Approved Minutes

IEEE 50 Gb/s over a Single Lane and Next Generation 100 Gb/s and 200 Gb/s Ethernet Study Group and 200 Gb/s Ethernet Single mode Fiber Study Group Joint Meeting

Plenary Meeting

March 16-17, 2016

Macau

Prepared by Kent Lusted

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{Note from the Recording Secretary: to simplify the note taking, the reader may see that the abbreviation "50GE" used for the original "50 Gb/s Ethernet over a Single Lane" Study Group or the abbreviation "NGOATH" used for the original "Next Generation 100 Gb/s and 200 Gb/s Ethernet" Study Group or the abbreviation 200GESMF used for the 200 Gb/s Ethernet Single mode Fiber Study Group *within the context of these meeting minutes}*

IEEE 50 Gb/s Ethernet over a Single Lane and Next Generation 100 Gb/s and 200 Gb/s Ethernet Study Group and 200 Gb/s Ethernet Single mode Fiber Study Group Joint Meeting – March 16, 2016:

Prepared by Kent Lusted

IEEE 50 Gb/s Ethernet over a Single Lane and Next Generation 100 Gb/s and 200 Gb/s Ethernet Study Group and 200 Gb/s Ethernet Single mode Fiber Study Group Joint meeting convened at 8:10 a.m., March 16, 2016, by Mark Nowell, IEEE 50G and NGOATH Study Group Chair.

Mark Nowell welcomed attendees.

Introductions were made.

Chair reviewed agenda in
http://www.ieee802.org/3/50G/public/Mar16/agenda_50GE_NGOATH_01c_0316.pdf

Motion #1:
Move to approve the agenda:

- Moved by: Mike Dudek
- Second by: Thananya Baldwin
- Passed by voice without opposition

Minutes were posted shortly after the meeting. An updated version of the minutes was posted to the website on March 7, 2016 based on editorial feedback received. Kent Lusted asked if anyone wanted to review the changes. No one responded.

Motion #2:
Move to approve the January 2016 interim minutes:

- Moved by: Thananya Baldwin
- Second by: Mike Dudek
- 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 noted that a single reflector is used for both Study Groups. Chair reviewed the ground rules for the meeting.

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

Chair reviewed the IEEE structure.

Chair reviewed the Bylaws and Rules slides in
http://www.ieee802.org/3/50G/public/Mar16/agenda_50GE_NGOATH_01c_0316.pdf

IEEE Patent Policy: Chair read the Guidelines for IEEE WG meetings. No one responded.

Chair reviewed the IEEE 802.3 Standards Process. Chair summarized the documentation necessary to progress to a Task Force. Chair noted some of the procedural challenges associated with operating the two Study Groups in parallel.

Chair reviewed the documents approved by the Study Group in January.

Chair noted that this is a joint study Group meeting.

Chair asked for a show of hands for participants only participating in the 50 Gb/s Ethernet over a Single Lane and Next Generation 100 Gb/s and 200 Gb/s Ethernet Study Group. No one indicated.

Chair asked for a show of hands for participants only participating in the 200 Gb/s Ethernet Single mode Fiber Study Group. No one indicated.

Chair reviewed the adopted objectives. Chair noted that the copper cable and backplane reach objectives are insufficient for Working Group approval.

Goals for the meeting:

- Review/Refine/Complete/Modify the set of objectives for the Study Groups
- Review feedback from other WGs on our documentation
- Review/Refine/Complete/Modify responses for the CSD (Criteria for Standards Development) as necessary
- Review/Refine/Complete/Modify Develop PAR and PAR modifications
- Review presentations substantiating the above

John D'Ambrosia noted that he plans to make a late contribution regarding 200 Gb/s Broad Market Potential. Chris Cole noted that he plans to make a late contribution regarding 200 Gb/s.

Chair asked if there was any opposition to the approach that in the joint 50G/NGOATH and 200GESMF Study Groups meeting, motions can be taken for decisions within either Study group's scope while in the joint session. There were no questions and no one indicated any opposition.

