Approved Minutes

IEEE P802.3bs 400 GbE Task Force

Plenary Meeting

Nov 4 - 6, 2014

San Antonio, TX, USA

Prepared by Kent Lusted and Steve Trowbridge

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IEEE P802.3bs 400GbE – 4 November 2014:

Prepared by Steve Trowbridge

IEEE P802.3bs 400 Gb/s Task Force interim meeting convened at 8:00 am, Monday, 4, November 2014, by John D'Ambrosia, IEEE P802.3bs Task Force Chair.

Chair appoints Steve Trowbridge as Task Force recording secretary for today's meeting.

Introductions were made.

Agenda & General Information
By – John D'Ambrosia
See -- http://www.ieee802.org/3/bs/public/14_11/agenda_3bs_01b_1114.pdf
Chair reviewed the agenda.

Motion #1:
Move to approve the agenda

- Moved by: Steve Trowbridge (Alcatel-Lucent)
- Second by: Paul Kolesar (Commscope)
- Pass by voice without opposition

One comment was received on the P802.3bs Sept Interim meeting minutes after they were posted from Peter Stassar, "Page 5, presentation #9 should be http://www.ieee802.org/3/bs/public/14_09/wang_t_3bs_01a_0914.pdf." This was corrected and updated minutes were posted.

Motion #2:
Move to approve the IEEE P802.3bs Sept 2014 Interim meeting minutes with posted corrections.

- Moved by: Pete Anslow (Ciena)
- Second by: Paul Kolesar (Commscope)
- Pass by voice without opposition

Chair reminds attendees to sign into the IEEE-SA Meeting Attendance Tool and to sign book. Update affiliation, if necessary.

Photography and recording not permitted without permission.

Called for members of the press. John D'Ambrosia noted that he talks with press but will only disclose high level details available from published meeting material. No one else responded.

Chair continued with the introductory presentation.

Goals:

- Hear Technical Proposals and supporting presentations
- Identify Steps Moving Forward
- Address Multiple Technical Key Issues
    - Architecture
    - FEC
    - Electrical Interface: 8x50
    - MMF PMD
    - SMF PMDs
    - # of wavelengths and effective rate per lambda
    - Modulation schemes
    - Commonality between PMDs?

Chair reminds attendees to sign into the IEEE-SA Meeting Attendance Tool and to sign book. Update affiliation, if necessary.

Chair displays the Bylaws and Rules slides in
http://www.ieee802.org/3/bs/public/14_09/agenda_3bs_01b_1114.pdf

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-SA 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, neither 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 ground rules.

Chair reviewed the IEEE 802.3 Standards process. The November Plenary is the last task force meeting to present new proposals to meet the adopted timeline.

Chair displayed links to the adopted objectives, PAR, CSD and timeline.

Chair received a communication from OIF regarding the CEI-56G project. (posted at http://www.ieee802.org/3/bs/public/14_11/OIF_Liaison_CEI56G_Progress_28Oct14.pdf)
Chair received a communication from CDFP MSA (posted at http://www.ieee802.org/3/bs/public/14_11/41031_Letter_to_IEEE.pdf).

It was agreed to defer responding to these letters until the Jan 15 Interim.

Chair showed links to ad hoc reports. Chair asked if there were any questions.

Chair received updated presentations with new data from Peter Stassar, Beck Mason, Mizuki Shirao, Winston Way, and Haoli Qian. Chair asked if anyone objected to including these presentations. No one responded.

Chair noted that per request from Riu Hirai that the hirai_3bs_02a 2km PMD proposal was being merged with mason_3bs_01 and the 10km proposal was being withdrawn.

Chair noted that he will be strictly enforcing allotted times on presentations and Q&A. Q&A will be limited to questions of clarification. Chair thanked everyone for their understanding and support on this matter.

Chair reviewed the plans for the week.

The chair announced that he didn't plan to try to respond to the incoming liaison statements from the OIF and CDFP MSA from this meeting. Note that the 1Q OIF meeting is the week after the January 2015 IEEE 802.3 interim.

The ad hoc reports are posted on the web and need not be presented.

Presentation #1:
Title: FEC performance on multi-part links
By: Pete Anslow (Ciena)
See: http://www.ieee802.org/3/bs/public/14_11/anslow_3bs_02_1114.pdf
Clarifying questions were asked and answered.

