

Title	IEEE 802.3 Liaison Report (Dec 2022)
Source	Tom Palkert (MACOM), Mabud Choudury (OFS)
Date	8 December 2022 T11-2022-00404-V00
Abstract	This liaison report covers IEEE 802.3 activities between the October and December 2022 T11 plenary meetings. This includes the 802.3 November 802 hybrid plenary meeting in Bangkok, Thailand/virtual and October and November 2022 802.3 TF meetings

IEEE 802.3 Standards in force

- The current version in force is **IEEE Std 802.3™-2022 (7024 pages!)** Approved 13 May 2022, **published 29 July 2022**
 - This incorporates 802.3bt, 802.3cb, 802.3cd, 802.3cn, 802.3cg, 802.3cm, 802.3cq, 802.3ch, 802.3ca, 802.3cr, 802.3cu, 802.3cv, 802.3ct, and 802.3cp
- IEEE Std 802.3dd™-2022, Power over Data Lines of Single Pair Ethernet – Approved 16 June 2022, published September 2022
- IEEE Std 802.3cs™-2022, Physical Layers and Management Parameters for Increased-Reach Point-to-Multipoint Ethernet Optical Subscriber Access (Super-PON), published 21 September 2022
- IEEE Std 802.3.1™-2013, Ethernet MIBs, published 2 August 2013
- IEEE Std 802.3.2™-2019, YANG Data Model Definitions – approved 26 March 2019, published 21 June 2019

IEEE 802.3 Task Forces, Study Groups, CFIs

- The IEEE 802.3 Working Group develops standards for Ethernet networks. We have a number of active projects, study groups, and ad hocs as listed below:
 - IEEE P802.3ck [100 Gb/s, 200 Gb/s, and 400 Gb/s Electrical Interfaces Task Force](#).
 - IEEE P802.3cs [Increased-reach Ethernet optical subscriber access \(Super-PON\) Task Force](#).
 - IEEE P802.3cw [400 Gb/s over DWDM systems Task Force](#).
 - IEEE P802.3cx [Improved PTP Timestamping Accuracy Task Force](#).
 - IEEE P802.3cy [Greater than 10 Gb/s Electrical Automotive Ethernet Task Force](#).
 - IEEE P802.3cz [Multi-Gigabit Optical Automotive Ethernet Task Force](#).
 - IEEE P802.3da [10 Mb/s Single Pair Multidrop Segments Enhancement Task Force](#).
 - IEEE P802.3db [100 Gb/s, 200 Gb/s, and 400 Gb/s Short Reach Fiber Task Force](#).
 - IEEE P802.3 (IEEE 802.3dc) [Revision to IEEE Std 802.3-2018 Maintenance #16 Task Force](#).
 - IEEE P802.3dd [Power over Data Lines of Single Pair Ethernet \(Maintenance #17\) Task Force](#).
 - IEEE P802.3de [Time Synchronization for Point-to-Point Single Pair Ethernet Task Force](#).
 - IEEE P802.3df [200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet Task Force](#).
 - IEEE P802.3dg [100 Mb/s Long-Reach Single Pair Ethernet Task Force](#).
 - IEEE P802.3dh [Multi-Gigabit Automotive Ethernet over Plastic Optical Fiber Task Force](#).
 - IEEE 802.3 [Greater than 50 Gb/s Bidirectional Optical Access PHYs Study Group](#).
 - IEEE 802.3 [New Ethernet Applications Ad Hoc](#).
 - IEEE 802.3 [PDCC Ad Hoc](#).
- No Call For Interest (CFI) currently

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

- 55th meeting 11-12 July
 - **D3.3 is final draft for P802.3ck project**
- SA ballot completed, submitted to RevCom for approval
 - RevCom Meeting: 19-20 September 2022; IEEE-SA Standards Board Meeting: 21-22 September 2022
 - RevCom and IEEE SASB are last 2 required approvals before publication.
Approved!
- Approval Date: **21 September 2022**
- Target Publication Date: **December 2022**

