

IEEE liaison report

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Tom Palkert

Mabud Choudhury

Meeting status

This covers IEEE 802.3 activities between the 1Q2020 and OIF meeting and the May 2020 virtual 2Q OIF meeting. This would have included the planned March 2020 IEEE 802 plenary that was to have been held in Atlanta, but since this meeting was canceled, the results of a series of virtual meetings held between 16 March and 7 May is described. Note that the IEEE 802.3 interim meeting originally planned for the week of 18 May 2020 in Pasadena, and the IEEE 802 plenary originally planned for the week of 15 July 2020 has also been canceled.

IEEE 802.3 Standards in force

- The current version in force is IEEE Std 802.3-2018 – Approved 14 June 2018, Published 31 August 2018
 - This incorporates 802.3bw, 802.3bp, 802.3bq, 802.3br, 802.3by, 802.3bz, 802.3bn, 802.3bu, 802.3bv, 802.3bs, 802.3cc, and Corrigendum 1.
- IEEE Std 802.3bt-2018, Power over Ethernet over 4 Pairs, approved 27 September 2018, published 31 January 2019
- IEEE Std 802.3cb-2018, 2.5 Gb/s and 5 Gb/s Operation over Backplane, approved 27 September 2018, published 4 January 2019
- IEEE Std 802.3cd-2018, Media Access Control Parameters for 50 Gb/s and Physical Layers and Management Parameters for 50 Gb/s, 100 Gb/s, and 200 Gb/s Operation, approved 6 December 2018, published 15 February 2019
- IEEE Std 802.3cn-2019, Physical Layers and Management Parameters for 50 Gb/s, 200 Gb/s, and 400 Gb/s Operation over Single-Mode Fiber, approved 7 November 2019, published 20 December 2019
- IEEE Std 802.3cg-2019, Physical Layer Specifications and Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of Conductors, approved 7 November 2019, published 5 February 2020
- IEEE Std 802.3cm-2020, Physical Layer and Management Parameters for 400 Gb/s over Multimode Fiber, approved 31 January 2020, [published 30 March 2020](#)
- [IEEE Std 802.3cq-2020, Maintenance #13: Power over Ethernet 2 pairs, approved 30 January 2020, published 13 March 2020](#)
- Ethernet MIBs –IEEE Std 802.3.1-2013 published on 2 August 2013
- Ethernet YANG models – IEEE Std 802.3.2-2019 approved 26 March 2019, published 21 June 2019

IEEE 802.3 Task Forces, Study Groups, CFIs

- P802.3ca 25 Gb/s and 50 Gb/s-Ethernet Passive Optical Networks Task Force
- P802.3ch Multi-Gig Automotive PHY Task Force
- P802.3ck 100 Gb/s per Lane Electrical Task Force
- P802.3cp Bidirectional 10 Gb/s, 25 Gb/s, and 50 Gb/s Optical Access PHYs Task Force
- ~~P802.3cq Power over Ethernet over 2 Pairs (Maintenance #13) Task Force~~
- P802.3cr Isolation (Maintenance #14) Task Force
- P802.3cs Ethernet Access PMDs for Central Office Consolidation Task Force
- P802.3ct 100 Gb/s Ethernet over DWDM systems Task Force
- P802.3cu 100 Gb/s per lane optical PHYs for 100 GbE and 400 GbE Task Force
- P802.3cv Power over Ethernet 4 Pairs (Maintenance #15) Task Force
- P802.3cw 400 Gb/s Ethernet over DWDM systems Task Force
- P802.3cx Improving PTP Timestamping Accuracy Task Force
- (P802.3cy) Greater than 10 Gb/s Automotive Ethernet Electrical PHYs Study Group
- (P802.3cz) Multi-Gigabit Automotive Optical PHY Study Group
- (P802.3da) 10SPE Multidrop Enhancements Study Group
- (P802.3db) 100 Gb/s Wavelength Short Reach PHYs Study Group