Presentation #2:
Title: 400G MMF 100m reach objective draft baseline proposal
By: Jonathan King (Finisar)
See: http://www.ieee802.org/3/bs/public/14_11/king_3bs_02a_1114.pdf
Clarifying questions were asked and answered.

Presentation #3:
Title: 400Gb/s 2km & 10km duplex SMF NRZ PMD Nominal Specifications
By: Chris Cole (Finisar)
See: http://www.ieee802.org/3/bs/public/14_11/cole_3bs_01a_1114.pdf
Clarifying questions were asked and answered.
There was no objection to Chris presenting version 01a which includes some clarifications. An additional update will be posted to add units.

Presentation #4:
Title: 400Gb/s 2km & 10km duplex SMF PAM-4 PMD Nominal Specifications
By: Chris Cole (Finisar)
See: http://www.ieee802.org/3/bs/public/14_11/cole_3bs_02a_1114.pdf
Clarifying questions were asked and answered.
Similar corrections will be made to the units, plus clarifying that the outer eye is described in the Tx characteristics and the inner eye in the Rx characteristics.

Presentation #5:
Title: 400Gb/s 500m PSM4 NRZ PMD Nominal Specifications
By: Chris Cole (Finisar)
See: http://www.ieee802.org/3/bs/public/14_11/cole_3bs_03a_1114.pdf
Clarifying questions were asked and answered.

Presentation #6:
Title: 400Gb/s 500m PSM4 PAM-4 PMD Nominal Specifications
By: Chris Cole (Finisar)
See: http://www.ieee802.org/3/bs/public/14_11/cole_3bs_04a_1114.pdf
Clarifying questions were asked and answered.
Chris will add the minimum transmitter bandwidth to all the presentations and will correct the units.

Presentation #7:
Title: Proposal of 8 x 50G NRZ specification for 400GbE 10km PMD
By: Mizuki Shirao (Mitsubishi)
See: http://www.ieee802.org/3/bs/public/14_11/shirao_3bs_01_1114.pdf
Clarifying questions were asked and answered.

Presentation #8:
Title: Proposal of 8 x 50G NRZ specification for 400GbE 2km PMD
By: Mizuki Shirao (Mitsubishi)
See: http://www.ieee802.org/3/bs/public/14_11/shirao_3bs_02_1114.pdf
Clarifying questions were asked and answered.

Coffee break at 9:57am. Resumed at 10:17am.

Presentation #9:
Title: Proposal for 400GE Optical PMDs for SMF Objectives based on 4 x 100G DMT
By: David Lewis (JDSU)
See: http://www.ieee802.org/3/bs/public/14_11/lewis_3bs_01a_1114.pdf
Clarifying questions were asked and answered.

Presentation #10:
Title: 400 GbE draft proposal for 10km based on 4 x 100G DMT
By: Tomoo Takahara (Fujitsu)
See: http://www.ieee802.org/3/bs/public/14_11/takahara_3bs_01_1114.pdf
Clarifying questions were asked and answered.

Presentation #11:
Title: A proposal for the 500m objective using 100 Gbps per lane Signaling
By: Brian Welch (Luxtera)
See: http://www.ieee802.org/3/bs/public/14_11/welch_3bs_01b_1114.pdf
Clarifying questions were asked and answered.
Paul Kolesar (Commscope) clarified the difference in loss given how the fibers are terminated for PSM4 in response to questions.

Presentation #12:
Title: Proposal for 400GE Optical PMD for 2km SMF Objective based on 4 x 100G PAM4
By: Beck Mason (JDSU)
See: http://www.ieee802.org/3/bs/public/14_11/mason_3bs_01a_1114.pdf
Clarifying questions were asked and answered.

Presentation #13:
Title: Baseline for 400GE 2km and 10km SMF PMD
By: Riu Hirai (Hitachi)
See: http://www.ieee802.org/3/bs/public/14_11/hirai_3bs_02a_1114.pdf
Clarifying questions were asked and answered.

Presentation #14:
Title: Further information on PAM4 error performance and power budget considerations
By: Peter Stassar (Huawei)
See: http://www.ieee802.org/3/bs/public/14_11/stassar_3bs_01_1114.pdf
Clarifying questions were asked and answered.

Break for lunch at 11:48am.
Reconvene at 1:02pm.

