.org/3/cd/comments/8023cd_D32_comment_proposed_responses_bucket_list.pdf )
- Matt asked participants to review the proposed responses for the "bucket worthy" comments and notify the Chair, the Chief Editor and the Recording Secretary of any comments that should be addressed on the Task Force floor. The proposed responses to the unresolved bucket comments will be adopted in a motion during closing business.

Matt Brown reviewed the tentative plan for comment resolution.

Chief Editor noted that the deadline for pulling comments from the bucket will be no later than 12 noon on Wednesday.

Chair noted that he received a late contribution from Adee Ran that is a working document of consensus for the ERL comments.  Chair asked if there was opposition to reviewing the document.  No one responded.

Chair noted an error in the attendance book date columns.  The day and month are correct; the indicated weekdays are incorrect.

Comment resolution began at ~9:00 a.m.

Chair noted that the bucket list pdf was posted to the website.  See http://www.ieee802.org/3/cd/comments/8023cd_D32_comment_proposed_responses_bucket_list.pdf

Reviewed the initial ERL summary document prepared by Adee Ran.  See: http://www.ieee802.org/3/cd/public/May18/ran_3cd_02_0518.pdf

Nathan Tracy withdrew comment #61.

**Presentation #3:**
"ERL Change Proposal Overview", Rich Mellitz
See:  http://www.ieee802.org/3/cd/public/May18/mellitz_3cd_01a_0518.pdf
- The presentation outlines 2 options that need to be considered.

**Presentation #4:**
"ERL and system performance for 50GBASE-CR", Mike Dudek
See:  http://www.ieee802.org/3/cd/public/May18/dudek_3cd_01a_0518.pdf
- Clarifying questions were asked and answered.

Chair asked participants to review the proposed responses for the "bucket worthy" comments and notify the Chair, the Chief Editor and the Recording Secretary of any comments that should be addressed on the Task Force floor. The proposed responses to the unresolved bucket comments will be adopted in a motion during closing business.

Chair reminded participants to sign into IMAT and to sign the attendance book.

**Presentation #5:**
"ERL measured results for 50G-KR Device (update)", Toshiaki Sakai
See:  http://www.ieee802.org/3/cd/public/May18/sakai_3cd_01_0518.pdf
- The test environment includes a socket.

Break at ~10:00 a.m.  resumed at ~10:20 a.m.

Chair asked participants to review the proposed responses for the "bucket worthy" comments and notify the Chair, the Chief Editor and the Recording Secretary of any comments that should be addressed on the Task Force floor. The proposed responses to the unresolved bucket comments will be adopted in a motion during closing business.

Chair reminded participants to sign into IMAT and to sign the attendance book.

**Presentation #6:**
"ERL effect on COM (in support of r02-30)", Adee Ran
See:  http://www.ieee802.org/3/cd/public/May18/ran_3cd_01_0518.pdf
- Clarifying questions were asked and answered.

Chair noted that the optical focused topic comment resolution will begin no later than immediately after the afternoon break.

Comment resolution resumed.

**Straw Poll #1**
For Tx ERL minimum in clause 136, I would support
1. One of the fixed values per option a
2. Option c
3. Option e
   Chicago rules
Results:  #1: 16,  #2: 9, #3: 0
See http://www.ieee802.org/3/cd/public/May18/ran_3cd_03_0518.pdf

**Straw Poll #2**

For Tx ERL minimum in clause 136, I would support

1. A fixed value 11 dB per option a
2. ERL  0 + 40LOG10 (Vf/pmax) per option c
   Choose one

Results: #1: 3, #2: 17

See http://www.ieee802.org/3/cd/public/May18/ran_3cd_03_0518.pdf

**Straw Poll #3**

For Tx ERL minimum in clause 137, I would support

1. 15 dB
2. No change
   Choose one

Results:  #1: 11, #2: 4

See http://www.ieee802.org/3/cd/public/May18/ran_3cd_03_0518.pdf

Break at ~12:10 p.m.  Resumed ~1:20 p.m.

Chair asked participants to review the proposed responses for the "bucket worthy" comments and notify the Chair, the Chief Editor and the Recording Secretary of any comments that should be addressed on the Task Force floor. The proposed responses to the unresolved bucket comments will be adopted in a motion during closing business.

