

Approved Minutes  
IEEE 802.3bm 40 Gb/s and 100 Gb/s Fiber Optic Task Force  
Plenary meeting  
Nov 13-15, 2012  
San Antonio, TX

Prepared by: Kapil Shrikhande

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**Nov 13, 2012**

The meeting was called to order at 8:00 a.m. on Nov 13 2012. Kapil Shrikhande volunteered as Recording Secretary.

All meeting materials for the Nov 2012 San Antonio, TX plenary meeting can be found at:  
<http://www.ieee802.org/3/bm/public/nov12/index.html>

Agenda and General Information presentation

By: Dan Dove, Chair

See: [http://www.ieee802.org/3/bm/public/nov12/dove\\_01b\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/dove_01b_1112_optx.pdf) (this is a revised version)

The Chair asked if there was any opposition to approving the agenda for the meeting. The agenda was approved with no opposition.

The Chair asked if there was any opposition to approving the minutes from the September 2012 802.3bm Task Force interim meeting. The September minutes were approved with no opposition.

The Chair presented the Task Force decorum.

The Task Force was reminded that photographs or recordings are not allowed without permission.

The Chair asked if there were any reporters or if someone present might report on the activities of the meeting. Scott Kipp stated he may blog about the meeting for the Ethernet Alliance.

The Chair read the IEEE patent policy. The Chair made a call for potentially essential patents. No one responded to the call for patents.

The Proposed Timeline for the Task Force was presented for review. No questions received.

The Chair informed the Task Force that he had received a late presentation request from Piers Dawe, and wanted to know if there was any opposition to adding this to the Thursday schedule. There was no opposition from the room to adding this presentation to the Thursday schedule.

Round of introductions

Start of technical presentations

Presentation# 1

Title: SMF Ad Hoc report

By: Pete Anslow, Ciena

See: [http://www.ieee802.org/3/bm/public/nov12/anslow\\_01\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/anslow_01_1112_optx.pdf)

#### Presentation # 2

Title: Editor's report

By: Pete Anslow, Ciena

See: [http://www.ieee802.org/3/bm/public/nov12/anslow\\_02\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/anslow_02_1112_optx.pdf)

#### Presentation # 3

Title: MMF ad hoc report

By: Jonathan King, Finisar

See: [http://www.ieee802.org/3/bm/public/nov12/king\\_01a\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/king_01a_1112_optx.pdf)

#### Presentation # 4

Title: CAUI-4 ad hoc report

By: Dan Dove, APM presented for the author Ryan Latchman, Mindspeed

See: [http://www.ieee802.org/3/bm/public/nov12/latchman\\_01\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/latchman_01_1112_optx.pdf)

#### Presentation # 5

Title: 100GbE Optics Evolution

By: Mark Gustlin, Xilinx

See: [http://www.ieee802.org/3/bm/public/nov12/gustlin\\_01a\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/gustlin_01a_1112_optx.pdf)

#### Presentation # 6

Title: Low power 100G MMF PHY and Electrical Specs

By: Piers Dawe, Iptronics

See: [http://www.ieee802.org/3/bm/public/nov12/dawe\\_01a\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/dawe_01a_1112_optx.pdf)

Break at 10 a.m.

Reconvened at 10:15 a.m.

#### Presentation # 7

Title: Feasibility of Unretimed 100Gbase-SR4

By: Ali Ghiasi, Broadcom

See: [http://www.ieee802.org/3/bm/public/nov12/ghiasi\\_02\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/ghiasi_02_1112_optx.pdf)

#### Presentation # 8

Title: Analysis of Various Options for Multimode Fiber Links

By: Petar Pepeljugoski, IBM Research

See: [http://www.ieee802.org/3/bm/public/nov12/pepeljugoski\\_01\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/pepeljugoski_01_1112_optx.pdf)

#### Presentation # 9

Title: Link distance and server connectivity for 20m 100GbE Optics

By: Scott Kipp, Brocade

See: [http://www.ieee802.org/3/bm/public/nov12/kipp\\_01\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/kipp_01_1112_optx.pdf) (revised version uploaded post presentation)

#### Presentation # 10

Title: 100G SR4 100m & 20m Support

By: John Petrilla, Avago

See: [http://www.ieee802.org/3/bm/public/nov12/petrilla\\_02\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/petrilla_02_1112_optx.pdf)

Break at 12 p.m.