Chair noted that the Kareti presentation was split into two parts at the request of his supporters. This resulted in a late presentation but consists of only content from the original presentation.

Chair asked if there was opposition to hearing the late presentations from John D'Ambrosia, Chris Cole and Upen Kareti. No one responded.

Chair noted that the ad hoc meetings will continue to enable consensus building.

Future Meetings:

- May 2016 interim

    - Week of May 23, 2016 – Whistler, BC, Canada
- July 2016 Plenary
    - Week of July 24, 2016 – San Diego, CA, USA

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

50 Gb/s & NGOATH Study Group Ad-hoc report:
See http://www.ieee802.org/3/50G/public/Mar16/lusted_50GE_NGOATH_01_0316.pdf

- Kent Lusted noted that the joint ad hoc meetings will likely resume on March 30, 2016. Details will be announced over the reflector.

Presentation #1:
"50G/NGOATH Nomenclature", Kent Lusted
See: http://www.ieee802.org/3/50G/public/Mar16/lusted_50GE_NGOATH_01_0316.pdf

- Presenter proposed adopting only Arabic numerals for nomenclature for these projects instead on Roman numerals

Kent Lusted asked for an indication for support of the proposed nomenclature. Chair asked for a show of hands of participants in favor of using Arabic numerals. Chair asked for a show a hands of participants wishing to keep the Roman numerals. Chair ruled that there was significant majority of support to use Arabic numerals.

Presentation #2:
"50G and 100G Use Cases", Brad Booth
See: http://www.ieee802.org/3/50G/public/Mar16/booth_50GE_NGOATH_01a_0316.pdf

- Chair asked participants to focus on questions about the presentation and not pontificate at the microphone.
- Chair asked Brad Booth if he intends to take motions to add objectives. Brad indicated that he intends PMD-related motions
- Discussed need for 500m SMF
- There were questions on the perceived need of WDM2.
- Discussed that the link between the ASIC and FPGA on slide 7 could operate without FEC.

Presentation #3:
"200Gb/s Ethernet End User Comments", Chris Cole
See: http://www.ieee802.org/3/50G/public/Mar16/cole_50GE_NGOATH_01_0316.pdf

- Discussed the feedback from users quoted on slide 3.

Break at 10:33 a.m. Resume at 10:52 a.m.

Chair noted that PCS options and backward compatibility presentations may be deferred due to time constraints. The authors indicated they were alright with this.

Motion #3: 10:54 a.m.

- Move to request that the IEEE 802.3 Working Group request the extension of the 50 Gb/s Ethernet over a single lane and next generation 100 Gb/s and 200 Gb/s Ethernet Study Group
- M: Rich Mellitz
- S: John D'Ambrosia
- Y: 79 N: 0 A: 1
- Results: passes

Motion #4: 10:56 a.m.

Move to request that the IEEE 802.3 Working Group request the extension of the 200 Gb/s Ethernet Single-mode Fiber Study Group

- M: David Ofelt
- S: Steve Trowbridge
- Y: 78 N: 0 A: 2
- Results: passes

Presentation #4:

"Broad Market Potential for 200GbE", John D'Ambrosia
See: http://www.ieee802.org/3/50G/public/Mar16/dambrosia_50GE_NGOATH_01a_0316.pdf

- Clarifying questioned were asked and answered.
- Discussed that "200GbE x8" on slide 7 could implicate additional interfaces into the P802.3bs Task Force.
- Kent Lusted offered his support to the presentation.

Presentation #5:

"Thoughts on 200 GbE", Gary Nicholl
See: http://www.ieee802.org/3/50G/public/Mar16/nicholl_50GE_NGOATH_01a_0316.pdf

- Clarifying questions were asked and answered.
- A question was asked if the presentation distinguished between 200G copper interfaces and 200G optical interfaces. The author noted that he did thinks they address different markets and may have different timelines.

