

Approved Minutes
IEEE P802.3cm 400 Gb/s over Multimode Fiber Task Force
During IEEE 802.3 Interim Meeting Week
September 10, 2018
Spokane, CA, US
Prepared by Mabud Choudhury

Group Name: IEEE P802.3cm 400 Gb/s over Multimode Fiber Task Force

Date/Location: Monday, September 10, 2018. Spokane, WA, US

Chair: Robert Lingle, Jr.

SR8 & Chief Editor: Jonathan King

SR4.2 clause Editor: Jonathan Ingham

Recording Secretary: Mabud Choudhury

Meeting Participants: Attendance is listed in Appendix A (participants)

Call to order:

IEEE P802.3cm 400 Gb/s over Multimode Fiber (400G over MMF) Task Force (TF) meeting was convened at 8:34 am Pacific Daylight Time/PDT (UTC -7), Monday, September 10, 2018 by Robert Lingle, Jr., 802.3cm Task Force Chair.

Mr. Lingle welcomed attendees to the IEEE P802.3cm 400G over MMF TF meeting.

The Chair called for introductions and affiliations, the participants introduced themselves, and the Chair then proceeded with the agenda.

Presentation #1:

Title: "IEEE P802.3cm 400G over MMF Task Force Agenda and General Information"

Presenter: Robert Lingle, Jr., Chair

http://www.ieee802.org/3/cm/public/September18/agenda_3cm_01_0918.pdf

Chair reviewed Agenda.

Motion #1:

Move to approve the Agenda, Slide 2 of

http://www.ieee802.org/3/cm/public/September18/agenda_3cm_01_0918.pdf

- Moved by James Young
- Seconded by John Abbott

Motion approved by voice vote without objection. (Procedural > 50%)

Motion #2:

Move to approve meeting minutes, previously posted, from July 10, 2018 San Diego Plenary IEEE P802.3cm Task Force meeting:

http://www.ieee802.org/3/cm/public/July18/unapproved_meeting_minutes_3cm_01_0718.pdf

- Moved by John Abbott
- Seconded by Mike Dudek

Motion approved by voice vote without objection. (Procedural > 50%)

Chair read aloud and reviewed IEEE-SA Meeting Guidelines, including patent policy, and IEEE 802 Participation Policy. There were no questions from group based on guidelines and policy review.

Mr. Lingle provided Task Force information, access to the home page and reflector.

Chair noted Task Force Editors: Jonathan King, affiliated with Finisar - SR8 & Chief Editor and Jonathan Ingham, affiliated with FIT – SR4.2 clause, and Recording Secretary: Mabud Choudhury, affiliated with OFS.

Chair provided P802.3cm 400G over MMF Task Force Private Area information:

<http://www.ieee802.org/3/cm/private/index.html> Username and Password. Draft version of the standard are posted in the Private Area

Mr. Lingle reminded everyone to sign-in via IMAT on-line attendance and to sign-in on Attendance Book. Interim meeting password was provided.

Chair reviewed ground rules, role of the Chair, overall IEEE structure, important bylaws, rules, and associated references links, overall IEEE 802.3 standards process focusing in on Task Force phase.

Mr. Lingle reviewed the timeline goals, of authorizing D1.0 by this meeting, authorizing D3.0 by July 2019 and completing standard by December 2019. Chair emphasized the need for timeline to move as expeditiously as possible to meet market window for standard, while ensuring that the standard is technically complete and correct.

Mr. Lingle reviewed approved PAR for the “400G over MMF Task Force” and the key Objectives approved by the 802.3 Working Group.

Mr. Lingle provided Ad Hoc report, summarizing 3 web/teleconference meetings since July Plenary.

Summary of Editors’ Report was reviewed, Slide 24 of

http://www.ieee802.org/3/cm/public/September18/agenda_3cm_01_0918.pdf

Chair reviewed primary goal for the week:

- Do the work necessary to authorize editors to generate

Big Ticket items:

- 400GBASE-SR4.2 PMD type
 - MDI lane assignments
 - TDECQ and SECQ methodology
- Draft D0.2
 - Comment resolution, discussion, next steps

Schedule for Monday, September 10 was reviewed.