Chair noted that the deadline for pulling comments from the bucket will be no later than 12 noon on Wednesday.

Chair reminded participants to sign into IMAT and to sign the attendance book.

**Straw Poll #4:**

Straw poll #4:

For Cable assembly ERL minimum in clause 136, I would support

1. Option b
2. Option c
3. Option d
   Chicago rules

Results: #1: 4, #2: 13, #3: 14

See http://www.ieee802.org/3/cd/public/May18/ran_3cd_03_0518.pdf

**Straw Poll #5**

For Cable assembly ERL minimum in clause 136, I would support

1. Accepting r02-23
2. Rejecting r02-23

Choose one

Results: #1: 15, #2: 8

See http://www.ieee802.org/3/cd/public/May18/ran_3cd_03_0518.pdf

**Straw Poll #6:**

Straw poll conducted as part of comment resolution discussion.  See details in posted final comments to comment #r02-38.

**Straw Poll #7:**

For Host Rx ERL minimum in clause 136, I would support

1. Changing to 12 dB
2. Changing to 10 dB
3. No change
   Choose one

Results:  #1:  6, #2: 8 , #3: 0

See http://www.ieee802.org/3/cd/public/May18/ran_3cd_03_0518.pdf

Chair reviewed the plans for the afternoon; discuss and resolve optical comments and hear presentations.

Chair noted that the current plan for a single track for comment resolution.  There will not be a breakout room on Wednesday.  Chair noted that the meeting will continue until ~6 p.m. tonight.

Break at ~3:05 p.m.  Resume ~3:35 p.m.

**Presentation #7:**

"TDECQ Reference Receiver Precursor Constraint ", Phil Sun

See:    http://www.ieee802.org/3/cd/public/May18/sun_3cd_01_0518.pdf

- Updated presentation version "01a" with additional supporters and a technical change. Chair asked if there was opposition to hearing it; no one responded.

**Presentation #8:**

"TDECQ and SRS", Piers Dawe

See:  http://www.ieee802.org/3/cd/public/May18/dawe_3cd_01b_0518.pdf

- Updated presentation version '01b' with additional supporters.  Chair asked if there was opposition to hearing it; no one responded.

Phil Sun withdrew comment #r02-8.

**Straw Poll #8:**

Straw poll conducted as part of comment resolution discussion.  See details in posted final comments to comment #r02-7.


**Presentation #9:**

"Additional PAM4 transmitter constraints", Jonathan King

See:  http://www.ieee802.org/3/cd/public/May18/king_3cd_02a_0518.pdf

Chair confirmed an 8:00 a.m. start on Wednesday.

Chair asked participants to review the proposed responses for the "bucket worthy" comments and notify the Chair, the Chief Editor and the Recording Secretary of any comments that should be addressed on the Task Force floor. The proposed responses to the unresolved bucket comments will be adopted in a motion during closing business.

Chair noted that the deadline for pulling comments from the bucket will be no later than 12 noon on Wednesday.


Chair reminded participants to sign into IMAT and to sign the attendance book.

Break for the day at ~6:00 p.m.

# IEEE P802.3cd 50 Gb/s, 100 Gb/s, 200 Gb/s Ethernet Task Force – May 23, 2018

*Prepared by Kent Lusted*

IEEE P802.3cd 50 Gb/s, 100 Gb/s, and 200 Gb/s Ethernet Task Force meeting convened at ~8:05 a.m., by Kent Lusted.  He noted that he was the appointed Task Force Chair for the meeting by David Law (IEEE 802.3 Working Group Chair) due to Mark Nowell's absence.

Chair reminded participants to sign into IMAT and to sign the attendance book.

Chair asked participants to review the proposed responses for the "bucket worthy" comments and notify the Chair, the Chief Editor and the Recording Secretary of any comments that should be addressed on the Task Force floor. The proposed responses to the unresolved bucket comments will be adopted in a motion during closing business.

Chair noted that the deadline for pulling comments from the bucket will be no later than 12 noon on Wednesday.

Chair thanked Ethernet Alliance for hosting the May interim meeting and the social event on Tuesday night.

Chair thanked the editorial team for their work to produce the draft specification and prepare comment responses.

Chair reviewed the plans for the day: resolve optical comments until lunch break, resolve electrical comments after lunch break until electrical is done, then resume optical comments until finished (if necessary).