Break at 12:13 p.m. Resume at 1:02 p.m.

Chair noted that the Study Group received feedback on the proposed PARs. The Study Group must provide responses to the feedback by 6:30 p.m.

Chair reviewed the CSD responses adopted at the January 2015 interim meeting. Chair asked participants to review and confirm that the CSD responses support the current objectives and the potential new objectives expressed in the previous presentations.

Chair displayed the 50G/NGOATH Study Group CSD responses: (see http://www.ieee802.org/3/50G/public/Mar16/CSD_50G_NGOATH_01_0116.pdf) No feedback provided.

Chair displayed the 200G SMF Study Group CSD responses: (see http://www.ieee802.org/3/50G/public/Mar16/NGAOTH_802d3bs_CSD_modification_0116.pdf) Chair noted that the red text indicates the changes to the existing P802.3bs CSD responses. No feedback provided.

Chair reviewed the feedback received from the IEEE 802 community on the PARs for the two Study Groups. A consequence of the feedback received is a change to each PAR to specify the media types. Chair reviewed the proposed changes to the P802.3cd PAR and the P802.3bs PAR modification. Chair asked if there were concerns with the proposed changes. There was a request to remove "copper" from the P802.3bs PAR modification. There was a request to change "electrical" to "copper" in the P802.3cd PAR. Discussed potential wording changes to the P802.3cd PAR scope text to minimize scope overlap with the P802.3bs PAR.

Presentation #6:
"Considerations for 50 Gbps Backplane and Direct attached Cable Channels", Upen Reddy Kareti
See: http://www.ieee802.org/3/50G/public/Mar16/kareti_50GE_NGOATH_01b_0316.pdf

- There was concern that the data presented on page 8 represented one sample. The author confirmed that one to three samples of each were tested, and were tested several times.
- Discussed the impact of larger packages on the COM margin.

Presentation #7:
"Proposal for 50 Gbps per lane Backplane and Direct attached Cable Objectives", Upen Reddy Kareti
See: http://www.ieee802.org/3/50G/public/Mar16/kareti_50GE_NGOATH_02_0316.pdf

- Clarifying questions were asked and answered

Motion #5: 2:46 p.m.

- Move to modify the text in the P802.3cd PAR in Section 5.2b "Scope of the Project" to:
  - Define Ethernet Media Access Control (MAC) parameters, Physical Layer specifications, and management parameters for the transfer of Ethernet format frames at 50 Gb/s over copper and optical media. Define additional Physical Layer specifications and management parameters at 100 Gb/s over copper and optical media. Define additional Physical Layer specifications and management parameters at 200 Gb/s over copper and multimode fiber physical media.
- M: Adee Ran
- S: Tom Palkert
- Technical (>=75%)
- Y: 90 N: 0 A: 2

- Results: Passes 2:48 p.m.

Motion #6: 2:48 p.m.

- Move to modify the text in the P802.3bs PAR modification in Section 5.2b “Scope of the Project” to:
  - Define Ethernet Media Access Control (MAC) parameters, physical layer specifications, and management parameters for the transfer of Ethernet format frames at 200 Gb/s over single-mode fiber and 400 Gb/s over optical physical media.
- M: Steve Trowbridge
- S: Rich Mellitz
- Technical (>=75%)
- Y: 89 N:0 A: 2
- Results: passes 2:50 p.m.

Presentation #8:

“30dB Copper Channel: Maximum Loss Consideration”, Rich Mellitz
See: http://www.ieee802.org/3/50G/public/Mar16/mellitz_50GE_NGOATH_01_0316.pdf

- Clarifying questions were asked and answered.

Break at 3:00 p.m. Resume at 3:22 p.m.

Presentation #9:

“CEI-56G-LR-PAM4 Efforts for IEEE 802.3 50G Backplane”, Mike Peng Li
See: http://www.ieee802.org/3/50G/public/Mar16/li_50GE_NGOATH_01a_0316.pdf

- Clarifying questions were asked and answered.