- New Ethernet Applications Ad Hoc

P802.3ck 100 Gb/s per lane Electrical Task Force

- 12th through 19th (Teleconference) Task Force meetings 18, 25, 30 March, 1, 8, 22, 29 April, 6 May 2020
 - Meeting Materials: http://ieee802.org/3/ck/public/20_03/index.html
 - Minutes 18 March: http://ieee802.org/3/ck/public/20_03/minutes_3ck_01a_0320_unapproved.pdf
 - Minutes 25 March: http://ieee802.org/3/ck/public/20_03/minutes_3ck_02_0320_unapproved.pdf
 - Minutes 30 March: http://ieee802.org/3/ck/public/20_03/minutes_3ck_03a_0320_unapproved.pdf
 - Minutes 1 April: http://ieee802.org/3/ck/public/20_03/minutes_3ck_04a_0320_unapproved.pdf
 - Minutes 8 April: http://ieee802.org/3/ck/public/20_03/minutes_3ck_05_0320_unapproved.pdf
 - Minutes 22 April: http://www.ieee802.org/3/ck/public/20_03/minutes_3ck_06_0320_unapproved.pdf
 - Minutes 29 April: http://ieee802.org/3/ck/public/20_03/minutes_3ck_07_0320_unapproved.pdf
 - Minutes 6 May: **Not Yet Posted**
- Resolved 180 of 215 comments (51 carried over from Draft 1.0) against Draft 1.1 in March/April/May Telephonic Interim series and agreed to produce Draft 1.2 for continued Task Force review. 35 comments not closed and will be carried over to next round.

P802.3ck 100 Gb/s per lane Electrical Task Force

Adopted Objectives (1 of 2)

- Support a MAC data rate of 100 Gb/s, 200 Gb/s, and 400 Gb/s
- Support full-duplex operation only
- Preserve the Ethernet frame format utilizing the Ethernet MAC
- Preserve minimum and maximum FrameSize of current IEEE 802.3 standard
- Support the existing bit error ratios (BERs) at the MAC/PLS service interface (or the frame loss ratio equivalent) for 100 Gb/s, 200 Gb/s, and 400 Gb/s Ethernet

- Define a single-lane 100 Gb/s Attachment Unit interface (AUI) for chip-to-module applications, compatible with PMDs based on 100 Gb/s per lane optical signaling
- Define a single-lane 100 Gb/s Attachment Unit Interface (AUI) for chip-to-chip applications
- Define a single-lane 100 Gb/s PHY for operation over electrical backplanes supporting an insertion loss ≤ 28 dB at 26.56 GHz.
- Define a single-lane 100 Gb/s PHY for operation over twin-axial copper cables with lengths up to at least 2m

P802.3ck 100 Gb/s per lane Electrical Task Force

Adopted Objectives (2 of 2)

- Define a two-lane 200 Gb/s Attachment Unit interface (AUI) for chip-to-module applications, compatible with PMDs based on 100 Gb/s per lane optical signaling
 - Define a two-lane 200 Gb/s Attachment Unit Interface (AUI) for chip-to-chip applications
 - Define a two-lane 200 Gb/s PHY for operation over electrical backplanes supporting an insertion loss ≤ 28 dB at 26.56 GHz.
 - Define a two-lane 200 Gb/s PHY for operation over twin-axial copper cables with lengths up to at least 2m
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- Define a four-lane 400 Gb/s Attachment Unit interface (AUI) for chip-to-module applications, compatible with PMDs based on 100 Gb/s per lane optical signaling
 - Define a four-lane 400 Gb/s Attachment Unit Interface (AUI) for chip-to-chip applications
 - Define a four-lane 400 Gb/s PHY for operation over electrical backplanes supporting an insertion loss ≤ 28 dB at 26.56 GHz.
 - Define a four-lane 400 Gb/s PHY for operation over twin-axial copper cables with lengths up to at least 2m

P802.3cp Bidirectional 10 Gb/s, 20 Gb/s, and 50 Gb/s Optical Access PHYs Task Force

