

Approved Minutes

IEEE 802.3 100 Gb/s per lane optical PHYs Study Group

Plenary Meeting

Mar 13th, 2019

Vancouver, B.C. Canada

Prepared by Kenneth Jackson

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IEEE 802.3 100 Gb/s per lane optical PHYs Study Group – March 13, 2019

Prepared by Kenneth Jackson

Meeting convened at 8:32am

Welcome by Mark Nowell

Introductions

Chair reviewed agenda in

http://www.ieee802.org/3/100G_OPTX/public/Mar19/agenda_optx_01b_0319.pdf

Motion #1:

Move to approve the agenda:

- Moved by: Brian Welch
 - Seconded by: Pete Anslow
- Passed by voice without opposition

Motion #2:

Move to approve Jan 2019 interim meeting minutes:

- Moved by: Stephen Trowbridge
 - Seconded by: Pavel Zivny
- Passed by voice without opposition

Reviewed Study Group participation/organization.

- Chair: Mark Nowell (Cisco)
- Chief Editor: Gary Nicholl (Cisco) (in waiting)
- Recording Secretary: Kenneth Jackson (Sumitomo)
- Ad Hoc Chair (TBD)

Chair reminded participants to observe meeting decorum.

Photography and recording are not permitted. (*Comment made to change date of Ops Manual on slide*)

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 Attendance Tool and to sign the book.
Chair reviewed the IEEE structure. (*Comment made that slides need to be updated to reflect new IEEE-SA nomenclature.*)

Chair reviewed the Bylaws and Rules slides in -

http://www.ieee802.org/3/100G_OPTX/public/Mar19/agenda_optx_01b_0319.pdf

Chair reviewed participation in IEEE 802 Meetings.

Chair read the Guidelines for IEEE-SA Working Group meetings. *Chair requested any questions or concerns regarding this slide. None were raised.*

Chair reviewed the IEEE 802.3 Standards Process---Study Group phase.

Chair summarized the documentation necessary to progress to a Task Force.

Chair mentioned the possibility of Ad Hoc.

Chair reviewed Goals for this meeting

- Review Study Group's documentation
- Respond to any feedback from other Working Groups
- Review technical contributions towards our future baseline selection
- Lay the groundwork for the next meeting
- Request Approval for documentation @ 802.3 WG Closing Plenary on Thursday

Chair noted that this meeting cycle is often a waiting cycle while a SG's documentation is approved before the Task Force work can begin. However, in order to make progress, the Chair had announced at the January meeting that time would be given to technical presentations for the purpose of presenting information and data that would be leading towards proposals. The goal would be to share and to build consensus.

PAR & CSD Feedback from 802.11 Working Group:

- Title modification
- Dates modification

Chair reviewed meeting logistics and meeting schedule for the day.

http://www.ieee802.org/3/100G_OPTX/public/Mar19/agenda_optx_01b_0319.pdf

Two late presentations from John Johnson and Chris Cole.

Chair requested if there was any opposition to hearing these presentations. No opposition voiced.

Chair noted that there is an IEEE 802.3 Working Group meeting on Thursday afternoon.

Future Meetings:

- May 2019 Interim
 - Week of May 20, 2019 – Salt Lake City, UT USA
- July 2019 Plenary
 - Week of July 15, 2019 – Vienna, Austria
- September 2019 Interim
 - Week of September 9, 2019 – Indianapolis, IN USA
- November 2019 Plenary
 - Week of November 11, 2019 – Waikoloa Village, HI USA

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

Chair reviewed the updated PAR document with changes incorporating feedback from 802.11 Working Group:

http://www.ieee802.org/3/100G_OPTX/P802_3cu_PAR_Detail_updated0319.pdf

- No concerns raised about suggested changes

Motion #3:

Move to adopt the updated PAR as shown in

http://www.ieee802.org/3/100G_OPTX/P802_3cu_PAR_Detail_updated0319.pdf

- Moved by: Jeff Maki
 - Seconded by: Stephen Trowbridge
- Y: 42 N: 0 A: 0
 (Technical >=75%)
 Motion passes

Motion #4:

Move that the Study Group request the rechartering of the 100Gb/s per lane Optical PHYs Study Group.

