

12/18/17 NGMMF Study Group Ad Hoc Teleconference Meeting Notes

Group Name: IEEE 802.3 Next-generation 200 Gb/s and 400 Gb/s MMF PHYs Study Group Ad Hoc

Date/Location: Monday, December 18, 2017. Teleconference

Chair: Robert Lingle, Jr., Acting Chair NGMMF SG

Recording Secretary: Mabud Choudhury

Meeting Participants:

	Name	Employer	Affiliation
1	Adrian Young	Leviton	Leviton
2	Ali Ghiasi	Ghiasi Quantum	Ghiasi Quantum and Huawei
3	Brett Lane	Panduit Corp.	Panduit Corp.
4	Bruce Chow	Corning Inc	Corning Inc
5	Darryl Heckle	Corning Inc	Corning Inc
6	David Law	HPE	HPE
7	David Piehler	Dell EMC	Dell EMC
8	Earl Parsons	CommScope	CommScope
9	Frank Chang	Inphi	Inphi
10	George Zimmerman	CME Consulting	CommScope
11	John Abbott	Corning Inc	Corning Inc
12	John Johnson	Broadcom Ltd	Broadcom Ltd
13	John Kamino	OFS	OFS
14	Jonas Li	?	?
15	Jonathan Ingham	Foxconn Interconnect Technology	Foxconn Interconnect Technology
16	Jose Castro	Panduit Corp.	Panduit Corp.
17	Kenneth Jackson	Sumitomo Electric Device Innovations USA	Sumitomo Electric Industries, LTD
18	Mabud Choudhury	OFS	OFS
19	Mark Gustlin	Xilinx	Xilinx
20	Mike Dudek	Cavium	Cavium
21	Paul Kolesar	CommScope	CommScope
22	Paul Neveux	Superior Essex	Superior Essex
23	Peter Pondillo	Corning Inc	Corning Inc
24	Piers Dawe	Mellanox	Mellanox
25	Rakesh Sambaraju	Nexans	Nexans
26	Rick Pimpinella	Panduit Corp.	Panduit Corp.
27	Robert Lingle	OFS	OFS
28	Steve Swanson	Corning Inc	Corning Inc
29	Sunny Xu	CommScope	CommScope
30	Zhaoping Yi	New H3C?	New H3C?
31	Zuwei Shen	Google	Google

31 attendees participated in the 12/18/17 call. If you participated in the meeting but are not listed or if you attended and company employer/affiliation is incorrect, please email Mabud Choudhury, mchoudhury@ofsoptics.com with a correction.

Call to order/Meeting Start Time: 11:04 am Eastern Standard Time (US)

Chair's remarks:

Reminder for participants to record their attendance along with employer/affiliation to Mabud Choudhury at mchoudhury@ofsoptics.com

Reviewed Agenda, posted on:

http://www.ieee802.org/3/NGMMF/public/adhoc/lingle_ngmmf_01a_121817.pdf

Participation in IEEE 802 Meetings and Guidelines for IEEE-SA Meetings, including Patent Policy, reviewed (included with Agenda slides). No one indicated being unfamiliar with these policy slides.

Approval of minutes of previous meeting: minutes of previous meeting were posted prior to meeting, and were approved.

Approval of agenda: Agenda was approved.

Technical Topics:

1. Cost discussions with Q&A - David Law, Chair of 802.3:

David Law provided his perspective on 2012 slide deck "Presentation on Cost Discussions to IEEE 802.3 Working Group" by Michael A. Lindsay, Dorsey & Whitney LLP:

http://www.ieee802.org/3/NGMMF/public/adhoc/lindsay_01_0512_optx.pdf

Slide 2:

From IEEE-SA Standards Meetings Guidelines: "Relative costs, including licensing costs of essential patent claims, of different technical approaches may be discussed in standards development meetings."

Slide 4:

No survey should be performed without review from IEEE legal. If considering a survey, contact David Law first.

Slides 5 & 6:

Risks of cost discussions and why cost is so sensitive reviewed.

Slide 7:

Discussion of relative costs ok when comparing different technical approaches. Technical considerations should be the main focus of discussions.

Slide 8:

Permit sufficient discussion to enable participants to understand the relative cost differentials.

Slide 10:

Make clear what is being stated. Goal is to reach consensus.

Slides 11, 12, 13, 14:

Examples along with specific questions related to NGMMF SG reviewed and extensively discussed.

Recommendations:

- Review contributions that include relative cost comparisons with sub-Group Chair, SG Chair in this case.
- Review IEEE Standards Antitrust and Competition Policy
<http://standards.ieee.org/develop/policies/antitrust.pdf>

Action Item: if there are best practices or good benchmarks for contributions with relative cost comparisons as part of evaluating technical approaches, they will be posted on reflector.

2. Preparation for Geneva Interim – Robert Lingle:

Reviewed Chair's slides 9-13 from

http://www.ieee802.org/3/NGMMF/public/adhoc/lingle_ngmmf_01a_121817.pdf

Slide 9:

Possible boilerplate objectives reviewed and discussed.

Slide 11:

Possible objective that states the PMDs defined in the project will be able to use previously defined PCS & FEC from 802.3bs. See "400/200GbE PCS Overview" presentation summary below.

Slide 13:

Summarizes and lists key contributions needed and/or anticipated for Geneva SG meeting.

3. 400/200GbE PCS Overview – Mark Gustlin, Xilinx:

http://www.ieee802.org/3/NGMMF/public/adhoc/gustlin_ngmmf_01a_121817.pdf

Early draft of contribution reviewed and discussed.

Slide 3:

PMA reference will be added to possible implementation diagrams.

Slide 4:

802.3bs PCS processing flow was shown and reviewed.

Slide 5:

802.3bs PMA reviewed.

Slide 6:

Example of 400GBASE-SR4.2 reviewed, PCS lanes are 2:1 multiplexed onto each electrical and optical 'lane', BER budget is split out across AUI interfaces and the PMD budget matching the error rates and statistics utilized in 802.3bs, then the PCS and FEC from 802.3bs is directly applicable to NGMMF project. However, if there are contributions that require different FEC or latency, then PCS will need to be open. 100 Gb/s PAM4, VCSEL would not drive new FEC or PCS.

Meeting closed: 1:01 pm Eastern Standard Time.

Next Meeting: Thursday, January 11, 2018, 11am – 1pm Eastern Standard Time (US). Teleconference