Chair reviewed the current timeline from the agenda (see: http://www.ieee802.org/3/cd/public/May18/agenda_3cd_01_0518.pdf  ).  Chair noted that this is the last chance to make a structural/methodology change.  Parameters can be adjusted in the next ballot cycle, if needed.

Comment resolution resumed.

**Straw Poll #9:**
Straw poll conducted as part of comment resolution discussion.  See details in posted final comments to comment #r02-27.

**Presentation #10:**

"VCSEL transmitter performance update", Jonathan King
See:  http://www.ieee802.org/3/cd/public/May18/king_3cd_03_0518.pdf


**Presentation #11:**
"Changes to other optical specs when TDECQ spec limit is adjusted", Jonathan King
See: http://www.ieee802.org/3/cd/public/May18/king_3cd_01_0518.pdf


**Presentation #12:**
"Changes to other optical specs when TDECQ spec limit is adjusted", Marco Mazzini
See:  http://www.ieee802.org/3/cd/public/May18/mazzini_3cd_01a_0518.pdf
  ● Chair noted that the updated non-inverting SSPRQ and PRBS13Q are posted to the website.  (see: http://www.ieee802.org/3/cd/public/May18/SSPRQ_not_inverted_calc_for_TDECQ_05222018.txt and http://www.ieee802.org/3/cd/public/May18/PRBS13Q_not_inverted_calc_for_TDECQ_05222018.txt )


Chair announced that after the morning break, the TF will shift focus to closing the electrical related comments.


Break at ~10:35 a.m.  Resumed at ~11 a.m.


Chair reminded participants to sign into IMAT and to sign the attendance book.

Chair asked participants to review the proposed responses for the "bucket worthy" comments and notify the Chair, the Chief Editor and the Recording Secretary of any comments that should be addressed on the Task Force floor. The proposed responses to the unresolved bucket comments will be adopted in a motion during closing business.

Chair noted that the deadline for pulling comments from the bucket will be no later than 12 noon on Wednesday.

Chair noted that there would be an optical related offline consensus building breakout meeting in the Allegheny room.

Comment resolution continued.

**Straw Poll #10:**
For the cable assembly specifications, I would support

1. Removing the recommended differential return loss
2. Retaining the recommended differential return loss
   Choose one
Results #1: 25, #2: 1
See http://www.ieee802.org/3/cd/public/May18/ran_3cd_03_0518.pdf


Chief Editor made a final call for requests to pull comments from the bucket.  No one responded.

Chair reminded participants to sign into IMAT and to sign the attendance book.


Break at 12:10 p.m.  Resumed at ~1:20 pm.

Chair reminded participants to sign into IMAT and to sign the attendance book.

Comment resolution continued.

**Straw Poll #11**
Straw poll conducted as part of comment resolution discussion.  See details in posted final comments to comment #r02-30.

Chair announced that he received a request to send a liaison letter to IBTA.  A draft is posted to the website.  It will considered during closing business.

Break at 3:00 p.m.  Resumed at 3:20 p.m.

Chair noted that there were 2 remaining comments on electrical to resolve before switching to optical comment resolution.

Chair noted that immediately before break comment #r02-30 was closed with a response that only addresses Clause 136.  A response was needed to address the Clause 137 change referenced in the presentation from the suggested remedy and will be handled later in the meeting.

Comment resolution continued.

**Straw Poll #12**
Straw poll conducted as part of comment resolution discussion.  See details in posted final comments to comment #r02-3.

**Attendance Straw Polls:**

I will attend the IEEE P802.3cd meetings at the July plenary in San Diego, CA, USA (week of July 8, 2018)

     P802.3cd:  Y: 60  , M: 8

I will attend the IEEE P802.3cd meetings at the September interim in Spokane, WA, USA (week of Sept 10, 2018)

     P802.3cd:  Y: 47  , M: 12

Chair announced that he received a request to send a liaison letter to T11.2.  The liaison letter will considered during closing business.  Chair asked if there were any other liaison requests to consider and made a final call for liaisons.  No one responded.

**Straw Poll #13:**

Straw poll conducted as part of comment resolution discussion.  See details in posted final comments to comment #r02-47.