- Moved by: Pete Anslow
 - Seconded by: Jeff Maki
- Approved by voice vote without opposition
 (>50%)

Presentation #1: “PMD Naming Proposal”, K.P. Jackson (Sumitomo)

See http://www.ieee802.org/3/100G_OPTX/public/Mar19/jackson_optx_01_0319.pdf

- Proposed usage of:
 - 100GBASE-FR
 - 100GBASE-LR
 - 400GBASE-FR4

- 400GBASE-LR4

Chair asked if there was any opposition to the proposed names. None was voiced.

Presentation #2: “Confirming Support for New 10km PMDs”, Jeff Maki (Juniper Networks)

See: http://www.ieee802.org/3/100G_OPTX/public/Mar19/maki_optx_01a_0319.pdf

- 100 GbE and 400 GbE 10 km SMF PMDs are needed now.
- It simplifies host designs and allows a common solution for all PMDs
- It enables technology and development re-use

Discussion: Comments regarding market data for 400G and its inclusion of 4x100G (breakout)

Presentation #3: “Further Test Result for 4*100G PAM4 10km Transmission”, Yu Xu (Huawei)

See: http://www.ieee802.org/3/100G_OPTX/public/Mar19/you_optx_01a_0319.pdf

- Concerns that TDECQ penalty will be excessive over worst case fiber and worst case wavelength operating range when using a CWDM wavelength grid

Discussion:

- Comment to modify slide 2 to label number of units.
- Request to understand EML bias points--how were they determined.

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

Break at 10am Reconvene at 10:30am

Presentation #4: “Towards 100GBASE-FR & 100GBASE-LR Baseline Proposals”, Brian Welch (Cisco)

See: http://www.ieee802.org/3/100G_OPTX/public/Mar19/welch_optx_01a_0319.pdf

- Self explanatory title

Discussion: Comment made about “TDECQ – $10 \cdot \log_{10}(C_{eq})$ (max)” parameter justification.

Removal? Data to support. Comment regarding possible removal of this parameter in other specs, *.bs & *.cd. Suggested to correct statement regarding KP4 FEC link budget on slide 3 to use proper IEEE clause number to reference FEC..

Presentation #5: “Towards 400GBASE-FR4 Baseline Proposal”, Hai-Feng Liu (Intel)

See: http://www.ieee802.org/3/100G_OPTX/public/Mar19/liu_optx_01a_0319.pdf

- Self explanatory title
- Speaker noted changes to statement regarding link budget based on KP4 FEC, slide 3.
- Speaker noted previous comments regarding “TDECQ – $10 \cdot \log_{10}(C_{eq})$ (max)” parameter

Discussion: None

Presentation #6: “Towards a 400GBASE-LR4 Baseline”, Dave Lewis (Lumentum)

See: http://www.ieee802.org/3/100G_OPTX/public/Mar19/lewis_optx_01a_0319.pdf

- Self explanatory title

Discussion: Comments made to update errors in tables---speaker to update prior to updating revision. Comment regarding dispersion slope of fiber, 0.093 vs. 0.092 ps/nm² km

Chair pointed out that webpage had incorrect title posted for David Lewis presentation. It has been corrected to correctly show the requested and actual presentation title. Unfortunately the incorrect title suggested it was a baseline proposal. David Law reminded the group that baselines cannot be proposed in a Study Group. Chair agreed and pointed out that this point had already been made earlier in the meeting.

It was stated that these kinds of proposals must be re-presented in Task Force and technical decisions could only be made in the Task Force.

Presentation #7: “Chirp Behavior of Uncooled EMLs”, John Johnson (Broadcom)

See: http://www.ieee802.org/3/100G_OPTX/public/Mar19/johnson_optx_01_0319.pdf

- EMLs designed for shorter reach applications may not perform well for longer reach applications
- CWDM EMLs for uncooled 400GBASE-LR4 should be optimized to provide additional OMA and ER in order to limit the spread of chirp over temperature.
 - This is not an unprecedented transition in the industry. The same kind of device optimization occurred with 10Gb/s EMLs to push transmission distance from 40km to 80km
 - The CWDM grid is the best choice for the industry for 400GBASE-LR
 - Cooled EMLs are a possible implementation option

Discussion: Clarification questions. Questions regarding test methodology to determine yield/binning and sensitivity of dispersion penalty with bias.

Chair asked about attendance at next May meeting. Estimates of ~ 40 made.