Presentation #10:

“Feasibility 50 Gb/s PAM4 on 30 dB channels”, Ali Ghiasi
See: http://www.ieee802.org/3/50G/public/Mar16/ghiasi_50GE_NGOATH_01a_0316.pdf

- Updated presentation with ‘01a’ with additional supporters
- Discussed the potential improvements in COM.
- Discussed the return loss impact of a larger package size.

Presentation #11:

“IEEE 802.3 NGOATH SG Twinaxial Cu Cable Assembly Objective”, Chris Diminico
See: http://www.ieee802.org/3/50G/public/Mar16/diminico_50GE_NGOATH_01a_0316.pdf

- Clarifying questions were asked and answered

Motion #7: 4:22 p.m.

Move to adopt the modified objectives for the copper twin-axial cable per kareti_50GE_NGOATH_02_0316.pdf (slide 3)

- M: Upen Reddy Kareti
- S: Mike Dudek
- Technical (>=75%),

Motion #8: 4:29 p.m.

Move to amend motion #7 to read:

  - Move to adopt the modified objectives for the copper twin-axial cable per kareti_50GE_NGOATH_02_0316.pdf (slide 3) with the exception that 2m replaces 3m for each rate

- M: Piers Dawe
- S: Rich Mellitz

Motion #8 was withdrawn at 4:34 p.m.

Motion 7 (unmodified)

Move to adopt the modified objectives for the copper twin-axial cable per kareti_50GE_NGOATH_02_0316.pdf (slide 3)

- M: Upen Reddy Kareti
- S: Mike Dudek
- Technical (>=75%),
- Y: 74 N: 0 A: 20
- Results: passes 4:36 p.m.

Motion #9: 4:36 p.m.

Move to adopt the modified objectives for the circuit board backplane per kareti_50GE_NGOATH_02_0316.pdf (slide 3)

- M: Upen Reddy Kareti
- S: Mike Dudek

Motion #10: 4:50 p.m.

Move to amend motion #9 to read:

  - Move to adopt the modified objectives for the circuit board backplane per kareti_50GE_NGOATH_02_0316.pdf (slide 3) except that the number 30dB is replaced with 28dB

- M: Adee Ran
- S: Liav Ben-Artsi
- Technical (>=75%),
- Y: 21 N: 30 A: 36
- Results: fails 5:00 p.m.

Motion #9: (unmodified)

Move to adopt the modified objectives for the circuit board backplane per kareti_50GE_NGOATH_02_0316.pdf (slide 3)

- M: Upen Reddy Kareti
- S: Mike Dudek

- Technical (>=75%),
- Y: 47 N: 10 A: 32
- Results: passes 5:02 p.m.

Chair outlined the plans for Thursday: finish presentations, take straw polls and motions.

Presentation #12:
"In Support of a 500m Objective for 200G Ethernet: Part I (Technical and Economic Feasibility)", Brian Welch
See: http://www.ieee802.org/3/50G/public/Mar16/welch_50GE_NGOATH_02b_0316.pdf

- Clarifying questions were asked and answered

Chair outlined the plans for Thursday: finish presentations, take straw polls and motions.

Presentation #13:
"In Support of a 500m Objective for 200G Ethernet: Part 2 (Broad Market Potential, Distinct Identity, and Compatibility)", Brian Welch
See: http://www.ieee802.org/3/50G/public/Mar16/welch_50GE_NGOATH_03b_0316.pdf

- Clarifying questions were asked and answered.

Attendance Straw Polls:

I will attend the IEEE 50GE and NGOATH SG meetings at the May interim in Whistler, BC, Canada (week of May 23, 2016)

Y: 44 , Maybe: 23

I will attend the IEEE P802.3bs meetings at the May interim in Whistler, BC, Canada (week of May 23, 2016)

Y: 38, Maybe: 21

Break at 5:44 p.m.