There was a request for the agenda for the remainder of the day.  Chair noted that the meeting would end when comment resolution was completed, the liaison letters were reviewed, and the closing business was completed.

Chief Editor asked if there was objection to reopening #r02-30 to address the Clause 137 change referenced in the presentation from the suggested remedy.  No one objected.

Chair displayed the draft liaison letters to IBTA and T11-2.  See
http://www.ieee802.org/3/cd/public/May18/IEEE_802d3cd_to_IBTA_0518_liaison_draft.docx
and http://www.ieee802.org/3/cd/public/May18/IEEE_802d3cd_to_T11-2_liaison_draft.docx
Changes were made and saved as
http://www.ieee802.org/3/cd/public/May18/IEEE_802d3cd_to_IBTA_0518_liaison_draft2.docx
and http://www.ieee802.org/3/cd/public/May18/IEEE_802d3cd_to_T11-2_liaison_draft2.docx

**Motion #3:**

Move that the Task Force approve the text in:
- IEEE_802d3cd_to_IBTA_0518_liaison_draft2.docx with editorial license granted to the Chair (or his appointed agent) as a liaison to IBTA
- IEEE_802d3cd_to_T11-2_liaison_draft2.docx with editorial license granted to the Chair (or his appointed agent) as a liaison to T11-2

M:   Piers Dawe
S:  Mike Dudek
Technical (>=75%)
Results:   pass by voice w/o opposition

**Presentation 13:**
"SECQ and its sensitivity to measurement bandwidth", Pavel Zivny
See:  http://www.ieee802.org/3/cd/public/May18/zivny_3cd_01c_0518.pdf
- Updated version '01c' with additional supporters


Matt reviewed the comment database and noted that all of the on-time comments were resolved.  Chair asked if there were any further comments from participants on the closed comments.  There was a request to reopen comment #r02-9 related to TDECQ; the requestor wanted a straw poll to measure the consensus of the response.  Chair asked if there was opposition to opening the comment.  There were several participants in opposition.  Chair asked for a show of hands to measure the consensus.  Chair observed 10 oppose and 8 in favor.  Chair ruled that there was insufficient support to reopen the comment and that the comment would remain closed.

Chief Editor noted that a late comment was received related to the presentation given by Pavel Zivny.  Chair asked if there was opposition to considering the comment.  No one responded.  Chair ruled that the comment (#r02-62) would be considered.


**Motion #4:**
Move to:
- Accept the proposed responses to any unresolved comments listed in 8023cd_D32_comment_proposed_responses_bucket_list.pdf
- Generate Draft 3.3 from Draft 3.2 and closed comments
M:    Matt Brown
S:   Adee Ran
Technical (>=75%),
Results:    passes by voice w/o opposition


**Motion #5:**
Move to Adjourn:
- Moved by: Adee Ran
- Second by:  David Ofelt
- Passed by voice vote without opposition


Meeting ended at ~7:45 p.m.

Optical Track minutes for May 23
By kent Lusted

Approximately 25 participants in the room

Meeting start at ~11:00 a.m.

Break for lunch ~12:10 pm.  Resumed at ~1:15 p.m.

Track ended at ~2:45 p.m.

# Attendees

| P802.3cd, May 2018 | | | 22-May-18 | 23-May-18 |
|---|---|---|---|---|
| Last Name | First Name | Affiliation | Tuesday | Wednesday |
| Abbott | John | Corning | x | x |
| Anslow | Pete | Ciena Corporation | x | x |
| Baca | Rich | Microsoft | x | x |
| Ben Artsi | Liav | Marvell Semiconductor | x | x |
| Best | Burrell | Samtec | x | x |
| Braun | Ralf-Peter | Deutsche Telekom | x | x |
| Brooks | Paul | Viavi Solutions | x | |
| Burns | Matthew | Samtec | x | |
| Butter | Adrian | Global Foundries | x | x |
| Calvin | John | VTM | x | x |
| Chalupsky | David | Intel | x | |
| Chang | Frank | Independent | x | x |
| Chen | C. C. David | Applied Optoelectronics | x | x |
| Dawe | Piers | Mellanox | x | x |