Future meeting dates and locations were reviewed.

Presentation #2:

Title: “MDI Lane Assignments for 400GBASE-SR4.2”

Presenter: Jonathan Ingham

http://www.ieee802.org/3/cm/public/September18/ingham_3cm_01_0918.pdf

Summary: Signal mapping: 400GBASE-SR4.2 Optical Lane Assignments was presented. “Form factors that may support 400GBASESR4.2 include QSFP-DD and OSFP and for these cases the 12 fiber MPO optical connector is expected. The mapping is completely compatible with the installed cable plant for 40GBASE-SR4 and 100GBASE-SR4 and for the same form factors permits 400GBASE-SR4.2 to plug into the same sockets and hosts as, e.g. 400GBASEDR4. The MPO-duplex mapping is identical to industry practice where, for example, four 10GBASE-SR transceivers are aggregated within a QSFP form factor.” Comparison of traditional SR4 and SR4.2 MDI lane assignments was provided. Proposed content for draft standard was provided.

General discussion followed.

Presentation #3:

Title: “TDECQ and SECQ methodology for 400GBASE-SR4.2”

Presenter: Jonathan Ingham

http://www.ieee802.org/3/cm/public/September18/ingham_3cm_02a_0918.pdf

Summary: “The TDECQ and SECQ methodology for 400GBASE-SR4.2 is proposed to be based on Clause 138. However, Clause 138 PMDs use transmission in the 840 to 860 nm wavelength range, whereas 400GBASE-SR4.2 uses the 844 to 863 nm and 900 to 918 nm wavelength ranges. Therefore, the TDECQ reference response must be recalculated based on the worst-case bandwidth of the three MMF channels (70 m OM3, 100 m OM4 and 150 m OM5) over the allowed wavelengths.”

Discussions about “worst case Tx,” fiber dispersion, adding chromatic dispersion to modal dispersion for simulation, similar –3 dBe bandwidths at 918 nm for OM3/OM4/OM5, OM3/OM4/OM5 reaches, and general discussion. Author updated presentation (above link) by adding Slides 11 and 12 to address technical discussion items during meeting.

Break at 10:29 am PDT (UTC -7). Resumed meeting at 11:01 am PDT.

Presentation #4:

Title: “Editors report”

Presenter: Jonathan King

http://www.ieee802.org/3/cm/public/September18/editors_report_comments_D0p2_3cm_01_0918.pdf

Chief Editor Jonathan King summarized the following:

- Draft 0.1 posted, reviewed, 19 comments reviewed
- Draft 0.2 posted, reviewed, 23 comments
 - 13 accepted, non-controversial
- Items needing more work
 - Editing instructions for Clause 1, 30, 78, 45, 116 need to be written
 - Cross references clean-up
 - References for the MDI for 400GBASE-SR8
- TBDs in document
 - TDECQ measurement bandwidth for 400GBASE-SR4.2
 - MDI sections for 400GBASE-SR4.2

Comments received were shared in spreadsheet format also:

http://www.ieee802.org/3/cm/public/September18/Comments-received-on-8023cm-D0p2_3cm_0918.xlsx

TF discussed and resolved comments against
Clause 1, 138, comment IDs 5, 9 and 10
Clause 138: sub-clause 138.11.4.6, MDI PICS, comment ID 11
Clause 200: sub-clause 200.6, description of bi-di lanes, comment IDs 4, 20
Clause 200: sub-clause 200.8.5, TDECQ bandwidth, comment ID 21
Clause 200: sub-clause 200.7, signal detect, Tx Return Loss, Tx 'off' average power, comment IDs 18, 23, 19.

Final responses to comments against D0.2: http://www.ieee802.org/3/cm/public/September18/final-responses-to-comments_D0p2_post-meeting_3cm_01_0918.pdf

Break for lunch at 12:10 pm PDT (UTC -7). Resumed meeting at 1:52 pm PDT.

Motion #3:

Move to adopt "400GBASE-SR4.2" as nomenclature for the 4-pair PHY and to adopt "400GBASE-SR8" as nomenclature for the 8-pair PHY

- Moved by: Jonathan King
- 2nd: Adrian Amezcua
- Y: 14 N: 0 A: 0 (Technical, >= 75%)
- Motion Passes!