Reconvened at 1:15 p.m.

#### Presentation # 11

Title: Measurement and Estimation of the Mode Partition Coefficient k

By: Rick Pimpinella, Panduit

See: [http://www.ieee802.org/3/bm/public/nov12/pimpinella\\_01\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/pimpinella_01_1112_optx.pdf)

#### Presentation # 12

Title: FEC Latency Considerations

By: Andre Szczepanek, Inphi

See: [http://www.ieee802.org/3/bm/public/nov12/szczepanek\\_01\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/szczepanek_01_1112_optx.pdf)

#### Presentation # 13

Title: 100Gb/s SMF PMD Observations

By: Chris Cole, Finisar

See: [http://www.ieee802.org/3/bm/public/nov12/cole\\_01\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/cole_01_1112_optx.pdf)

#### Presentation # 14

Title: 100Gb/s SMF PMD Alternatives Analysis

By: Ilya Iyubomirsky, Finisar

See: [http://www.ieee802.org/3/bm/public/nov12/iyubomirsky\\_01a\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/iyubomirsky_01a_1112_optx.pdf)

Break at 3:05 p.m.

Reconvened at 3:30 p.m.

#### Presentation # 15

Title: PAM8 & FEC Options

By: Sudeep Bhoja, Inphi

See: [http://www.ieee802.org/3/bm/public/nov12/bhoja\\_01a\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/bhoja_01a_1112_optx.pdf) (revised version uploaded post presentation)

The Chair opened the floor for discussion, straw polls, or motions. Seeing none, the Chair decided to move ahead with technical presentations.

#### Presentation # 16

Title: Improved MPI "Upper Bound" Analysis

By: Arash Farhood, Cortina

See: [http://www.ieee802.org/3/bm/public/nov12/farhood\\_01\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/farhood_01_1112_optx.pdf)

#### Presentation # 17

Title: Investigation of PAM-4/6/8 Signaling and FEC for 100 Gb/s Serial Transmission

Co-presented by: Ali Ghiasi & Zhongfeng Wang

See: [http://www.ieee802.org/3/bm/public/nov12/ghiasi\\_01a\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/ghiasi_01a_1112_optx.pdf) (revised version uploaded post presentation)

#### Presentation # 18

Title: WDM C-Band Channel Plan for 100G nR4

By: Arlon Martin, Kotura

See: [http://www.ieee802.org/3/bm/public/nov12/martin\\_01\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/martin_01_1112_optx.pdf)

The Chair reopened the floor for discussion, straw polls, or motions. There were none. The Chair scheduled the start time for Nov 14 at 9 am, and recessed for the day.

### **Nov 14, 2012**

The meeting resumed at 9 a.m. The Chair noted that the agenda deck was updated and available on the meeting web-page.

The Chair presented the agenda for the day, Task Force decorum and ground rules. The Chair made the call for potentially essential patents. Nobody responded to the call. Nobody responded to the request to announce if they were reporting publicly at the meeting.

Round of introductions

#### Presentation # 19

Title: 100 Gb/s Duplex Interconnects using Moderate PAM-N signaling

By: Brian Welch, Luxtera

See: [http://www.ieee802.org/3/bm/public/nov12/welch\\_01\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/welch_01_1112_optx.pdf) (revised version uploaded post presentation)

#### Presentation # 20

Title: Proposal for 4-channel WDM (WDM4) for intermediate reach 100GbE SMF PMD

By: Yurii Vlasov, IBM

See: [http://www.ieee802.org/3/bm/public/nov12/vlasov\\_01a\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/vlasov_01a_1112_optx.pdf)

#### Presentation # 21

Title: Implementation tradeoffs for WDM4 PMD in relation to cost

By: Douglas Gill, IBM

See: [http://www.ieee802.org/3/bm/public/nov12/gill\\_01b\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/gill_01b_1112_optx.pdf)

