February 08, 2018 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: Thursday, February 08, 2018. Teleconference
Chair: Robert Lingle, Jr., Chair NGMMF SG
Recording Secretary: Mabud Choudhury

Meeting Participants:

	Name	Employer	Affiliation
1	Adrian Young	Leviton Mfg.	Leviton Mfg.
2	Bruce Chow	Corning Inc	Corning Inc
3	Dale Murray	LightCounting	LightCounting
4	David Law	HPE	HPE
5	David Piehler	Dell EMC	Dell EMC
6	Derek Cassidy	ICRG	IET
7	Frank Chang	Inphi	Inphi
8	Flavio Marques	Furukawa Electric Latam	Furukawa Electric Latam
9	George Zimmerman	CME Consulting	CommScope
10	Greg McSorley	Amphenol	Amphenol
11	James Withey	Fluke Networks	Fluke Networks
12	Jeff Maki	Juniper	Juniper
13	Jim Young	CommScope	CommScope
14	John Kamino	OFS	OFS
15	Jonathan Ingham	Foxconn Interconnect Technology	Foxconn Interconnect Technology
16	Jonathan King	Finisar	Finisar
17	Ken Jackson	Sumitomo	Sumitomo
18	Mabud Choudhury	OFS	OFS
19	Mike Dudek	Cavium	Cavium
20	Paul Kolesar	CommScope	CommScope
21	Paul Vanderlaan	Berk-Tek	Berk-Tek
22	Pete Pondillo	Corning Inc	Corning Inc
23	Piers Dawe	Mellanox	Mellanox
24	Rakesh Sambaraju	Berk-Tek	Berk-Tek
25	Rick Pimpinella	Panduit Corp.	Panduit Corp.
26	Robert Lingle, Jr.	OFS	OFS
27	Steve Swanson	Corning Inc	Corning Inc
28	Sunny Xu	CommScope	CommScope
29	Tom Mitcheltree	US Conec	UC Conec
30	Yang Zhiwei	ZTE	ZTE
31	Zuowei Shen	Google	Google

31 attendees participated in the February 08, 2018 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, Slide 3 of: http://www.ieee802.org/3/NGMMF/public/adhoc/lingle_NGMMF_adhoc_01a_020818.pdf
- Participation in IEEE 802 Meetings and Guidelines for IEEE-SA Meetings, including Patent Policy, reviewed (Slides 4 & 5 of link above). No one indicated being unfamiliar with these policy slides.

Approval of minutes of previous meetings: minutes of January 11, 2018 (corrected/updated) and January 16, 2018 NGMMF Ad Hoc teleconference meetings were posted prior to meeting, and were approved.

Approval of agenda: Agenda was approved.

Technical Topics:

1. Objectives adopted/failed in Geneva & concerns about Distinct Identity (DI) of CSD, Robert Lingle, Jr., Chair SG:

- Slide 6 of http://www.ieee802.org/3/NGMMF/public/adhoc/lingle_NGMMF_adhoc_01a_020818.pdf covered key objectives adopted in Geneva and key objective that failed.
- Slide 7 covered concerns about DI:
    - Some wording belongs more in BMP rather than in DI
    - Material changes to CSD should be worked with David Law, WG Chair, and by letting WG know of changes
    - Potentially use reflector to gain consensus for wording changes to DI
    - Use next Ad Hoc call to resolve wording issues with CSD. Build consensus for wording to cover DI for both 400 Gb/s over 4 pairs and 400 Gb/s over 8 pairs.

2. Need for additional contributions to support 400 Gb/s over 8 pairs, Robert Lingle, Jr., Chair SG:

- Slide 8 of http://www.ieee802.org/3/NGMMF/public/adhoc/lingle_NGMMF_adhoc_01a_020818.pdf
- Contributions supporting 400 Gb/s over 8 pairs in Rosemont with multiple authors and many supporters would be helpful.

3. Impact of Switch Radix on Server Cabling – Rick Pimpinella:

- http://www.ieee802.org/3/NGMMF/public/adhoc/pimpinella_NGMMF_adhoc_01_0218.pdf
- Evolution of switch radix from 64x10G to 128x25G to 256x50G supports 400G-SR8 with breakout to 50G-SR.
- Discussion about need for additional cables over existing structured cabling. Author indicated need for breakout/octopus-type cables.

- 400G-SR8 would allow breakout to 200G-SR4, 100G-SR2 and 50G-SR maximizing breakout flexibility.
- Contribution concludes with support of BMP for 400 Gb/s over 8 pairs, support for 400Gb/s over 4 pairs, and encouraged industry focus on achieving 100 Gb/s VCSELs.

4. **Broad Market Potential for 200 Gb/s over 1-pair MM fiber, Flavio Marques:**
- http://www.ieee802.org/3/NGMMF/public/adhoc/marques_NGMMF_adhoc_01_020818.pdf
- Contribution to provide voice of customer (VOC) testimonials for large enterprise data center customers/experts.
- Testimonials from data center industry leaders in ISP/utility, finance and defense/aerospace industry segments in Brazil indicated their support/need for 200 Gb/s over 1 pair to maximize lifespan of existing infrastructure avoiding major alternative cost of building new data centers.
- General discussion followed

5. Reconsider a 200G objective over 1 pair MMF – Robert Lingle, Jr., Chair SG:
- Slide 9 of http://www.ieee802.org/3/NGMMF/public/adhoc/lingle_NGMMF_adhoc_01a_020818.pdf
- Discussion about reconsidering 200 Gb/s over 1 pair objective.

Meeting closed: 1:05 pm Eastern Standard Time.

Next Meeting: Thursday, February 22, 2018, 11 am – 1 pm Eastern Standard Time (US), NGMMF Ad Hoc Teleconference