- 7th Task Force meeting (Teleconference) 20 March 2020
 - Meeting Materials: <http://ieee802.org/3/cp/public/2003/index.html>
 - Meeting Minutes: http://ieee802.org/3/cp/public/2003/P802.3cp_unapproved_minutes_2003_Teleconf.pdf
- 8th Task Force meeting (Teleconference) 6 May 2020
 - Meeting Materials: <http://ieee802.org/3/cp/public/2005/index.html>
 - Meeting Minutes: http://ieee802.org/3/cp/public/2005/P802.3cp_unapproved_minutes_2005_Telecon.pdf
- Resolved 36 comments against Draft 1.2 in March teleconference and authorized the editor to produce Draft 1.3 for continued Task Force review (next review cycle expected to close 24 April)
- Resolved 5 comments against Draft 1.3 in May teleconference, authorizing the editor to produce Draft 1.4, which will be submitted to the 802.3 WG in anticipation of a request to Working Group ballot.

P802.3cu 100 Gb/s per lane Optical PHYs Task Force

- 6th through 10th Task Force meetings (Teleconference) 17, 24, 31 March, 7, 14 April 2020
 - Meeting Materials: <http://www.ieee802.org/3/cu/public/March20/>
 - Minutes 17 March: http://www.ieee802.org/3/cu/public/March20/minutes_3cu_031720_approved.pdf
 - Minutes 24 March: http://www.ieee802.org/3/cu/public/March20/minutes_3cu_032420_unapproved.pdf
 - Minutes 31 March: http://www.ieee802.org/3/cu/public/March20/minutes_3cu_033120.pdf
 - Minutes 7 April: http://www.ieee802.org/3/cu/public/March20/minutes_3cu_040720.pdf
 - Minutes 14 April: http://www.ieee802.org/3/cu/public/March20/minutes_3cu_041420.pdf
 - Minutes 21 April: http://www.ieee802.org/3/cu/public/March20/minutes_3cu_042120.pdf
- Resolved 122 comments against Draft 2.0 and agreed to produce Draft 2.1 for Working Group ballot recirculation

P802.3cu 100 Gb/s per lane Optical PHYs Task Force

Adopted objectives – Page 1/2

- Support a MAC data rate of 100 Gb/s
- Support a MAC data rate of 400 Gb/s
- Support full-duplex operation only
- Preserve the Ethernet frame format utilizing the Ethernet MAC
- Preserve minimum and maximum FrameSize of current IEEE 802.3 standard
- Provide appropriate support for OTN
- Support a BER of better than or equal to 10^{-12} at the MAC/PLS service interface (or the frame loss ratio equivalent) for 100 Gb/s operation
- Support a BER of better than or equal to 10^{-13} at the MAC/PLS service interface (or the frame loss ratio equivalent) for 400 Gb/s operation

P802.3cu 100 Gb/s per lane Optical PHYs (future)

Task Force

Adopted objectives – Page 1/2

- Define a single-wavelength 100 Gb/s PHY for operation over SMF with lengths up to at least 2 km
- Define a single-wavelength 100 Gb/s PHY for operation over SMF with lengths up to at least 10 km
- Define a four-wavelength 400 Gb/s PHY for operation over SMF with lengths up to at least 2 km
- Define a four-wavelength 400 Gb/s PHY for operation over SMF with lengths up to at least 6 km