Presentation #15:
Title: 56GBaud PAM4 Error Floor Analysis
By: Alan Tipper (Semtech)
See: http://www.ieee802.org/3/bs/public/14_11/tipper_3bs_01a_1114.pdf
Clarifying questions were asked and answered.

Presentation #16:
Title: Error Floor Investigation for both 56 and 112Gb/s PAM4 Signals
By: Winston Way (NeoPhotonics)
See: http://www.ieee802.org/3/bs/public/14_11/way_3bs_01a_1114.pdf
Clarifying questions were asked and answered.

Presentation #17:
Title: Improving the Performance of Advanced Modulation Scheme
By: Yoshiaki Sone (NTT)
See: http://www.ieee802.org/3/bs/public/14_11/sone_3bs_01_1114.pdf
Clarifying questions were asked and answered.

Presentation #18:
Title: Supplementary Information on Nyquist-PAM4
By: Riu Hirai (Hitachi)
See: http://www.ieee802.org/3/bs/public/14_11/hirai_3bs_01_1114.pdf
Clarifying questions were asked and answered.

Presentation #19:
Title: Analytic Estimation of MPI Penalty with supporting experimental measurements
By: Gary Nicholl (Cisco)
See: http://www.ieee802.org/3/bs/public/14_11/nicholl_3bs_01_1114.pdf
Clarifying questions were asked and answered.

Presentation #20:
Title: Does PAM-4 or NRZ require an intra-Baud clipping penalty?
By: Will Bliss (Broadcom)
See: http://www.ieee802.org/3/bs/public/14_11/bliss_3bs_01a_1114.pdf
Clarifying questions were asked and answered.

Coffee break at 3:04pm; resume at 3:26pm

Presentation #21:
Title: Demonstration of Optical 56Gbps NRZ for 400GbE PMD Using 56Gbps SerDes
By: Yangjing Wen (Huawei)
See: http://www.ieee802.org/3/bs/public/14_11/wen_3bs_01_1114.pdf
Clarifying questions were asked and answered.
The presenter was reminded to send the updated slides to the chair.

Presentation #22:
Title: Experimental Demonstration of 56Gbps NRZ for 400GbE 2km and 10km PMD Using 28Gbps Optical Transmitter and Rx EQ
By: Yangjing Wen (Huawei)
See: http://www.ieee802.org/3/bs/public/14_11/wen_3bs_02a_1114.pdf
Clarifying questions were asked and answered.

Presentation #23:
Title: Technical Discussion on 400GbE PMD for SMF Objectives
By: Toshiki Tanaka (Fujitsu)
See: http://www.ieee802.org/3/bs/public/14_11/tanaka_3bs_01_1114.pdf
Clarifying questions were asked and answered.

Presentation #24:
Title: 400GbE Architecture Baseline Proposal
By: Mark Gustlin (Xilinx)
See: http://www.ieee802.org/3/bs/public/14_11/gustlin_3bs_02a_1114.pdf
Clarifying questions were asked and answered.

Presentation #25:
Title: FEC Architecture Discussion
By: Gary Nicholl (Cisco)
See: http://www.ieee802.org/3/bs/public/14_11/dambrosia_3bs_01_1114.pdf
Clarifying questions were asked and answered.

Broke for the day at 5:30pm.

IEEE P802.3bs 400GbE – 5 November 2014:

Prepared by Kent Lusted

Resumed at 8:31 a.m. on 5 November 2014 by John D'Ambrosia, IEEE P802.3bs Task Force Chair.

Chair appointed Kent Lusted as the recording secretary. Chair thanked Steve Trowbridge for his service as recording secretary on Tuesday.

Chair displayed agenda slides:
http://www.ieee802.org/3/bs/public/14_09/agenda_3bs_01b_1114.pdf

Chair reminded participants to observe decorum rules during the day's discussion.

Chair reminds attendees to sign into the IEEE-SA Meeting Attendance Tool and sign the book. Update affiliation, if necessary.

Patent policy: Chair displayed the patent policy related slides in the agenda (http://www.ieee802.org/3/bs/public/14_09/agenda_3bs_01b_1114.pdf) . Chair asked if anyone is unfamiliar with the IEEE patent policy. No one responded. Chair called for potentially essential patents. No one responded.