IEEE 50 Gb/s Ethernet over a Single Lane and Next Generation 100 Gb/s and 200 Gb/s Ethernet Study Group and 200 Gb/s Ethernet Single mode Fiber Study Group Joint Meeting – March 17, 2016:

Prepared by Kent Lusted

IEEE 50 Gb/s Ethernet over a Single Lane and Next Generation 100 Gb/s and 200 Gb/s Ethernet Study Group Group and 200 Gb/s Ethernet Single mode Fiber Study Group Joint meeting convened at 8:10 a.m., March 17, 2016, by Mark Nowell, IEEE 50G/NGOATH and 200GESMF Study Group Chair.

Chair reviewed the plans for the day. Chair displayed the agenda presentation: http://www.ieee802.org/3/50G/public/Mar16/agenda_50GE_NGOATH_01c_0316.pdf

There was a late contribution from Brad Booth. Chair asked if there was objection to hearing the late presentation. No one responded.

Chair noted the scheduled presentations from Tongtong Wang, Ali Ghiasi, and Rob Stone may not be heard due to time constraints. If this happened, these presentations would be reviewed at an upcoming ad hoc meeting. There was no objection from the presenters.

John D'Ambrosia noted that the P802.3bs Task Force will meet immediately after the end of the Study Group meeting.

Motion 11:
Move to include "four lane" in the 200 Gb/s copper twin-axial cables, printed circuit board backplane, and MMF objectives

- M: Kent Lusted
- S: Tom Palkert
- Technical (>=75%),
- Y: N: A:

Motion #11 was withdrawn at 8:20 a.m.

Presentation #14:
"200G-PSM4: Potential Specifications", Brian Welch
See: http://www.ieee802.org/3/50G/public/Mar16/welch_50GE_NGOATH_01a_0316.pdf

- Clarifying questions were asked and answered.

Motion #12: 8:28 a.m.
Move to adopt as an objective:

  - provide physical layer specifications which support 200 Gb/s operation over:
    - At least 500m of 4-lane parallel SMF

- M: Brian Welch
- S: Tom Palkert
- Technical (>=75%)
- Y: 44 N: 4 A: 28

- Results: passes 8:49 a.m.

During discussion on motion #12, Chair noted that his interpretation of the motion would put this objective in the group to go to the P802.3bs Task Force. Discussed the addition of “parallel single mode fibers” to the objective.

Presentation #15:
“200G CSD Modifications”, Brad Booth
See: http://www.ieee802.org/3/50G/public/Mar16/booth_50GE_NGOATH_02_0316.pdf

- Discussed proposed changes to the P802.3bs CSD.
- There was much discussion on the potential impact of 200G on 400G.

Straw poll #1:
I would support the proposed P802.3bs CSD modifications per booth_50GE_NGOATH_02_0316.pdf

- Yes: 6, No: 38, Abstain: 33

Motion #13: 9:36 a.m.
Move to adopt as an objective:

  - define a single lane 50 Gb/s PHY for operation over:
    - SMF with lengths up to at least 500 meters

- M: Brad Booth
- S: Chris Cole
- Technical (>=75%),
- All in the room: Y: 21 N: 16 A: 44
- Results: motion fails 9:52 a.m.

There was a request from Brad Booth for a company vote on motion #13. Mr. Law provided a background and noted that Study Group voting is by all in the room. Mr. Law noted that there is no company voting in IEEE 802.3. Mr. Law stated that with the indulgence of the Chair, a count (not a vote) could be taken similar to the CFI process. Chair announced that he will take the count like a CFI where a single company representative shall indicate. Chair asked that one person from each company stand and that the count will be taken only of those standing.

Indication of motion #13 by company affiliation: Y: 16, N: 14, A: 22 10:05 a.m.

Motion 14: 10:06 p.m.
Move to adopt as an objective:

  - define a two-lane 100 Gb/s PHY for operation over:
    - SMF with lengths up to at least 500m

- M: Brad Booth
- S:

- Fails for lack of a second 10:07 a.m.