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

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

- IEEE SA 2nd recirculation ballot/D3.2
 - Opened: 05 July 2022. Closed: 20 July 2022
 - No comments against D3.2. No new negative votes
 - **D3.2 is final draft for P802.db project**
- SA ballot completed, submitted to RevCom for approval
 - RevCom Meeting: 19-20 September 2022; IEEE-SA Standards Board Meeting: 21-22 September 2022
 - RevCom and IEEE SASB are last 2 required approvals before publication. **Approved!**
- Approval Date: **21 September 2022**
- Target Publication Date: **December 2022**

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. 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
11. Define a physical layer specification that supports 100 Gb/s operation over 1 pair of MMF with lengths up to at least 100 m
12. Define a physical layer specification that supports 200 Gb/s operation over 2 pairs of MMF with lengths up to at least 100 m
13. Define a physical layer specification that supports 400 Gb/s operation over 4 pairs of MMF with lengths up to at least 100 m

P802.3df 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet Task Force

- Interim Meeting (teleconference) Sept 2022
 - Meeting materials: https://www.ieee802.org/3/df/public/22_09/index.html
 - Mtg minutes: https://www.ieee802.org/3/df/public/22_09/minutes_3df_2209_approved.pdf
 - Adopted link training baseline for 800G-CR8 and 800G-KR8 PMDs based on https://www.ieee802.org/3/df/public/22_09/lusted_3df_01a_2209.pdf
- Meeting (teleconference) Oct 2022
 - Meeting materials: https://www.ieee802.org/3/df/public/22_10/index.html . 22 technical presentations
 - Mtg minutes: https://www.ieee802.org/3/df/public/22_10/minutes_3df_2210_unapproved.pdf
 - Adopted baseline for 800GbE PCS/FEC/PMA for PHYs using 8 x 100 PMD lanes based on https://www.ieee802.org/3/df/public/22_10/22_1004/shrikhande_3df_01a_221004.pdf
 - Generate draft D1.0 based on comment resolution of D0.2
- Plenary Meeting (Bangkok - Hybrid) Nov 2022
 - Meeting materials: https://www.ieee802.org/3/df/public/22_11/index.html . 31 technical presentations.
 - Mtg minutes: https://www.ieee802.org/3/df/public/22_11/minutes_3df_2211_unapproved.pdf
 - Adopted RS(544,514,10) as the FEC encoding for the 200G/lane AUIs (C2M and C2C)
 - Adopted Differential PAM4 signaling as the basis for all the 200 Gb/s per lane AUIs (C2M and C2C)
- Meeting (teleconference) Dec 2022
 - Meeting materials: https://www.ieee802.org/3/df/public/22_12/index.html
 - Meetings Scheduled for: December 6, 7, 8, 13, 14, 15 (all 9 am to 1 pm EST)

IEEE P802.3 df Objectives

- **Non-Rate Specific**

- 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 a BER of better than or equal to 10^{-13} at the MAC/PLS service interface (or the frame loss ratio equivalent)
- Provide support to enable mapping over OTN

- ~~**200 Gb/s Related**~~

- ~~• Support a MAC data rate of 200 Gb/s~~
- ~~• Support optional single lane 200 Gb/s attachment unit interfaces for chip to module and chip to chip applications~~
- ~~• Define a physical layer specification that supports 200 Gb/s operation:~~
 - ~~• over 1 pair of copper twin axial cables in each direction with a reach of up to at least 1.0 meter~~
 - ~~• over 1 pair of SMF with lengths up to at least 500 m~~
 - ~~• over 1 pair of SMF with lengths up to at least 2 km~~

- **400 Gb/s Related**

- Support a MAC data rate of 400 Gb/s
- ~~• Support optional two lane 400 Gb/s attachment unit interfaces for chip to module and chip to chip applications~~
- Define a physical layer specification that supports 400 Gb/s operation:
 - ~~• over 2 pairs of copper twin axial cables in each direction with a reach of up to at least 1.0 meter~~
 - ~~• over 2 pairs of SMF with lengths up to at least 500 m~~
 - over 4 pairs of SMF with lengths up to at least 2 km