#### Presentation # 22

Title: Basic Study about Bandwidth Requirement for Discrete Multi-tone Modulation

By: Toshiki Tanaka, Fujitsu Laboratories

See: [http://www.ieee802.org/3/bm/public/nov12/tanaka\\_01a\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/tanaka_01a_1112_optx.pdf)

#### Presentation # 23

Title: Network architecture growth path using PSM4

By: Tom Palkert, Luxtera

See: [http://www.ieee802.org/3/bm/public/nov12/palkert\\_01\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/palkert_01_1112_optx.pdf)

Recessed for lunch at 12 p.m.

Reconvened at 1:15 p.m.

Presentation # 24

Title: 100G PSM4 Link Model and Results

By: John Petrilla, Avago Technologies

See: [http://www.ieee802.org/3/bm/public/nov12/petrilla\\_01\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/petrilla_01_1112_optx.pdf)

Presentation # 25

Title: 100GBASE-PSM4 Optical Budget Baseline Consensus Proposal

By: Jon Anderson, Oclaro

See: [http://www.ieee802.org/3/bm/public/nov12/anderson\\_01a\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/anderson_01a_1112_optx.pdf)

Presentation # 26

Title: CAUI-4 Chip to Chip and Chip to Module Applications

By: Ali Ghiasi, Broadcom

See: [http://www.ieee802.org/3/bm/public/nov12/ghiasi\\_03\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/ghiasi_03_1112_optx.pdf)

Presentation # 27

Title: CAUI-4 Chip – Module Draft Baseline

By: Mike Li, Altera

See: [http://www.ieee802.org/3/bm/public/nov12/latchman\\_02\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/latchman_02_1112_optx.pdf)

Break at 3 p.m.

Reconvened at 3:15 p.m.

Presentation # 28

Title: CAUI4 electrical, signaling and jitter test proposal

By: Tom Palkert, Xilinx

See: [http://www.ieee802.org/3/bm/public/nov12/palkert\\_03a\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/palkert_03a_1112_optx.pdf) (revised version uploaded post presentation)

Presentation # 29

Title: CAUI-4 Chip – Chip Spec Discussion

By: Mike Li, Altera

See: [http://www.ieee802.org/3/bm/public/nov12/latchman\\_03\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/latchman_03_1112_optx.pdf)

Presentation # 30

Title: CAUI-4 Chip – Chip Spec Discussion

By: Tom Palkert, Xilinx

See: [http://www.ieee802.org/3/bm/public/nov12/palkert\\_02\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/palkert_02_1112_optx.pdf)

Late submission from Piers Dawe presented next.

Presentation # 31

Title: Layer Diagrams with FEC and CAUI-4

By: Piers Dawe, Iptronics

See: [http://www.ieee802.org/3/bm/public/nov12/dawe\\_02\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/dawe_02_1112_optx.pdf)

The Chair informed the Task Force that he has received two more late requests for presentations, one from Brad Both, and the other from Petar Pepeljugoski. The Chair asked if there was any opposition to adding these presentations to the schedule. There was no opposition.

Presentation # 32

Title: Is MPI New To 802.3

By: Petar Pepeljugoski, IBM research

See: [http://www.ieee802.org/3/bm/public/nov12/pepeljugoski\\_02\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/pepeljugoski_02_1112_optx.pdf)

The remaining technical presentations will be covered on Thursday morning. The floor was opened for discussion, straw polls and motions.