(P802.3db) 100 Gb/s Wavelength Short Reach PHYs Study Group

- 2nd through 4th Study Group meetings (Teleconference) February 13, March 26, April 9
 - Meeting Materials: <http://www.ieee802.org/3/100GSR/public/adhoc/presentations/index.html>
 - Feb 13 minutes: http://www.ieee802.org/3/100GSR/public/adhoc/presentations/unapproved_minutes_100GSR_adhoc_01_021320.pdf
 - Mar 26 minutes: http://www.ieee802.org/3/100GSR/public/adhoc/presentations/unapproved_minutes_100GSR_adhoc_01_032620.pdf
 - Apr 9 minutes: http://www.ieee802.org/3/100GSR/public/adhoc/presentations/unapproved_minutes_100GSR_adhoc_01_040920.pdf
 - Apr 22 minutes: http://www.ieee802.org/3/100GSR/public/adhoc/presentations/unapproved_minutes_100GSR_adhoc_01_042320.pdf
 - May 7 minutes: **Not Yet Posted**
- Adopted a [PAR](#), [CSD](#), and [Objectives](#) at January interim, intending to ask for 802.3 approval at the March plenary. Rules changes implemented to advance the PAR absent a face-to-face plenary meetings.
- Discussion of possible new objectives – including separate objectives for switch-to-server minimizing cost and switch-to-switch maximizing reach - at teleconference interim and ad hoc meetings. However, no new objectives were adopted as Study Group, but may be considered as Task Force.
- Only one comment against CSD. Resolved by SG on May 20. Updated CSD.
- IEEE 802.3 Working Group approved PAR, updated CSD, and Objectives (approved by SG in January) May 21
- IEEE-SA Standard Board approved PAR, June 4. IEEE P802.3db Standard for Ethernet Amendment: Physical Layer Specifications and Management Parameters for 100 Gb/s, 200 Gb/s, and 400 Gb/s Operation over Optical Fiber using 100 Gb/s Signaling
- First TF meeting June 11.

(P802.3db) 100 Gb/s Wavelength Short Reach PHYs

Adopted Objectives (1 of 2)

1. Support a MAC data rate of 100 Gb/s, 200 Gb/s and 400 Gb/s
2. Support full-duplex operation only
3. Preserve the Ethernet frame format utilizing the Ethernet MAC
4. Preserve minimum and maximum FrameSize of current IEEE 802.3 standard
5. Provide appropriate support for OTN
6. Support a BER of better than or equal to 10^{-12} at the MAC/PLS service interface (or the frame loss ratio equivalent) for 100 Gb/s operation
7. Support a BER of better than or equal to 10^{-13} at the MAC/PLS service interface (or the frame loss ratio equivalent) for 200 Gb/s and 400 Gb/s operation

(P802.3db) 100 Gb/s Wavelength Short Reach PHYs

Adopted Objectives (2 of 2)

8. Define a physical layer specification that supports 100 Gb/s operation over 1 pair of MMF with lengths up to at least 50 m
Support full-duplex operation only
9. Define a physical layer specification that supports 200 Gb/s operation over 2 pairs of MMF with lengths up to at least 50 m
10. Define a physical layer specification that supports 400 Gb/s operation over 4 pairs of MMF with lengths up to at least 50 m

New Ethernet Applications (NEA) Ad Hoc

- BWA Tutorial Session (Teleconference) 23 March 2020
 - Meeting Materials:
http://www.ieee802.org/3/ad_hoc/ngrates/public/calls/20_0323/index.html
 - Meeting Minutes:
http://www.ieee802.org/3/ad_hoc/ngrates/public/calls/20_0323/minutes_nea_0320_unapproved.pdf
- One session (Teleconference) 30 April 2020
 - Meeting Materials:
http://ieee802.org/3/ad_hoc/ngrates/public/calls/20_0430/index.html
 - Meeting Minutes:
http://ieee802.org/3/ad_hoc/ngrates/public/calls/20_0430/minutes_nea_0420_unapproved.pdf
- Following the 23 March tutorial session, a 10-day email ballot was conducted to approve the [BWA report](#), which has now been published.
- Discussion of possible “next rate” (beyond 400GbE) call for interest at 30 April teleconference

Future Meetings

Meeting	Location	Dates
IEEE 802.3 interim	Pasadena, CA (cancelled)	18-22 May 2020
IEEE 802 plenary	Montreal, QC, Canada (cancelled)	13-16 July 2020
IEEE 802.3 interim	Kansas City, MO	21-25 September 2020
IEEE 802 plenary	Bangkok, Thailand	9-12 November 2020
IEEE 802.3 interim	TBD	18-22 January 2021
IEEE 802 plenary	Denver, CO	14-18 March 2021
IEEE 802.3 interim	TBD	17-21 May 2021
IEEE 802 plenary	Madrid	12-15 July 2021

Upcoming meeting details at: <http://ieee802.org/3/interims/index.html>