IEEE P802.3 df Objectives

- **800 Gb/s Related**

- Support a MAC data rate of 800 Gb/s
- Support optional eight-lane 800 Gb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
- ~~• Support optional four-lane 800 Gb/s attachment unit interfaces for chip-to-module and chip-to-chip applications~~
- Define a physical layer specification that supports 800 Gb/s operation:
 - ~~• over 4 pairs of copper twin-axial cables in each direction with a reach of up to at least 1.0 meter~~
 - over eight lanes of twin axial copper cables with a reach up to at least 2 meters
 - over eight lanes over electrical backplanes supporting an insertion loss $\leq 28\text{dB}$ at 26.56GHz
 - over 8 pairs of MMF with lengths up to at least 50 m
 - over 8 pairs of MMF with lengths up to at least 100 m
 - over 8 pairs of SMF with lengths up to at least 500 m
 - over 8 pairs of SMF with lengths up to at least 2 km
 - ~~• over 4 pairs of SMF with lengths up to at least 500 m~~
 - ~~• over 4 pairs of SMF with lengths up to at least 2 km~~
 - ~~• over 4 wavelengths over a single SMF in each direction with lengths up to at least 2 km~~
 - ~~• over a single SMF in each direction with lengths up to at least 10 km~~
 - ~~• over a single SMF in each direction with lengths up to at least 40 km~~

IEEE P802.3 df Objectives

~~1.6 Tb/s Related~~

- ~~• Support a MAC data rate of 1.6 Tb/s~~
- ~~• Support optional sixteen-lane 1.6 Tb/s attachment unit interfaces for chip-to-module and chip-to-chip applications~~
- ~~• Support optional eight-lane 1.6 Tb/s attachment unit interfaces for chip-to-module and chip-to-chip applications~~
- ~~• Define a physical layer specification that supports 1.6 Tb/s operation:~~
 - ~~• over 8 pairs of copper twin-axial cables in each direction with a reach of up to at least 1.0 meter~~
 - ~~• over 8 pairs of SMF with lengths up to at least 500 m~~
 - ~~• over 8 pairs of SMF with lengths up to at least 2 km~~