Straw Poll # 1

I support adopting the proposal in slides 3 to 11 of latchman\_02\_1112\_optx as the baseline for “a re-timed 4-lane 100G PMA to PMA electrical interface for chip to module applications”

Yes: 24

No: 15

Abstain: 28

Straw Poll # 2

I support adopting the proposal in slides 3 to 11 of latchman\_02\_1112\_optx *with the modification of TBD for all jitter and eye height specifications* as the baseline for “a re-timed 4-lane 100G PMA to PMA electrical interface for chip to module applications”

Yes: 34

No: 4

Abstain: 25

Motion # 1

Move to adopt the proposal in slides 3 to 11 of latchman\_02\_1112\_optx with the modification of TBD for jitter, eye height and BER specifications as the baseline for “a re-timed 4-lane 100G PMA to PMA electrical interface for chip to module applications”

Mover: Tom Palkert Seconded: Chris Cole

Technical  $\geq$  75%

Yes: 45 No: 1 Abstain: 21

Passes

The Chair offered and received no requests for more polls and motions, the meeting was recessed until 8:30 Nov 15<sup>th</sup>

**Nov 15, 2012**

The meeting resumed at 8:30 a.m. The Chair presented the agenda for the day, Task Force decorum and ground rules. There is no one reporting publicly at the meeting. The Chair made the call for potentially essential patents. Nobody responded to the call.

The presentation order was changed to accommodate for the availability of remaining speakers.

### Presentation # 33

Title: Short Reach 100G Optics for Data Center Racks

By: Brad Booth, Dell

See: [http://www.ieee802.org/3/bm/public/nov12/booth\\_01\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/booth_01_1112_optx.pdf)

### Presentation # 34

Title: Energy Efficient Ethernet (EEE) for 40 Gb/s and 100 Gb/s optical interfaces

By: Gary Nicholl, Cisco

See: [http://www.ieee802.org/3/bm/public/nov12/nicholl\\_01a\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/nicholl_01a_1112_optx.pdf) (revised version uploaded post presentation)

### Presentation # 35

Title: VSR Compliance Board Specification Range

By: Mike Dudek, Qlogic

See: [http://www.ieee802.org/3/bj/public/nov12/dudek\\_3bj\\_02\\_1112.pdf](http://www.ieee802.org/3/bj/public/nov12/dudek_3bj_02_1112.pdf)

### Presentation # 36

Title: EEE Modifications

By: Steve Trowbridge, Alcatel-Lucent

See: [http://www.ieee802.org/3/bm/public/nov12/trowbridge\\_01\\_1112\\_optx.pdf](http://www.ieee802.org/3/bm/public/nov12/trowbridge_01_1112_optx.pdf)

End of technical presentations

The Chair opened the floor for motions and discussions

### Motion #2

Adopt the following objective:

Specify optional Energy Efficient Ethernet (EEE) for 40 Gb/s and 100 Gb/s operation over fiber optic cables.

Mover: Gary Nicholl    Seconded: Mike Bennett

Technical  $\geq$  75%

Yes: 47 No: 0    Abstain: 9

Note: during the discussion after Motion # 2 was moved, a motion to amend Motion # 2 was made (see Motion # 3 below).

### Motion # 3: motion to amend Motion #2

Adopt the following objective:

Specify optional Energy Efficient Ethernet (EEE) for 40 Gb/s and 100 Gb/s operation over fiber optic cables without disabling the optical transmitter.

Mover: John Petrilla    Seconded: Jonathan King

Technical  $\geq$  75%

Yes: 7    No: 41    Abstain: 27

Fails

After Motion # 3 was voted upon and had failed, the group took a break and returned to discussion of Motion # 2 and then took the vote.

#### Motion #4

Move to approve changes to the 5 Criteria responses as noted on page 8 (Broad Market Potential), page 9 (Compatibility), and page 10 (Distinct Identity) of bennett\_01\_0912\_optx.pdf

Mover: Mike Bennett    Seconded: Jeff Maki

Technical  $\geq$  75%

Yes: 46    No: 0    Abstain: 9

Passes

#### Motion #5

Move to approve the change to the project scope as shown on page 7 of bennett\_01\_0912\_optx.pdf

Mover: Mike Bennett    Seconded: Pete Anslow

Technical  $\geq$  75%

Yes: 48    No: 0    Abstain: 5

Passes

#### Motion #6

Move that the Task Force: Submit the amended project documentation to the 802.3 Working Group for approval. Request that the 802.3 Working Group chair submit the amended PAR and 5 criteria responses to the 802 Executive Committee for consideration at the March 2013 Plenary Session.

