

August 2020 IEEE Liaison Report

T11-2020-00184-v000

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IEEE 802.3 Task Forces, Study Groups, CFIs

- P802.3ck 100 Gb/s per Lane Electrical Task Force
- P802.3cu 100 Gb/s per lane optical PHYs for 100 GbE and 400 GbE Task Force
- P802.3db 100 Gb/s, 200 Gb/s, and 400 Gb/s Short Reach Fiber Task Force
- New Ethernet Applications Ad Hoc
- Future Meetings
- Liaison Letters from IEEE 802.3 to INCITS T11

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

- 20th through 28th (Teleconference) Task Force meetings, 30 June, 6, 8, 15, 21, 22, 28, 29 July, 12 August 2020
 - Meeting Materials: http://ieee802.org/3/ck/public/20_07/index.html
 - Meeting Minutes: Not yet posted
- Considered 300 comments (265 new comments against Draft 1.2, 35 comments not closed against Draft 1.1 carried over), intending to produce Draft 1.3 for continued Task Force Review
- As of Aug 12, all comments have been addressed and draft 1.3 will be created and posted around first week of Sept. Ballot will close around week of Sept 20. Comment resolution will begin around week of Oct 18.

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

- 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

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

- 11th through 13th Task Force meetings (Teleconference) 19, 26 May, 2 June 2020
 - Meeting Materials: <http://www.ieee802.org/3/cu/public/May20/>
 - Minutes 19 May: http://www.ieee802.org/3/cu/public/May20/minutes_3cu_051920.pdf
 - Minutes 26 May: http://www.ieee802.org/3/cu/public/May20/minutes_3cu_052620_v2.pdf
 - Minutes 2 June: http://www.ieee802.org/3/cu/public/May20/minutes_3cu_060220.pdf
- Resolved 122 comments against Draft 2.0 and agreed to produce Draft 2.1 for Working Group ballot recirculation
- Resolved 33 comments against Draft 2.1 in May, June calls and agreed to produce Draft 2.2 for Working Group ballot recirculation
- Received conditional approval at the May 21 IEEE 802.3 Working Group meeting to proceed to SA ballot once the Working Group ballot process is complete
- 21 comments were received against Draft 2.2, but all were withdrawn, allowing the conditions to be met to produce Draft 3.0 from Draft 2.2 with no technical change to allow the start of Standards Association ballot. Therefore, no P802.3cu meeting was held in the July plenary cycle

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, 200 Gb/s, and 400 Gb/s Short Reach Fiber Task Force

- First Task Force meeting (Teleconference) 11 June 2020
 - Meeting Materials: <http://www.ieee802.org/3/db/public/June20/>
 - Meeting Minutes: http://www.ieee802.org/3/db/public/June20/unapproved_meeting_minutes_3db_01a_0620.pdf
- 2nd Task Force meeting (Teleconference) 14 July 2020
 - Meeting Materials: <http://www.ieee802.org/3/db/public/July20/>
 - Meeting Minutes: http://www.ieee802.org/3/db/public/July20/unapproved_meeting_minutes_3db_01_0720.pdf
- Adopted a [PAR](#), [CSD](#), and [Objectives](#) at January interim, intending to ask for 802.3 approval at the March plenary. Rules changes needed to advance the PAR absent a face-to-face plenary meeting. Motions were passed in the May 802.3 teleconference to adopt the objectives and forward the PAR, CSD onward for EC and NesCom approval. An initial teleconference was held in June to discuss process and appoint the Task Force chair.
- Adopted Clause 119 as the PCS/FEC and Clause 120 as the PMA for all 200G and 400G PHYs in the project. Adopted Clause 82 as the PCS and Clause 91 RS(544) as the FEC, and Clause 135 as the PMA for all 100G PHYs in the project.
- Several Straw Polls conducted regarding whether the objectives should be changed from the current 50m objective, to separate objectives for server attachment (20-30m) and for switch-to-switch applications (80-100m). No decisions taken in this regard.