Chair outlined the plans for Wednesday and Thursday; hear technical presentations and facilitate discussion.

Chair noted that he will be strictly enforcing allotted times on presentations and Q&A. Q&A will be limited to questions of clarification. Chair thanked everyone for their understanding and support on this matter.

Presentation #26:
Title: CDAUI-8 chip-to-module and chip-to-chip interfaces using PAM4
By: Adam Healey
See: http://www.ieee802.org/3/bs/public/14_11/healey_3bs_01a_1114.pdf
Adam Healey noted the editorial change on slide 10 to change the pJ/bit from variable "x" to "y" to prevent confusion with mW variable "x".
Clarifying questions were asked and answered.

Presentation #27:
Title: 400GbE PCS Options
By: Mark Gustlin
See: http://www.ieee802.org/3/bs/public/14_11/gustlin_3bs_03a_1114.pdf
Clarifying questions were asked and answered.

Presentation #28:
Title: 50 Gb/s Modulation Proposal
By: Joel Goergen
See: http://www.ieee802.org/3/bs/public/14_11/goergen_3bs_03a_1114.pdf
Clarifying questions were asked and answered.
Break at 9:47 a.m. Resume at 10:11 a.m.

Presentation #29:
Title: Baseline Proposal for CDAUI-8 Chip-to-Chip (c2c)
By: Mike Li
See: http://www.ieee802.org/3/bs/public/14_11/li_3bs_01a_1114.pdf
Action Item: Mike Li to send updated presentation with additional supporters.

Clarifying questions were asked and answered.

Presentation #30:
Title: Draft Baseline Proposal for CDAUI-8 Chip-to-Module (c2m) Electrical Interface
By: Dave Brown
See: http://www.ieee802.org/3/bs/public/14_11/brown_3bs_01_1114.pdf
Clarifying questions were asked and answered.

Presentation #31:
Title: Spanning SERDES Across Reaches - Finding the Best Modulation Approach
By: Joel Goergen
See: http://www.ieee802.org/3/bs/public/14_11/goergen_3bs_01a_1114.pdf
Clarifying questions were asked and answered.

Presentation #32:
Title: Proposal for LPPI
By: Joel Goergen
See: http://www.ieee802.org/3/bs/public/14_11/goergen_3bs_02_1114.pdf
Joel Goergen noted that “L” in the LPPI denotes 50.
Clarifying questions were asked and answered.

Presentation #33:
Title: 50G PAM4 Serdes Performance on a Medium Reach Chip-to-Chip Channel
By: Vivek Telang on behalf of the authors
See: http://www.ieee802.org/3/bs/public/14_11/valliappan_3bs_01a_1114.pdf
Action Item: Vivek Telang to send updated presentation with additional supporters.
Clarifying questions were asked and answered.

Presentation #34:
Title: 56G NRZ Channel Measurement Data
By: Haoli Qian
See: http://www.ieee802.org/3/bs/public/14_11/qian_3bs_01d_1114.pdf
Action Item: Haoli Qian to send updated presentation with S-parameter corrections.
Clarifying questions were asked and answered.

Presentation #35:
Title: NRZ vs PAM-4 Re-Timer Power Comparison for 56Gb/s C2M and C2EO Electrical Channels
By: Dave Brown
See: http://www.ieee802.org/3/bs/public/14_11/brown_3bs_02_1114.pdf
Clarifying questions were asked and answered.

Break for lunch at 11:55 a.m. Resume at 1:13 p.m.

Presentation #36:
Title: 52Gb/s Chip to Module Channels using zQSFP+
By: Mike Dudek
See: http://www.ieee802.org/3/bs/public/14_11/dudek_3bs_01_1114.pdf
Clarifying questions were asked and answered.

Presentation #37:
Title: FEC Core Area Comparison and Model
By: Martin Langhammer
See: http://www.ieee802.org/3/bs/public/14_11/langhammer_3bs_01_1114.pdf
Clarifying questions were asked and answered.

Presentation #38:
Title: FEC Considerations for 400G and Beyond
By: Martin Langhammer
See: http://www.ieee802.org/3/bs/public/14_11/langhammer_3bs_02_1114.pdf
Clarifying questions were asked and answered.

Chair reminds attendees to sign into the IEEE-SA Meeting Attendance Tool and sign the book.