Mover: Dan Dove    Seconded: Pete Anslow

Technical  $\geq$  75%

Yes: 56    No: 0    Abstain: 2

Passes

The Chair presented to the group the Proposed Informal Communication(IC) Response to the OIF liaison, and indicated that he would be making a motion to get approval from the Task Force for submission to the OIF. The proposed IC is at [http://www.ieee802.org/3/bm/public/nov12/IC\\_802\\_3bm\\_oif\\_1112.pdf](http://www.ieee802.org/3/bm/public/nov12/IC_802_3bm_oif_1112.pdf)

#### Motion #7

Move that the Task Force: Approve the Informal Communication (IC\_802\_3bm\_oif\_1112) for submission to OIF

Mover: Dan Dove    Seconded: Steve Trowbridge

Procedural > 50%

Passes by voice without opposition

There were a few straw poll requests that had been received.

#### Straw Poll # 3

I would NOT support a baseline proposal for a SMF PMD based on:

- a) CWDM
- b) C-BAND
- c) DMT
- d) PSM4
- e) PAMn
- f) Would not rule any of the above out

Chicago Rules

a: 28 b:30 c:17 d:26 e:21 f:12



Room count: 89

Straw Poll # 4

I would support a baseline proposal for a SMF PMD based on:

- a) CWDM
- b) C-BAND
- c) DMT
- d) PSM4
- e) PAMn
- f) none of the above - rely on LR4 with CAUI-4.

Chicago Rules

a: 2 b: 10 c: 16 d: 14 e: 21 f: 25

Straw Poll # 5

I would only support a baseline proposal for a SMF PMD based on:

- a) CWDM
- b) C-BAND
- c) DMT
- d) PSM4
- e) PAMn
- f) none of the above - rely on LR4 with CAUI-4.

a: 0 b: 1 c: 6 d: 14 e: 14 f: 23

There were no more straw polls or motions from the floor.

The Chair provided closing comments and reviewed the upcoming meetings slide from the agenda deck.

Meeting was adjourned at 12 p.m.

**IEEE 802.3bm November 2012 Plenary meeting attendance list**

<b>Last Name</b>	<b>First Name</b>	<b>Affiliation</b>	<b>13-Nov</b>	<b>14-Nov</b>	<b>15-Nov</b>
Abbas	Ghani	Ericsson	√	√	√
Abbott	John	Corning Inc	√	√	√
Anderson	Jon	Oclaro	√	√	√
Anslow	Pete	Ciena	√	√	√
Barrass	Hugh	Cisco			√
Bates	Stephen	PMC-Sierra	√	√	√
Beaudoin	Devis	Texas Instruments			√
Ben-Artzi	Lian	Marvell	√		√
Bergey	Chris	Luxtera	√	√	√
Bernstein	Gary	Leviton	√	√	
Bhatt	Vipul	Cisco	√	√	√
Bhoja	Sudeep	Inphi	√	√	√
Bliss	Will	Broadcom			√
Braun	Ralf-Peter	Deutsche Telekom	√	√	
Breuer	Dirk	Deutsche Telekom	√	√	
Brown	Dave	Semtech	√	√	
Cady	Ed	Volex		√	
Carroll	Martin	Verizon	√	√	√
Chang	Xin	Huawei Tech	√	√	√
Cheng	Wheling	Juniper Networks	√	√	√
Cole	Chris	Finisar	√	√	
Cui	Kai	Huawei	√	√	√
Dawe	Piers	IPtronics	√	√	√
Edwards	Jack	DCS	√	√	√
Farhoodfar	Arash	Cortina Systems	√	√	√
Forbes	Harry	Nexans Inc			√
Ganga	Ilango	Intel	√	√	√
Garcia	Modesto	Texas Instruments	√	√	√
Ghiasi	Ali	Broadcom	√	√	√
Gill	Douglas	IBM	√	√	√
Goell	Jim	Nano Precision Products	√	√	
Gustlin	Mark	XILINX	√	√	√
Hall	Eric	Aurrion	√	√	
Hamano	Hiroshi	Fujitsu Labs	√	√	√
Horner	Rita	Synopsis			√
Irwin	Scott	Mosys	√	√	√
Isono	Hideki	Fujitsu Optical Components	√	√	√
Issenhuth	Tom	Microsoft	√	√	√