Motion 15:
Move to modify the 100 Gb/s MMF PHY objective to read:
  - Define a two-lane 100 Gb/s PHY for operation over MMF with lengths up to at least 100m
- M: Brad Booth
- S: Richard Mei
- Technical (>=75%)
- Y: 53 N: 0 A: 23
- Results: passes 10:16 a.m.

Chair reviewed the complete set of adopted objectives including the newly adopted objectives (see http://www.ieee802.org/3/50G/public/Mar16/objectives_50G_NGOATH_01_0316.pdf) and discussed the changes since the January 2016 interim meeting.

Chair noted that there are still 3 presentations remaining on the agenda. Chair asked for guidance from the Study Group on how to proceed with the 3 remaining presentations. Mark Gustlin indicated that he would defer the presentation to an ad hoc meeting. Tongtong Wang indicated that she would defer the presentation to an ad hoc meeting. Ali Ghiasi indicated that he would defer the presentation to an ad hoc meeting.

Break at 10:25 a.m. Resume at 10:49 a.m.

Motion #16:
Move to Adjourn:
- Moved by: Gerry Pepper
- Second by: Liav Ben-Artsi
- Passed by voice vote without opposition

Meeting ended at 10:50 a.m.

Attendees

50G/NGOATH & 200GE SMF Study Groups, March 2016			16-Mar-16	17-Mar-16
Last Name	**First Name**	**Affiliation**	**Wednesday**	**Thursday**
Abbott	Justin	Lumentum	x	x
Anslow	Pete	Ciena Corporation	x	x
Baldwin	Thananya	Ixia	x	x
Bar-Niv	Amir	Aquantia	x	x
Bazk	Tongtong	LGE	x	
Ben Artsi	Liav	Marvell Semiconductor	x	x
Bhatt	Vipul	Inphi	x	x
Booth	Brad	Microsoft	x	x
Bouda	Martin	Fujitsu	x	x
Braun	Ralf-Peter	Deutsche Telekom	x	x
Brown	Matt	Applied Micro	x	x
Butter	Adrian	Global Foundries	x	x
Caggioni	Francesco	APM	x	x
Casher	Patrick	Lorom	x	x
Chang	Daj-Chieh	Lorom	x	x
chang	Jacky	HPE	x	x
Chang	Xin	Huawei	x	x
Cheng	Weiying	Coriant	x	x
Choi	Hyun	Nvidia	x	x
Chuang	Keng Hua	HPE	x	x
Cole	Chris	Finisar	x	
D'Ambrosia	John	FutureWei, Subsidiary of Huawei	x	x
Dawe	Piers	Mellanox	x	x
DeBarnardinis	Fernando	Marvell Semiconductor	x	
Dillard	John	MicroSemi	x	x
DiMinico	Christopher	MC Communications/Panduit	x	x
Donahue	Curtis	UNH-IOL	x	
Dudek	Mike	QLogic	x	x
Estes	Dave	Spirent Communications	x	
Farjad	Ramin	Aquantia	x	
Fife	James	eTopus Technology	x	x
Filip	Jan	Maxim Integrated Products Inc.	x	
Flatman	Alan	LAN Technologies	x	x
Ghiasi	Ali	Ghiasi Quantum	x	x
Gong	Zhigang	O-net	x	x
Gorshe	Steve	PMC Sierra	x	x
Gupta	Atul	MACOM	x	
Gustlin	Mark	Xilinx	x	x
Healey	Adam	Broadcom Limited	x	x
Hegde	Raj	Broadcom	x	x