Presentation #39:
Title: Some Consideration of Stronger FEC in 400GbE
By: Xinyuan Wang
See: http://www.ieee802.org/3/bs/public/14_11/wang_x_3bs_01a_1114.pdf
Clarifying questions were asked and answered.

Presentation #40:
Title: FEC Performance of FOM Bitmux in Different User Cases
By: Xinyuan Wang on behalf of Tongtong Wang
See: http://www.ieee802.org/3/bs/public/14_11/wang_t_3bs_01b_1114.pdf
Clarifying questions were asked and answered.

Presentation #41:
Title: FEC Codes for 400 Gbps 802.3bs
By: Vasu Parthasarathy
See: http://www.ieee802.org/3/bs/public/14_11/parthasarathy_3bs_01a_1114.pdf
Action Item: Vasu Parthasarathy to send updated presentation with additional supporters.
Clarifying questions were asked and answered.

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

Presentation #42:
Title: Production feasibility study on 400GbE PMD for SMF objectives
By: Hideki Isono
See: http://www.ieee802.org/3/bs/public/14_11/isono_3bs_01a_1114.pdf
Clarifying questions were asked and answered.

Presentation #43:
Title: Economics of 4x100G PAM4 vs. 8x50G
By: Ryan Yu
See: http://www.ieee802.org/3/bs/public/14_11/yu_3bs_01b_1114.pdf
Clarifying questions were asked and answered.

Chair asked if the Task Force had an objection to hearing Chris Cole's presentation "50Gb/s Per Lane Specification Considerations" . Chair noted that not all of the presentation matter is within the scope of the P802.3bs project. No one responded.

Presentation #44:
Title: 50 Gb/s Per Lane Specification Considerations
By: Chris Cole
See: http://www.ieee802.org/3/bs/public/14_11/cole_3bs_05_1114.pdf
Clarifying questions were asked and answered. Discussed various impacts of a 50G project on IEEE 802.3.

Presentation #45:
Title: Alternate Path to Consensus on 400 GbE PMDs
By: Ali Ghiasi
See: http://www.ieee802.org/3/bs/public/14_11/ghiasi_3bs_01_1114.pdf
Clarifying questions were asked and answered.

Presentation #46:
Title: 400G PMD for broad market potential and breakout
By: Tom Palkert
See: http://www.ieee802.org/3/bs/public/14_11/palkert_3bs_01_1114.pdf
Clarifying questions were asked and answered.

Chair reminded participants that photography and recording devices are not permitted.

Chair thanked the participants for the contributions and presentations.

Chair announced a Thursday start time of 8:30 a.m.

Break for the day at 5:56 p.m.

IEEE P802.3bs 400GbE – 6 November 2014:

Prepared by Kent Lusted

Resumed at 8:39 a.m. on 6 November 2014 by John D'Ambrosia, IEEE P802.3bs Task Force Chair.

Chair reminded participants that photography and recording devices are not permitted. Participants must ask for permission.

Chair asked if anyone would object to a photo. No one responded.

Chair displayed agenda slides:
http://www.ieee802.org/3/bs/public/14_09/agenda_3bs_01b_1114.pdf

Patent policy: Chair displayed the patent policy related slides in the agenda (http://www.ieee802.org/3/bs/public/14_09/agenda_3bs_01b_1114.pdf) . Chair asked if anyone is unfamiliar with the IEEE patent policy. No one responded. Chair called for potentially essential patents. No one responded.

Chair displayed the Guidelines for IEEE WG meetings.

Chair reminds attendees to sign the book. Update affiliation, if necessary. The IEEE Attendance Tool is not available until the closing plenary.

Chair reviewed the tentative future ad hoc call schedule in the agenda presentation. Discussed the use of ad hocs to discuss proposals and build consensus. Chair noted that the SMF ad hoc will be on Nov 18 and Dec 9, 7:30-9:00 am PST. Logic ad hoc will be 8:00am PST on Dec 2 and Dec 16. See slide 33 in http://www.ieee802.org/3/bs/public/14_09/agenda_3bs_01b_1114.pdf for more details. The January 2, 2015 electrical ad hoc meeting is tentative and cancellation will be announced over the reflector.