Jiang	Wenbin	Cosemi	√	√	√
Kang	Thekyu	ETRI	√	√	√
Kawatsu	Yasuaki	Hitachi Cable			√
King	Jonathan	Finisar	√	√	
Kipp	Scott	Brocade	√		√
Kish	Paul	Belden			√
Kolesar	Paul	Commscope	√	√	√
Kono	Masahi	Hitachi	√	√	√
Lackner	Hans	QosCom	√		
Larsen	Wayne	Commscope			√
LeCheminant	Greg	Agilent Technologies	√	√	
Lefevre	Kevin	Eigenlight	√	√	√
Lewis	Dave	JDSU	√	√	√
Li	Mike	Altera	√	√	√
Lingle	Robert	OFS	√		
Lutz	Sharon	US Conec Ltd	√	√	√
Lyubomirsky	Ilya	Finisar	√	√	
Maki	Jeffery	Juniper	√	√	√
Marris	Arthur	Cadence Design			√
Martin	Arlon	Kotura	√	√	√
Martinez	Joel	Altera	√	√	
McDermott	Tom	Fujitsu Labs	√	√	√
McDonough	John	NEC America	√	√	√
Misek	Brian	Avago	√	√	
Mohajeri	Hessam	Ensphere Solutions	√	√	√
Muth	Karl	Texas Instruments	√	√	√
Nagardi	Venkatesh	APM			√
Nakamoto	Ed	Spirent	√	√	√
Nelson	David	Intel	√		
Nicholl	Gary	Cisco	√		
Nishihara	Susumu	NTT	√	√	√
Nolan	John	Qlogic			√
Nordin	Ron	Panduit			√
Nowell	Mark	Cisco	√		
Ofelt	David	Juniper		√	√
Palkert	Tom	Xilinx, Molex, Luxtera	√	√	√
Pepeljugoski	Petar	IBM	√	√	√
Perrie	Randy	Onechip Photonics	√	√	√
Petrilla	John	Avago Technologies	√	√	√
Pilip	Mark	Ezchip	√	√	√
Pimpinella	Rick	Panduit Corp	√	√	

Rabinovich	Rick	Alcatel Lucent		√	
Seto	Koichiro	Hitachi Cable		√	√
Shang	Song	Semtech	√	√	√
Shrikhande	Kapil	Dell	√	√	√
Slavick	Jeff	Avago			√
Sparacin	Daniel	Aurion	√	√	
Sprague	Ted	Infinera	√	√	√
St Peter	Matthew	Radisys	√	√	√
Stassar	Peter	Huawei	√	√	√
Stevens	Daniel	Fujitsu Semiconductor Europe	√	√	
Swenson	Norman	Clariphy	√	√	√
Szczepanek	Andre	Inphi	√	√	√
Szeto	William	Xtera	√	√	√
Tajima	Akio	NEC Corporation		√	√
Tanaka	Toshiki	Fujitsu Laboratories	√	√	√
Tawa	Katsuhisa	Sumitomo Electric		√	√
Teipen	Brian	ADVA Optical	√	√	√
Theodoros	Jim	Adva Optical Networking	√	√	√
Trowbridge	Steve	Alcatel Lucent	√	√	√
Ulrichs	Ed	Sourcephotronics	√	√	√
Umnov	Alexander	Huawei			√
Vanderlaan	Paul	Nexans Inc			√
Vareljian	Albert	Independent	√	√	√
Vishwanath	Sriram	Agilux Systems, UT Austin	√	√	
Vlasov	Yuri	IBM	√	√	√
Warland	Tim	Applied Micro	√	√	
Way	Winston	Neophotonics	√	√	√
Welch	Brian	Luxtera		√	√
Wong	CK	FCI Mergeoptics	√	√	√
Xu	Yu	Huawei	√	√	√
Zhang	James	Qualcomm			√