50G/NGOATH & 200GE SMF Study Groups, March 2016			16-Mar-16	17-Mar-16
Last Name	**First Name**	**Affiliation**	**Wednesday**	**Thursday**
Helster	David	TE	x	
Hidaka	Yasuo	Fujitsu Laboratories of America	x	x
Huang	Xi	Huawei	x	x
Huang	Yifan	AFLI	x	x
Ingham	Jonathan	Foxconn Interconnect Technology	x	
Ishibe	Kazuhiko	Anristu	x	x
Isono	Hideki	Fujitsu Ltd.	x	x
Issenhuth	Tom	Microsoft	x	x
Jackson	Ken	Sumitomo	x	
Jones	Peter	Cisco	x	
Kang	Vincent	GUC	x	x
Kareti	Upen Reddy	Cisco	x	x
Kelsen	Michael	Time Warner Cable	x	x
Kim	Jin-Woo	LGE	x	x
Kim	Yong	Broadcom	x	
Kimber	Mark	Semtech	x	x
Klempa	Mike	UNH-IOL	x	x
Ko	Woo-suk	LGE	x	
Kuo	Sarching	AOI	x	x
Lapak	Jeff	UNH-IOL	x	x
LeCheminant	Greg	Keysight Technologies	x	
Lee	Bernard	Seiko Advanced Components	x	x
Lewis	Dave	Lumentum	x	x
Li	Cao	Accelink	x	
Li	Mike	Altera	x	x
Li	Shaohua	Brocade	x	x
Liang	Hsiao-Pin	Lorom	x	x
Lim	Jane	Cisco	x	x
Liu	Cheng-Ting	Lorom	x	x
Liu	Hai-Feng	Intel	x	x
Liu	Zhenyu	Credo Semiconductor	x	x
Lusted	Kent	Intel	x	x
Maki	Jeffery	Juniper Networks	x	
Marris	Arthur	Cadence	x	x
McDermott	Tom	Fujitsu		x
McDonough	John	NEC America	x	
Mei	Richard	Commscope	x	x
Mellitz	Richard	Intel	x	x
Muir	Ron	JAE	x	x
Nadolny	Jim	Samtec	x	x
Nakamoto	Edward	Spirent Communications	x	

50G/NGOATH & 200GE SMF Study Groups, March 2016			16-Mar-16	17-Mar-16
Last Name	**First Name**	**Affiliation**	**Wednesday**	**Thursday**
Nicholl	Gary	Cisco	x	x
Nowell	Mark	Cisco	x	x
Ofelt	David	Juniper Networks	x	x
Palkert	Tom	Luxtera - Molex - MoSys	x	x
Parthasarathay	Vasudevan	Broadcom	x	x
Pepper	Gerald	Ixia		x
Qiwen	Zhongfeng	Huawei	x	x
Rabinovich	Rick	IXIA	x	x
Ran	Adee	Intel	x	x
Regev	Alexandre	Mellanox	x	x
Rotolo	Salvatore	ST Microelectronics	x	x
Sakai	Toshiaki	Socionext	x	x
Sasaki	Yasuo	Samtec	x	x
Sedarat	Hossein	Aquantia	x	
Sella	Omer	Mellanox	x	x
Shirani	Ramin	Aquantia	x	
Sommers	Scott	Molex	x	
Sone	Yoshiaki	NTT	x	
Srivastava	Atul	NTT Electronics	x	
Stassar	Peter	Huawei	x	x
Szczepanek	Andre	Inphi	x	x
Szeto	William	Xtera	x	x
Tailor	Bharat	Semtech Corp	x	x
Tamura	Kohichi	Oclaro	x	x
Tien	George	AOI	x	
Toyoda	Hidehiro	Hitachi	x	x
Trowbridge	Steve	Alcatel-Lucent	x	x
Ulrichs	Ed	Source Photonics	x	x
Valle	Stefano	ST Microelectronics	x	x
Wang	Eric	AOI	x	x
Wang	Roy	HPE	x	
Wang	Tongtong	Huawei	x	x
Wang	Xinyuan	Huawei	x	x
Welch	Brian	Luxtera	x	x
Wertheim	Oded	Mellanox	x	
Xu	Dayin	Rockwell Automation	x	
Xu	Yu	Huawei	x	x
Zhuang	Yan	Huawei	x	