Motion #3: 9:08 a.m.
Move to adopt the proposal in slides 6 to 16 in *king_3bs_02a_1114.pdf* as the baseline proposal for the P802.3bs objective to "provide physical layer specifications which support link distances of at least 100 m of MMF" (400GBASE-SR16)

- Mover: Jonathan King
- Seconder: John Petrilla
- Technical (≥75%)
- Yes: 105 No: 0 Abstain: 18
- Motion passes!

Pete Anslow noted that, as Chief Editor, he intends to implement the proposal with editorial license. Chair asked if there was opposition. No one objected.

Attendance Straw polls:

- I will attend the IEEE P802.3bs 400G meetings at the January interim in Atlanta, GA, USA (week of January 12, 2015)
    - Y: 87, Maybe Y: 30, Maybe N: 7 , N: 1
- I will attend the IEEE 25G Ethernet meetings at the January interim in Atlanta, GA, USA (week of January 12, 2015)
    - Y: 44, Maybe Y: 39 , Maybe N: 17 , N: 17
- If I attend the January interim, I would like to attend both 400G P802.3bs and 25G P802.3by
    - Y: 86 , N: 20
- If I attend the January interim, it is ok to have meetings on Sunday
    - Y: 26 , N: 69
- I will attend the IEEE P802.3bs 400G meetings at the March plenary in Berlin, Germany (week of March 12, 2015)
    - Y: 69, Maybe Y: 40, Maybe N: 11 , N: 4
- I will attend the IEEE 25G Ethernet meetings at the March plenary in Berlin, Germany (week of March 12, 2015)
    - Y: 22, Maybe Y: 50 , Maybe N: 18 , N: 17
- If I attend the March plenary, I would like to attend both 400G P802.3bs and 25G P802.3by
    - Y: 81 , N: 22
- If I attend the March plenary, it is ok to have meetings on Sunday
    - Y: 40 , N: 59
- If I attend the March plenary, it is ok to have a 25G meeting on Friday
    - Y: 69 , N: 7
- Did you attend the 25G meeting this week? Y: 34

Mark Nowell asked if anyone in the room would be opposed to a 25G meeting at the March Plenary on Monday morning or Friday. No one objected.

Break at 9:45 a.m. Resumed at 10:09 a.m.

Strawpoll #1: 10:11am

I support channel equations in Goergen_3bs_01a_1114.pdf slide 15 “blue curves” for C2C and C2M as a target for further evaluation

- Yes
- No
- Undecided
- Abstaining
- Results:
    - Y: 45 N: 3 U: 26 A: 39

Straw Poll #2: 10:23 a.m.
For chip-to-module interconnect: I support the following chip-to-module ELECTRICAL interconnect modulation for 400GbE

- (a) NRZ for 50 Gb/s
- (b) PAM4 for 50 Gb/s
- (c) undecided
- (d) abstaining

Results

- A: 20 B: 40 C: 36 D: 24

Straw Poll #3: 10:28 a.m.
For chip-to-chip interconnect: I support the following chip-to-chip ELECTRICAL interconnect modulation for 400GbE:

- (a) NRZ for 50 Gb/s
- (b) PAM4 for 50 Gb/s
- (c) undecided
- (d) abstaining

Results
A: 15 B: 41 C: 33 D: 28

Straw Poll #4: 10:30 a.m.
Should 802.3 standardize 50Gb/s Ethernet?

(a) No
(b) Yes, as part of 802.3bs Project (P802.3bs PAR modification or new PAR by same Task Force), pending approval of new CFI in Mar 2015.
(c) Yes, in a separate, new 802.3 Project.
(d) No opinion at this time, don't care, abstain.

Results
a: 0 b: 8 c: 86 d: 20

There was much discussion regarding interest of a 50 Gb/s project, the best time for the project, and the potential impact in IEEE 802.3.

Future Meetings

- January 2015 interim – week of Jan 12
  - Hyatt Regency, Atlanta, GA, USA
  - Hosted by IEEE 802
- Mar 2015 Plenary - Week of Mar 8
  - Estrel Hotel and Convention Center, Berlin, Germany
- May 2015 Interim - Week of May 18, 2015
  - Omni William Penn Hotel, Pittsburgh, PA, USA
- July 2015 Plenary - Week of July 12
  - Hilton Waikoloa Village
- Sept 2015 Interim – Week of Sept 14
  - – Hyatt Regency Coconut Point, Bonita Springs, FL

Chair announced the intent to coordinate with Mark Nowell to minimize overlap with the 25G Ethernet project but cannot guarantee no overlap.