Motion #4:

Move to adopt content of Slides 7 to 10 of http://www.ieee802.org/3/cm/public/September18/ingham_3cm_01_0918.pdf to specify Medium Dependent Interface (MDI), Optical lane assignments and MDI requirements for 400GBASE-SR4.2

- Moved by: Jonathan Ingham
- 2nd: James Young
- Y: 13 N: 0 A: 0 (Technical, >= 75%)
- Motion Passes!

Motion #5:

Move to adopt a 3 dBe measurement bandwidth for TDECQ in 400GBASE-SR4.2 of 9.0 GHz

- Moved by: Jonathan Ingham
- 2nd: Jonathan King
- Y: 13 N: 0 A: 1 (Technical, >= 75%)
- Motion Passes!

Motion #6:

Move to direct the editorial team to generate D1.0 for Task Force review.

- Moved by: Jonathan King
- 2nd: Mabud Choudhury
- Y: 14 N: 0 A: 0 (Technical, >= 75%)
- Motion Passes!

Presentation #5:

Title: "Proposed Project Timeline"

Presenters: Mabud Choudhury, Robert Lingle, Jr.

http://www.ieee802.org/3/cm/public/September18/timeline_3cm_01_0918.pdf

Discussed proposed project timeline.

Motion #7:

Move to adopt the P802.3cm proposed timeline in slide 3 of

http://www.ieee802.org/3/cm/public/September18/timeline_3cm_01_0918.pdf

- Moved by: Mabud Choudhury
- 2nd: James Young
- Y: 12 N: 0 A: 1 (Technical, >= 75%)
- Motion Passes!

Straw Poll on Attendance:

- Attend November 2018 802 Bangkok, Thailand plenary:
– Y: 13 N: 1 M: 3
- Attend January 2019 interim, Aruba, Long Beach, CA, USA:
– Y: 12 N: 0 M: 3

Motion #8:

Move to Adjourn:

- Moved by: Mike Dudek
- Seconded by: Jonathan King
- Approved by voice vote without objection. (Procedural > 50%)

The Meeting was adjourned at 3:34 am, PDT (UTC -7), Monday, September 10, 2018.

Next Meeting:

Next in-person IEEE 802.3cm Task Force meeting is scheduled for week of November 12th, 2018 for IEEE 802.3 Plenary, Bangkok, Thailand.

Appendix A: Attendees at the IEEE 802.3 400 Gb/s over Multimode Fiber Task Force, 10 Septmeber, 2018.

23 individuals signed in.

	Last Name	First Name	Employer	Affiliation	10-Sept-2018
1	Abbott	John	Corning	Corning	x
2	Amezcuca	Adrian	Prysmian	Prysmian	x
3	Carlson	Craig	Marvell	Marvell	x
4	Choudhury	Mabud	OFS	OFS	x
5	Dawe	Piers	Mellanox	Mellanox	x
6	Dudek	Mike	Marvell Technologies	Marvell Technologies	x
7	He	Xiang	Huawei	Huawei	x
8	Ingham	Jonathan	Foxconn Interconnect Technology	Foxconn Interconnect Technology	x
9	Jackson	Ken	Sumitomo	Sumitomo	x
10	King	Jonathan	Finisar	Finisar	x
11	Kukita	Hiroaki	Yamaichi	Yamaichi	x
12	Le Cheminant	Greg	Keysight Technologies	Keysight Technologies	x
13	Lingle Jr	Robert	OFS	OFS	x
14	Masuda	Takeo	OITDA/PETRA	OITDA/PETRA	x
15	Murty	Ramana	Broadcom	Broadcom	x
16	Nakamoto	Edward	Spirent Communications	Spirent Communications	x
17	Palkert	Tom	Macom	Macom	x
18	Piehler	David	Dell EMC	Dell EMC	x
19	Pham	Phong	US Conec	US Conec	x
20	Swanson	Steve	Corning	Corning	x
21	Withey	James	Fluke Networks	Fluke Networks	x
22	Young	Jim	CommScope	CommScope	x
23	Zivny	Pavel	Tektronix	Tektronix	x