Presentation #8: “Broad Market Potential for 100GbE FR, LR & 400GbE FR4, LR4”, Chris Cole (Finisar)

See: http://www.ieee802.org/3/100G_OPTX/public/Mar19/cole_optx_01c_0319.pdf

- Analysis of LightCounting market data and confirming need for these solutions

- Highlighted the challenge of assessing analyst data for modules when no breakdown of breakout vs non-breakout usage is possible
- Presenter made comment regarding typos on Slide 7 - revised version sent and posted (_01c)

Presentation #9: “Editorial Considerations”, Gary Nicholl (Cisco)

See: http://www.ieee802.org/3/100G_OPTX/public/Mar19/nicholl_optx_01a_0319.pdf

- Editorial Team:
 - Gary Nicholl, Cisco • Chief Editor and editor for clauses FM, 1, 30, 45, 78, 80, 91 and 116
 - David Lewis, Lumentum • Editor for clauses 140 and 200
- Reviewed anticipated structure: amended & new clauses

Discussion: Question about what thinking went into this choice of structure. Can share for review with anyone interested for editorial feedback.

Motion #5:

Move to adjourn the meeting

- Moved by: Jeff Maki (Juniper Networks)
- Second by: John Johnson (Broadcom)

Passed by voice without opposition

Meeting ended at 12:15 p.m.

Attendees

100 Gb/s per lane optical PHYs Study Group				13-Mar-19
Last Name	First Name	Employer	Affiliation	Wednesday
Abbott	John	Corning	Corning	x
Anslow	Pete	Ciena Corporation	Ciena Corporation	x
Baca	Rich	Microsoft	Microsoft	x
Bernstein	Gary	Leviton	Leviton	x
Burrell	Gary	Elenion Technologies	Elenion Technologies	x

Chang	Frank	Source Photonics	Source Photonics	x
Chen	C. C. David	Applied Optoelectronics	Applied Optoelectronics	x
Cole	Chris	Finisar	Finisar	x
D'Ambrosia	John	FutureWei, Subsidiary of Huawei	FutureWei, Subsidiary of Huawei	x
DeAndrea	John	Finisar	Finisar	x
Du	Liang	Google	Google	x
Ferretti	Vince	Corning	Corning	x
Ghiasi	Ali	Ghiasi Quantum	Ghiasi Quantum, Huawei	x
Gorshe	Steve	microchip	microchip	x
Hashardni	Kobi	Dust Photonics	Dust Photonics	x
Ishibe	Kazuhiko	Anristu	Anristu	x
Isono	Hideki	Fujitsu Optical Components	Fujitsu Optical Components	x
Issenhuth	Tom	Huawei	Huawei	x
Jackson	Ken	Sumitomo	Sumitomo	x
Johnson	John	Broadcom	Broadcom	x
Kimber	Mark	Semtech	Semtech	x
LeCheminant	Greg	Keysight Technologies	Keysight Technologies	x
Lewis	Dave	Lumentum	Lumentum	x
Lingle, Jr.	Robert	OFS	OFS	x
Liu	Hai-Feng	Intel	Intel	x
Maki	Jeffery	Juniper Networks	Juniper Networks	x
Marques	Flavio	Furukawa	Furukawa	x
Nicholl	Gary	Cisco	Cisco	x

Nowell	Mark	Cisco	Cisco	x
Ogawa	Daisuke	NTT Electronics	NTT Electronics	x
Okabe	Ryo	Fujitsu Optical Components	Fujitsu Optical Components	x
Pham	Phong	US Conec	US Conec	x
Piehler	David	Dell EMC	Dell EMC	x
Pimpinella	Rick	Panduit Corp.	Panduit Corp.	x
Pozzebon	Dino	microsemi	microsemi	x
She	Qingya	Fujitsu Optical Components	Fujitsu Optical Components	x
Shuai	Jia Long	Huawei	Huawei	x
Stassar	Peter	Huawei	Huawei	x
Takahara	Tomoo	Fujitsu Laboratories	Fujitsu Laboratories	x
Terada	Masaru	OFS	OFS	x
Tooyserkani	Pirooz	Cisco	Cisco	x
Trowbridge	Steve	Nokia	Nokia	x
Ulrichs	Ed	Source Photonics	Source Photonics	x
Wang	Xinyuan	Huawei	Huawei	x
Welch	Brian	Cisco	Cisco	x
Xu	Yu	Huawei	Huawei	x
Yamamoto	Shuto	NTT	NTT	x
Young	Adrian	Leviton	Leviton	x
Yu	Cl	MediaTek	MediaTek	x
Zhang	Kevin	IDT	IDT	x
Zivny	Pavel	Tektronix	Tektronix	x

