

IEEE 802.3 Next-Gen 200 Gb/s & 400 Gb/s Multimode Fiber PHYs Study Group Opening Report

Robert Lingle Jr
OFS
Rosemont, Illinois
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IEEE 802.3 NGMMF Study Group Information

Study Group Organization

Robert Lingle Jr, IEEE 802.3 NGMMF Study Group Chair

Mabud Choudhury, IEEE 802.3 NGMMF Study Group Secretary

Study Group charter: to develop a PAR and CSD responses for "Next-generation 200 Gb/s and 400 Gb/s PHYs over fewer MMF pairs than in existing Ethernet projects and standards."

Study Group web and reflector information

Reflector: <http://www.ieee802.org/3/NGMMF/reflector.html>

Home page: <http://ieee802.org/3/NGMMF/index.html>

IEEE 802.3 NGMMF Study Group Activities since November 2017 plenary

Held six ad hoc calls

- Average attendance of 30
- Reviewed 14 contributions

Met during the January 2018 interim meeting series

- Major items discussed, decisions made and actions
 - Heard 16 contributions; 35 attendees over two days
 - Adopted nine objectives
 - Adopted draft PAR, CSD responses and pre-submitted
- Current status
 - *Completed draft objectives, CSD and PAR for proposed project*
 - PAR: <https://mentor.ieee.org/802-ec/dcn/18/ec-18-0017-01-00EC-ieee-p802-3cm-draft-par.pdf>
 - [CSD/5C]: <https://mentor.ieee.org/802-ec/dcn/18/ec-18-0018-01-00EC-ieee-p802-3cm-draft-csd.pdf>
 - Objectives: http://ieee802.org/3/NGMMF/Adopted_Objectives_NGMMF_01_23jan18.pdf

Objectives Adopted by SG in Geneva*

1. Support full-duplex operation only
2. Preserve the Ethernet frame format utilizing the Ethernet MAC
3. Preserve the minimum and Maximum FrameSize of current Ethernet standard
4. Provide appropriate support for OTN
5. Specify optional Energy Efficient Ethernet (EEE) capability
6. Support a BER of better than or equal to 10^{-13} at the MAC/PLS service interface (or the frame loss ratio equivalent)
7. Support a MAC data rate of 400 Gb/s
8. Define a physical layer specification that supports 400 Gb/s operation over 8 pairs of MMF with lengths up to at least 100m
9. Define a physical layer specification that supports 400 Gb/s operation over 4 pairs of MMF with lengths up to at least 100m

*Note: objectives have not yet been approved by 802.3 WG vote

A motion failed in Geneva for a 200 Gb/s objective over 1-pair MMF

1. Straw polls #2 and #3 regarding a motion to adopt a 200 Gb/s objective over 1-pair of OM4 MMF showed strong support [16 in favor, 0 against, room count of 24]
2. However a corresponding Motion #4 failed by a vote of [13 Yes, 8 No, and 7 Abstain]
3. Unapproved Minutes for reference:
http://www.ieee802.org/3/NGMMF/public/Jan18/unapproved_meeting_notes_ngmmf_01_jan18.pdf
4. Due to time pressure from the market on the 4-pair objective for 400 Gb/s, the group removed 200 Gb/s from the PAR and CSD responses and pre-submitted.
5. Significant new evidence for Broad Market Potential of a 200G objective over 1-pair is being presented this week for re-consideration

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Meeting week plan

Goals for the meeting

- There is a market need to create a baseline proposal for 400 Gb/s objective over 4-pairs in 2018, indicating a need to become a Task Force out of this Plenary
- Respond to comments on pre-submitted PAR and CSD
- Request permission to move to Task Force

Big ticket items

- Review contributions to strengthen Broad Market Potential and Distinct Identity for having both 4-pair and 8-pair objectives at 400 Gb/s in the project
- Review additional contributions on Broad Market Potential and Technical Feasibility for 200 Gb/s objective over 1-pair MMF
 - Anticipate a motion & debate Wednesday morning in 8 -10:15am time slot
- Respond to comments on PAR and CSD
 - Request permission to restore 200 Gb/s to the scope of the project, if objective is adopted

Questions?

Thank you!