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

Motion #10:
Motion to Adjourn:

- M: Adee Ran
- S: Steve Trowbridge
- Pass by voice without opposition.

Meeting ended at 11:23 a.m.

Open Ad Hocs:

Volunteer	Action	Date Assigned	Status
Joel Goergen	Run the electrical interface ad hoc	8 September 2014	Open

Attendees

Last Name	First Name	Employer / Affiliation	Mon	Tues	Wed
Abbott	John	Corning	x	x	x
Anslow	Pete	Ciena Corporation	x	x	x
Balasubramanian	Vittal	Dell Force10		x	x
Balasubramonian	Venu	Marvell		x	x
Baldwin	Thananya	Ixia	x	x	x
Bennett	Mike	3MG Consulting		x	x
Bhatt	Vipul	Inphi	x		
Bliss	Will	Broadcom	x	x	x
Booth	Brad	Microsoft		x	x
Bouda	Martin	Fujitsu	x	x	x
Bower	Patricia	Fujitsu	x	x	x
Braun	Ralf-Peter	Deutsche Telekom	x	x	x
Brooks	Paul	JDSU	x	x	
Brown	David	Semtech	x	x	x
Brown	Matt	Applied Micro		x	x
Calderon	Juan-Carlos	Cortina Systems	x	x	x
Carroll	Martin	Verizon	x	x	x
Castillo	Jaime	Comira		x	
Cheng	Wheling	Ericsson	x	x	x
Cheng	Xiaoguang	Lenovo		x	x
Chidambara	Sundar	Broadcom		x	
Chuang	Liang	Oplink		x	
Cole	Chris	Finisar	x	x	x
Conroy	Keith	MultiPhy	x	x	x
D'Ambrosia	John	Dell	x	x	x
Dawe	Piers	Mellanox	x	x	x
Dedic	Ian	Fujitsu Semiconductors	x	x	x
Dove	Dan	Dove Networking Solutions (DNS)	x		x
Dudek	Mike	QLogic		x	x
Estes	Dave	Spirent Communications		x	
Ewen	John	IBM	x	x	x
Feller	Scott	Inphi		x	x
Flatman	Alan	LAN Technologies			x
Ghiasi	Ali	Ghiasi Quantum	x	x	x
Goergen	Joel	Cisco	x	x	x
Gong	Zhigang	D-Net	x	x	x
Gorshe	Steve	PMC_Sierra	x	x	x
Gustlin	Mark	Xilinx	x	x	x
Healey	Adam	Avago Technologies	x	x	x
Hidaka	Yasuo	Fujitsu Laboratories of America	x	x	x
Hirai	Riu	Hitachi	x	x	x
Holden	Brian	Kandou Bus		x	x
Horner	Rita	Synopsys		x	x
Irwin	Scott	Mosys	x	x	x
Ishibe	Kazuhiko	Anristu	x	x	x
Isono	Hideki	Fujitsu Ltd.	x	x	x
Issenhuth	Tom	Microsoft	x	x	x
Jackson	Kenneth	Sumitomo	x	x	x

