Approved Minutes
IEEE P802.3cm 400 Gb/s over Multimode Fiber Task Force Meeting
During IEEE 802.3 Interim Meeting Week
May 20, 2019
Salt Lake City, UT, USA
Prepared by Mabud Choudhury

Group Name: IEEE P802.3cm 400 Gb/s over Multimode Fiber Task Force
Date/Location: Monday, May 20, 2019. Salt Lake City, UT, USA
Chair: Robert Lingle, Jr, affiliated with OFS
Chief Editor: Jonathan Ingham, affiliated with FIT
Editor: Jonathan King, affiliated with Finisar
Recording Secretary: Mabud Choudhury, affiliated with OFS
Meeting Participants: Attendance is listed in Appendix A (20 attendees)

Note: Robert Lingle, Jr, Task Force Chair was unable to attend meeting from 8:31 am to 12:15 pm
Mountain Daylight Time/MDT (UTC -6) due to unscheduled and unavoidable air travel issues. Mabud
Choudhury was Acting Task Force Chair from 8:31 am – 9:03 am MDT, Jonathan Ingham was Acting Task
Force Chair from 9:04 am – 12:15 pm MDT.

Call to order:
IEEE P802.3cm 400 Gb/s over Multimode Fiber (400G over MMF) Task Force (TF) during IEEE 802.3 Salt
Lake City Interim meeting was convened at 8:31 am MDT, Monday, May 20, 2019 by Mabud
Choudhury., P802.3cm TF Acting Chair.

Presentation #1:
Title: "Agenda and General Information, IEEE P802.3cm 400 Gb/s over Multimode Fiber Task Force"
Presenter: Mabud Choudhury
http://www.ieee802.org/3/cm/public/May19/agenda_3cm_01_0519.pdf

Mr. Choudhury welcomed attendees to the IEEE P802.3cm 400G over MMF TF meeting and requested
meeting participants to introduce themselves.

Acting Chair covered Task Force decorum, which includes noting that there should be no recording or
photography.

Acting Chair asked if anyone was attending from the press including those who would run a public blog
on this meeting? None responded.

Mr. Choudhury then proceeded with reviewing the **Agenda** and asked if there any modifications,
additions or deletions? There were none.

Motion #1:
Move to approve the Agenda for Salt Lake City Interim TF meeting, Slide 2 of agenda_3cm_01_0519.pdf
- Moved by Paul Kolesar
- Seconded by Steve Swanson

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

Approve March 11 & April 25, 2019 Minutes

Motion #2:
Move to approve meeting minutes, previously posted, for March 11, 2019 IEEE P802.3cm Task Force meetings - Co-Located Interim and TF meeting during Vancouver Plenary:
unapproved_meeting_minutes_3cm_01b_0319.pdf
And to approve previously posted April 25, 2019 Ad Hoc meeting minutes:
unapproved_minutes_3cm_adhoc_01_042519.pdf
- Moved by Paul Kolesar
- Seconded by Steve Swanson
- Motion approved by voice vote without objection. (Procedural > 50%)

Acting Chair then reviewed the goals for the meeting, big ticket items, access to the reflector and website, private area http://www.ieee802.org/3/cm/private/index.html (with username and password provided during meeting), TF contacts, and ground rules for the meeting.

Attendance: Mr. Choudhury advised the group of the IEEE meeting attendance tool and procedures, including both the attendance book and the web attendance tracking tool http://imat.ieee.org/ and provided the Interim meeting session IMAT password.

Acting Chair reviewed the IEEE structure for standards development and the bylaws by which the Task Force is governed.

IEEE Patent Policy: Mr. Choudhury showed the patent slides 1 to 4 (slides 16 to 19 of agenda_3cm_01_0519.pdf) and proceeded to read aloud slides 1 and 2. Mr. Choudhury made the call for potentially essential patents at, and none responded. Mr. Choudhury then read aloud slides 3 and 4.

Mr. Choudhury showed slide 20 of agenda_3cm_01_0519.pdf entitled "Participation in IEEE 802 Meetings" and read the slide aloud.

The Acting Chair reviewed overall the IEEE 802.3 Standards process and where the P802.3cm TF was in that process: Working Group Ballot Phase. The goals of closing comments against D2.0 and authorizing D2.1 for this meeting, of authorizing D3.0 for July 2019 Plenary meeting, and of completing the project/standard by December 2019 were presented.

The Acting Chair then showed the locations of the approved project documents – PAR, 5 Criteria and Objectives - for the TF and reviewed the TF objectives. He then reviewed the TF Timeline.

Acting Chair provided TF Working Group ballot results: slide 30 of agenda_3cm_01_0519.pdf

Acting Chair provided Ad Hoc report, summarizing 2 web/teleconference ad hoc meetings since March Plenary.

Titles and links for all presentations/contributions for this meeting were shown.

Liaison: IEEE 802.3 Ethernet Working Group DRAFT Liaison Communication to INCITS T11.2 Physical Layer Task Group was presented as an agenda item.