P802.3db 100 Gb/s, 200 Gb/s, and 400 Gb/s Short Reach Fiber Task Force

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, 200 Gb/s, and 400 Gb/s Short Reach Fiber Task Force

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
9. Support full-duplex operation only
10. Define a physical layer specification that supports 200 Gb/s operation over 2 pairs of MMF with lengths up to at least 50 m
11. 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

- One session (Teleconference) 4 June 2020
 - Meeting Materials: http://ieee802.org/3/ad_hoc/ngrates/public/calls/20_0604/index.html
 - Meeting Minutes: http://ieee802.org/3/ad_hoc/ngrates/public/calls/20_0604/minutes_nea_200604_unapproved.pdf
- One session (Teleconference) 27 July 2020
 - Meeting Materials: http://ieee802.org/3/ad_hoc/ngrates/public/calls/20_0727/index.html
 - Meeting Minutes: http://ieee802.org/3/ad_hoc/ngrates/public/calls/20_0727/minutes_nea_a_200727_unapproved.pdf
- Discussion of ICAID renewal and possible “next rate” (beyond 400GbE) call for interest at 4 June teleconference. A possible timeframe for a CFI could be March 2021
- A session planned during the two plenary weeks was canceled after no comments were received on the ICAID renewal, which was confirmed in the closing 802.3 Working Group meeting on 23 July.
- Discussion of beyond 400GbE CFI and 200G per lane technologies in 27 July meeting. A straw poll revealed more support for holding a beyond 400GbE CFI in November 2020 rather than March 2021.

Future Meetings

Meeting	Location	Dates
IEEE 802.3 interim	Virtual	21-25 September 2020
IEEE 802 plenary	Virtual	2-12 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
IEEE 802.3 interim	TBD	13-17 September 2021
IEEE 802 plenary	Vancouver	15-18 November 2021

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

Liaison Letters from IEEE 802.3 to INCITS T11 (1 of 2)

https://www.ieee802.org/3/minutes/jul20/outgoing/IEEE_802d3_to_T11_2_0720_draft2.pdf

Dear Mr. Palkert and members of INCITS T11.2,

We hope this letter finds you safe and well during this unprecedented time. We would like to offer an update on the progress of our Task Force since our January meeting. IEEE P802.3ck (100 Gb/s, 200 Gb/s, and 400 Gb/s Electrical Interfaces Task Force) has completed our second and third round of task force reviews resulting in Draft 1.3 (attached).

We will continue task force reviews until we reach technical completeness.

We look forward to continued communications as both our projects/drafts progress.

Sincerely, David Law

Chair, IEEE 802.3 Ethernet Working Group

IEEE 802.3 Ethernet Working Group DRAFT Liaison Communication

Source: IEEE 802.3 Working Group¹
To: Tom Palkert
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From: David Law
Chair, IEEE 802.3 Ethernet Working Group
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Subject: Status of IEEE P802.3ck Task Force
Approval: Agreed to at IEEE 802.3 Plenary meeting, July 23, 2020

Dear Mr. Palkert and members of INCITS T11.2,

We hope this letter finds you safe and well during this unprecedented time. We would like to offer an update on the progress of our Task Force since our January meeting. IEEE P802.3ck (100 Gb/s, 200 Gb/s, and 400 Gb/s Electrical Interfaces Task Force) has completed our second and third round of task force reviews resulting in Draft 1.3 (attached). We will continue task force reviews until we reach technical completeness.

We look forward to continued communications as both our projects/drafts progress.

Sincerely,

David Law

¹ This document solely represents the views of the IEEE 802.3 Working Group, and does not necessarily represent a position of the IEEE, the IEEE Standards Association, or IEEE 802

Liaison Letters from IEEE 802.3 to INCITS T11 (2 of 2)

https://www.ieee802.org/3/minutes/jul20/outgoing/IEEE_802d3db_to_INCITS_T11d2_0720_draft_v3.pdf

Dear Mr. Palkert, Mr. Carlson and members of INCITS T11.2 and T11.3,

IEEE P802.3db (100 Gb/s, 200 Gb/s, and 400 Gb/s Short Reach Fiber Task Force) has adopted objectives

(http://www.ieee802.org/3/db/P802d3db_Objectives_Approved_May_2020.pdf).

We would like to foster an exchange of information on 100 Gb/s signaling for MMF optical links. You can find our latest meeting materials from our July, 2020 meeting at <http://www.ieee802.org/3/db/public/July20/>

We hope you find these helpful as you have a fruitful on-line meeting in August. We look forward to continued communications as both our projects/drafts progress.

Sincerely,

David Law

Chair, IEEE 802.3 Ethernet Working Group

IEEE 802.3 Ethernet Working Group DRAFT Liaison Communication

Source: IEEE 802.3 Working Group¹

To: Tom Palkert
Chair, INCITS T11.2 Fibre Channel Physical Variants Task Group
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From: David Law
Chair, IEEE 802.3 Ethernet Working Group
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Subject: Status of IEEE P802.3db Task Force

Approval: Agreed to at IEEE 802.3 Plenary meeting, July 23, 2020

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