Last Name	First Name	Employer / Affiliation	Mon	Tues	Wed
Jewell	Jack	Independent	x	x	x
Jiang	Wenbin	Cosemi	x	x	x
Kawatsu	Yasuaki	Hitachi-Metals	x	x	x
Kelsen	Michael	Time Warner Cable	x		x
King	Jonathan	Finisar Corp.	x	x	
Kipp	Scott	Brocade		x	x
Kish	Paul	Belden			x
Kojima	Keisuke	Mitsubishi Electric Res. Lab		x	x
Kolesar	Paul	CommScope	x	x	x
Krishnasamy	Kumaran	Broadcom	x	x	
Lackner	Hans	QoSCom			x
Lane	Brett	Panduit Corp.	x	x	
Langhammer	Martin	Altera	x	x	x
Latchman	Ryan	MACOM	x		
LeCheminant	Greg	Keysight Technologies	x	x	x
Lee	Arthur	MediaTek Inc	x	x	
Lewis	Dave	JDSU	x	x	
Li	Lei	Fujitsu	x	x	x
Li	Mike	Altera	x	x	x
Lingle, Jr.	Robert	OFS	x	x	
Little	Paul	Fujitsu Semiconductors	x	x	x
Lusted	Kent	Intel		x	x
Lyubomirsky	Ilya	Finisar	x	x	
Maki	Jeffery	Juniper Networks	x	x	x
Marris	Arthur	Cadence			x
Mason	Thomas	JDSU	x	x	
Matoglu	Erdem	Amphenol		x	x
McDermott	Tom	Fujitsu	x	x	x
McDonough	John	NEC America	x	x	x
Mei	Richard	Commscope			x
Mellitz	Richard	Intel		x	x
Meyer	Jeffrey	Centellax	x	x	x
Mooney	Paul	Spirent Communications	x	x	x
Muir	Ron	JAE		x	x
Neslusan	Neal	Multiphy	x	x	x
Nowell	Mark	Cisco		x	x
Ofelt	David	Juniper Networks	x	x	x
Ogura	Ichiro	Petra	x	x	x
Palkert	Tom	Luxtera		x	x
Park	Moon	OE Solutions	x	x	x
Parthasarathay	Vasudevan	Broadcom	x	x	x
Pepeljugoski	Petar	IBM	x	x	x
Pepper	Gerald	Ixia		x	x
Petrilla	John	Avago Technologies	x		x
Pimpinella	Rick	Panduit Corp.	x	x	
Qian	Haoli	Credo Semiconductor	x	x	x
Rabinovich	Rick	Alcatel-Lucent		x	x
Ran	Adee	Intel		x	x
Rao	Ram	Oclaro	x		x
Ressl	Mike	Hitachi Cable America	x	x	x
Rotolo	Salvatore	STM Microelectronics	x	x	x

Last Name	First Name	Employer / Affiliation	Mon	Tues	Wed
Rush	Brian	Maxim Integrated	x	x	x
Sakamoto	Hisaya	Fujitsu Optical Components	x	x	x
Sameer	Shah	Broadcom		x	
Sasaki	Yasuo	Panduit Corp.	x	x	x
Shanbhag	Megha	TE Connectivity	x	x	
Shirao	Mizuki	Mitsubishi Electric	x	x	x
Shrikhande	Kapil	Dell			x
Slavick	Jeff	Avago Technologies		x	x
Sommers	Scott	Molex	x	x	x
Sone	Yoshiaki	NTT	x	x	x
Song	Xiaolu	Huawei	x	x	x
Sprague	Ted	Infinera	x		x
Stassar	Peter	Huawei	x	x	x
Stone	Rob	Broadcom		x	
Szczepanek	Andre	Inphi	x	x	x
Szeto	William	Xtera	x	x	x
Tailor	Bharat	Semtech Corp		x	x
Tajima	Akio	NEC Corporation	x	x	x
Takahara	Tomoo	Fujitsu Laboratories	x	x	x
Takahata	Kiyoto	NTT	x	x	x
Takai	Atsushi	Oclaro	x	x	x
Tanaka	Toshiki	Fujitsu Laboratories	x	x	x
Teipen	Brian	ADVA Optical Networking	x	x	x
Telang	Viviek	Broadcom	x	x	x
Tipper	Alan	Semtech	x	x	x
Tracy	Nathan	TE Connectivity	x	x	x
Trowbridge	Steve	Alcatel-Lucent	x	x	x
Tseng	WenCheng	MediaTek	x	x	x
Twombly	Jeff	Credo Semiconductor	x	x	x
Ugolini	Alan	US Conec	x	x	x
Ulrichs	Ed	Source Photonics	x	x	x
Valle	Stefano	ST Microelectronics	x	x	x
Vanderlaan	Paul	Nexans		x	x
Walker	Clint	Intel	x	x	
Wang	Robert	Intel	x	x	x
Wang	Xinyuan	Huawei	x	x	x
Wang	Zhongfeng	Broadcom	x	x	x
Way	Winston	NeoPhotonics	x	x	x
Welch	Brian	Luxtera	x	x	x
Wen	Yangjing	Huawei	x	x	x
Wertheim	Oded	Mellanox		x	x
White	Martin	Cavium		x	x
Yu	Rang-chen	Oplink	x	x	
Zambell	Andrew	FCI		x	
Zivny	Pavel	Tektronix	x	x	x
Zortea	Tony	PMCS	x	x	x