Schedule for TF meeting on Monday, May 20 and Tuesday, May 21 were reviewed. Acting Chair indicated that meeting on Tuesday, May 21 may not be necessary based on progress of agenda. He reminded everyone to check online schedule for latest room assignments.

Future meeting dates and locations were reviewed.

Note: At 9:05 am MDT (UTC -6) with the completion of presentation of "Agenda and General Information, IEEE P802.3cm 400 Gb/s over Multimode Fiber Task Force" Acting Chair designation switched from Mabud Choudhury to Jonathan Ingham.

Presentation #2:
Title: "Editorial report and comment agenda"
Presenter: Jonathan Ingham
ingham_3cm_02_0519.pdf
Chief Editor and Acting TF Chair Jonathan Ingham presented status and results for D2.0 WG ballot, key dates associated with D2.0, comments received, comment distribution table, comment distributions by clause and by draft, meeting goals related to comment resolution, list of comments to be resolved (11 comments total, with 4 associated hyperlinked presentations for 5 of the comments; select slides previous contributions from prior meetings were also presented) by Task Force during this meeting, and bucket motion for 47 comments.

Comment resolution began

Presentation #3 (slides from January 2019 TF contribution):
Title: "MMF TDECQ / SECQ discrepancies and corner cases"
Presenter: Piers Dawe
Reviewed slides 6-10 of dawe_3cm_01a_0119.pdf in support of comments [9, 14] Cursor tap position, [8, 7] Cursor tap magnitude, and [11, 10] Transition time.

Task Force took a break at 9:57 am MDT, resuming at 10:21 am MDT

Comment resolution resumed.

Straw Poll #1:
    For Comment ID 7, see P802d3cm_D2p0_comments_proposed_by_ID.pdf
    Do you agree with the change to 0.85?
- Y: 10
- N: 1

Presentation #3 (slides from P802.3cd TF March 2018 contribution):
Title: "Refining TDECQ"
Presenter: Piers Dawe

Reviewed slide 14 of dawe_3cd_01a_0318.pdf in support of comments [9, 14] Cursor tap position, [8, 7] Cursor tap magnitude.

Task Force took lunch break at 12:15 pm MDT, resuming at 1:46 pm MDT

Note: Robert Lingle, Jr. was available after TF meeting lunch break and carried out his role as Task Force Chair.

Comment resolution resumed.

Presentation #4:
Title: "Modal Noise Penalty for SR4.2. Re: Comment IDs 12, 38, and 39 against D2.0"
Presenter: Earl Parsons
[sun_3cm_01a_0519.pdf](sun_3cm_01a_0519.pdf)
This contribution reported on experimental modal noise measurements as a follow-up to requests made during the Vancouver meeting. Under near-worst case conditions the modal noise penalty was demonstrated to be less than 0.2 dB, which is in line with the comments made on the draft. Contribution in relation to comments [38, 39, 12] MN and MPN.
Technical discussion followed. Clarifying questions were asked and answered. Request made for more information on the plots explaining the data – the updated presentation (link above) fulfills that request.

Task Force took a break at 2:55 pm MDT, resuming at 3:25 pm MDT

Comment resolution resumed.

Presentation #5:
Title: "In support of comment #39 to increase allocation for modal noise penalty"
Presenter: Robert Lingle, Jr
lingle_3cm_01_0519.pdf
Contribution provides additional detail of data from 2008 work by Pepeljugoski et al. (pepeljugoski_01_0108.pdf) to support further analysis of modal noise penalty allocation. Suggest increasing the allocation for MN & MPN by 0.2 dB in support of comment 39. Also supported of adding an unallocated margin of 0.3 dB as suggested by comment 29.
Technical discussion followed. Clarifying questions were asked and answered.

Presentation #6:
Title: "Curve fitting to Petar Pepeljugoski's modal noise simulations, supporting P802.3cm d2.0 comment 38"
Presenter: Paul Kolesar
kolesar_3cm_01_0519.pdf
Contribution addresses comments regarding modal noise penalty, specifically comment 38. Based on projected curve-fit data and utilizing analysis from king_3cm_01_0319.pdf , 0.2 dB of additional power budget was proposed.
Technical discussion followed. Clarifying questions were asked and answered. A desire was expressed to follow through with re-running Petar Pepeljugoski's simulations with appropriate input parameter adjustments and elimination of the 1-mode and 2-mode VCSELs.

Presentation #7:
Title: "Proposed change to 400GBASE-SR4.2 specification. Re: Comment ID 29"
Presenter: Jonathan Ingham
http://www.ieee802.org/3/cm/public/May19/ingham_3cm_01b_0519.pdf
Proposal to make slight change to current 400GBASE-SR4.2 specification (Clause 150 D2.0) to ensure maximum component re-use and consistency (supporting broad market potential and economic feasibility) between the 400GBASE-SR4.2 specification and the 100G BiDi specification, in support of comment 29, Compatibility. Proposal also provides 0.3 dB change classified as unallocated margin that could be allocated to MN & MPN penalty, relevant to #38 and 39 also.
Technical discussion followed. Clarifying questions were asked and answered. Discussion about allocation for penalties (for max TDECQ).