| DiMinico | Christopher | MC Communications/Panduit | x | |
|---|---|---|---|---|
| Dudek | Mike | Cavium | x | x |
| Estes | Dave | Spirent Communications | x | x |
| Ewen | John | Global Foundries | x | x |
| Filip | Jan | Maxim Integrated Products Inc. | x | x |
| Ghiasi | Ali | Ghiasi Quantum, Huawei | x | x |
| Gong | Zhigang | O-net | x | x |
| Gustlin | Mark | Xilinx | x | x |
| Hasharom | Kobi | Dust Photonics | x | x |
| Healey | Adam | Broadcom Inc. | x | x |
| Heck | Howard | Intel | x | x |
| Hegde | Raj | Broadcom | x | x |
| Hiroaki | Kukita | Yamaichi Electronics | x | x |
| Holden | Brian | Kandou Bus | | x |
| Huang | Xi | Huawei | x | x |

| | | | | |
|---|---|---|---|---|
| Ingham | Jonathan | Foxconn Interconnect Technology | x | x |
| Isono | Hideki | Fujitsu Optical Components | x | x |
| Issenhuth | Tom | Huawei | x | x |
| Kareti | Upen Reddy | Cisco | x | x |
| Kimber | Mark | Semtech | x | |
| Klempa | Mike | UNH-IOL | x | x |
| Lambrecht | Frank | Gigamon Inc | x | x |
| LeCheminant | Greg | Keysight Technologies | x | x |
| Lewis | Dave | Lumentum | x | |
| Li | Mingshan | AOI | | x |
| Lim | Jane | Cisco | x | x |
| Lingle, Jr. | Robert | OFS | x | |
| Liu | Hai-Feng | Intel | x | x |
| Liu | Karen | Kaiam | | x |
| Lusted | Kent | Intel | x | x |
| Lyubsuirsky | Ilya | Inphi | x | x |
| Maki | Jeffery | Juniper Networks | x | x |
| Malicoat | David | Senko/Aquantia | x | x |

| | | | | |
|---|---|---|---|---|
| Marris | Arthur | Cadence | x | x |
| Matoglu | Erdem | Amphenol | x | x |
| Mazzini | Marco | Cisco | x | x |
| Mellitz | Richard | Samtec | x | x |
| Neveux | Paul | Superior Essex | | x |
| Nicholl | Gary | Cisco | x | x |
| Nolan | John | QLogic | x | x |
| Ofelt | David | Juniper Networks | x | x |
| Pachon | Arturo | TE Connectivity | x | x |
| Palkert | Tom | Molex - MACOM | x | x |
| Parthasarathay | Vasudevan | Broadcom | x | |
| Pham | Phong | US Conec | x | x |
| Piehler | David | Dell EMC | x | x |
| Pozzebon | Dino | microsemi | x | x |
| Rabinovich | Rick | Keysight Technologies | x | x |
| Ran | Adee | Intel | x | x |
| Rotolo | Salvatore | ST Microelectronics | x | x |
| Rysin | Alexander | Mellanox | x | x |
| Sakai | Toshiaki | Socionext | x | x |

| | | | | |
|---|---|---|---|---|
| Sayre | Edward | Samtec | x | x |
| Sekel | Steve | Keysight Technologies | x | x |
| Slavick | Jeff | Broadcom Limited | x | x |
| Sommers | Scott | Molex | x | x |
| Stassar | Peter | Huawei | x | x |
| Sun | Phil | Credo | x | |
| Swanson | Steve | Corning | x | x |
| Takahara | Tomoo | Fujitsu Laboratories | x | x |
| Tamura | Kohichi | Oclaro | x | x |
| Tien | George | AOI | x | x |
| Tooyserkani | Pirooz | Cisco | x | x |
| Tracy | Nathan | TE Connectivity | x | x |
| Trowbridge | Steve | Nokia | x | x |
| Twombly | Jeff | Credo | x | |
| Ulrichs | Ed | Source Photonics | x | x |
| Vitali | Marco | Sicoya | x | x |
| Welch | Brian | Luxtera | x | x |
| White | Martin | Cavium | x | x |
| Willis | Paul | UNH-IOL | x | x |

| Yamamoto | Shuto | NTT | | x |
|----------|-------|-----|---|---|
| Young | Adrian | Leviton | x | x |
| Young | James | Commscope | x | x |
| Zambell | Andrew | Amphenol | x | |
| Zivny | Pavel | Tektronix | x | x |