Straw Poll #2:
For Comment ID 14, see P802d3cm_D2p0_comments_proposed_by_ID.pdf
Should a conditional TDECQ test with SECQ bandwidth be added to the draft?
- Y: 4
- N: 6

Straw Poll #3:
For Comment ID 56, see P802d3cm_D2p0_comments_proposed_by_ID.pdf
Do you accept the proposed response below?
- Y: 4
- N: 6
- Replace the fourth paragraph of 150.5.4 with "As examples, implementations may generate the SIGNAL_DETECT parameter values in response to the amplitude of the modulation of the optical signal or implementations may respond to the average optical power of the modulated optical signal."

Comment resolution completed.

Motion #3:
Move to:
– Accept the proposed responses to any unresolved comments listed in P802d3cm_D2p0_comments_proposed_bucket_by_clause.pdf, with all occurrences of "see proposed response" replaced with "see response" under Proposed Response.
– Generate Draft 2.1 for WG Recirculation from Draft 2.0 and closed comments"
- Moved by: Paul Kolesar   2nd: Jonathan Ingham
- Technical: >= 75%
- Results: Yes: 7   No: 0   Abstain: 3
- Motion Passes!

Final responses to comments against D.20 were posted after the meeting:
P802p3cm_D2p0_comments_final_by_clause.pdf
P802p3cm_D2p0_comments_final_by_ID.pdf

Unsatisfied negative comments against D2.0 were also posted after the meeting:
P802p3cm_D2p0_comments_unsatisfied_by_clause.pdf
P802p3cm_D2p0_comments_unsatisfied_by_ID.pdf

Liaison:
Reviewed and updated IEEE 802.3 Ethernet Working Group DRAFT Liaison Communication to INCITS T11.2 Physical Layer Task Group IEEE_802d3_to_T11-2_0519_draft_P802d3cm_May%202019.docx **.**
Provides IEEE P802.3cm project status and D2.1 to INCITS T11.2

Motion #4:
Move that:
the Task Force approves the text in IEEE 802.3 to INCITS T11.2 on project status and draft standard availability.docx with editorial license granted to the Chair (or his appointed agent) as a liaison to INCITS T11.2
- Moved by: Paul Kolesar   2nd: Earl Parsons
- Procedural: > 50%
- Motion approved by voice vote without objection.

Straw Poll on Attendance:
Attend 802.3 plenary, July 2019 Vienna, Austria:
- Y: 6   N: 1   M: 2

Attend 802.3 interim, September 2019 Indianapolis, IN, USA:
- Y: 4   N: 0   M: 4

Motion #5:
Move to Adjourn Plenary TF Meeting
- Moved by: Earl Parsons   2nd: Ramana Murty
- Motion approved by voice vote without objection. (Procedural > 50%)

The TF Interim Meeting was adjourned at 6:53 pm, MDT (UTC -6), Monday, March 20, 2019.

Next Meeting:
Next in-person IEEE 802.3cm Task Force meeting is scheduled for week of July 15th, 2019 for IEEE 802.3 Plenary, Vienna, Austria.

Appendix A: Attendees at the IEEE 802.3 400 Gb/s over Multimode Fiber Task Force during Salt Lake City Interim Meeting, 20 May 2019.
20 individuals signed in on Monday, 20 May, 8:31 am – 6:53 pm MDT (UTC -6)

	Last Name	First Name	Employer	Affiliation	20-May
1	Carlson	Craig	Marvell	Marvell	x
2	Chen	David	AOI	AOI	x
3	Choudhury	Mabud	OFS	OFS	x
4	Dawe	Piers	Mellanox	Mellanox	x
5	Dudek	Mike	Marvell	Marvell	x
6	Ingham	Jonathan	Foxconn Interconnect Technology	Foxconn Interconnect Technology	x
7	King	Jonathan	Finisar	Finisar	x
8	Kolesar	Paul	CME Consulting	CommScope	x
9	Law	David	HPE	HPE	x
10	Lingle, Jr	Robert	OFS	OFS	x
11	Maki	Jeff	Juniper Networks	Juniper Networks	x
12	Masuda	Takeo	OITDA/PETRA	OITDA/PETRA	x
13	Murty	Ramana	Broadcom	Broadcom	x
14	Neveux	Paul	Superior Essex	Superior Essex	x
15	Parsons	Earl	CommScope	CommScope	x
16	Pepper	Jerry	Ixia/Keysight	Keysight	x
17	Pham	Phong	US Conec	US Conec	x
18	Swanson	Steve	Corning	Corning	x
19	Willis	Paul	UNH-IOL	UNH-IOL	x
20	Young	Adrian	Leviton Mfg.	Leviton Mfg.	x