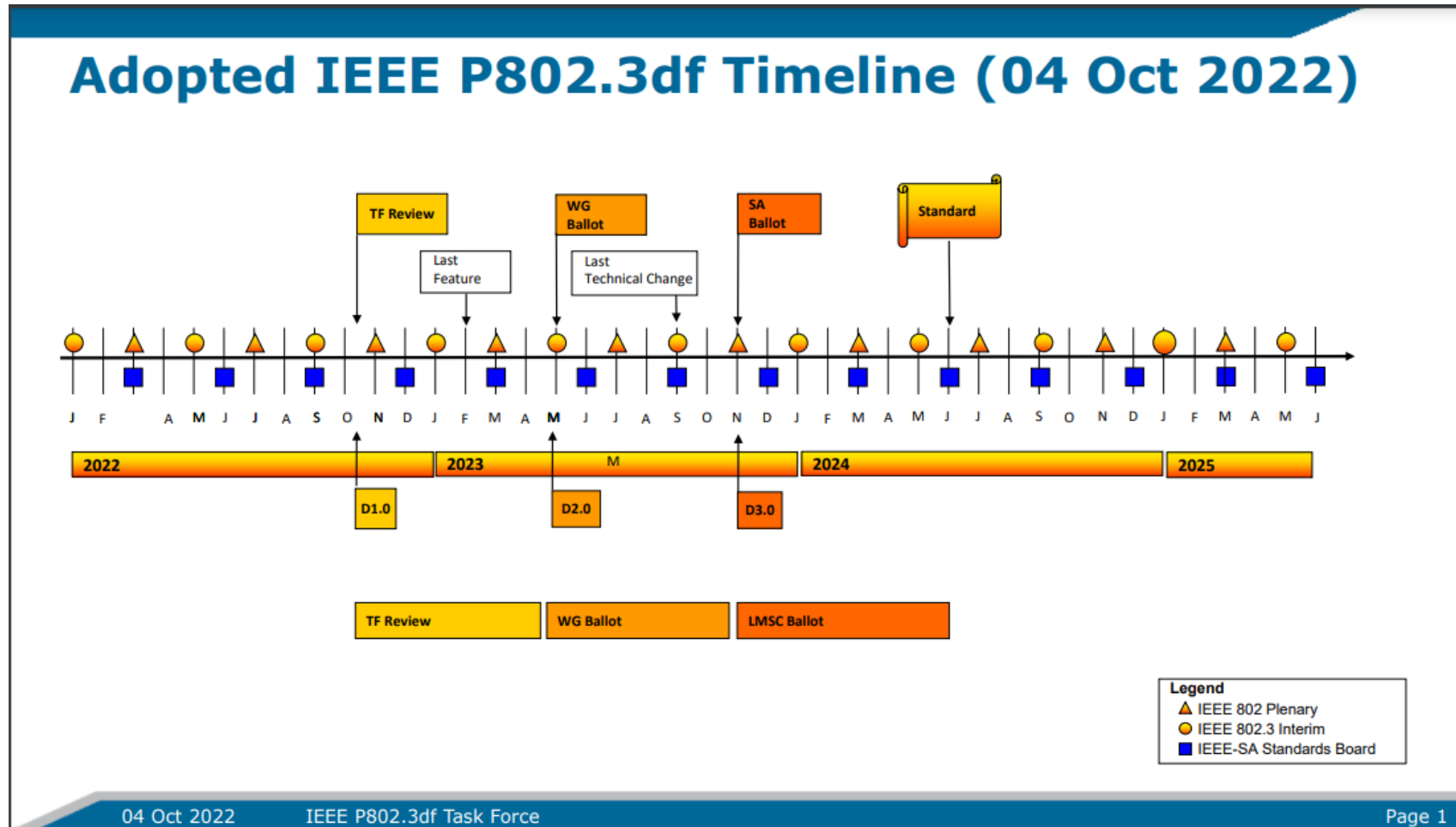
P802.3df (Post PAR Split) Objectives

Adopted IEEE P802.3df Objectives

- **Non-Rate Specific**
 - 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 a BER of better than or equal to 10^{-13} at the MAC/PLS service interface (or the frame loss ratio equivalent)
 - Provide support to enable mapping over OTN
- **400 Gb/s Related**
 - Support a MAC data rate of 400 Gb/s
 - Define a physical layer specification that supports 400 Gb/s operation:
 - over 4 pairs of SMF with lengths up to at least 2 km
- **800 Gb/s Related**
 - Support a MAC data rate of 800 Gb/s
 - Support optional eight-lane 800 Gb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
 - Define a physical layer specification that supports 800 Gb/s operation:
 - over eight lanes of twin axial copper cables with a reach up to at least 2 meters
 - over eight lanes over electrical backplanes supporting an insertion loss $\leq 28\text{dB}$ at 26.56GHz
 - over 8 pairs of MMF with lengths up to at least 50 m
 - over 8 pairs of MMF with lengths up to at least 100 m
 - over 8 pairs of SMF with lengths up to at least 500 m
 - over 8 pairs of SMF with lengths up to at least 2 km

P802.3df (post PAR split) Timeline

Target completion date: June 2024



P802.3df: 100 Gb/s Signaling. P802.3dj: 200 Gb/s Signaling

IEEE P802.3df Target PMDs

Ethernet Rate	Assumed Signaling Rate per lane	BP	Cu Cable	MMF 50m	MMF 100m	SMF 500m	SMF 2km	SMF 10km	SMF 40km	Technology Reuse	
200 Gb/s	200 Gb/s		1 pair			1 pair	1 pair			Leverage existing or work-in-progress 100 Gb/s per lane (e.g. 3cu, 3ck, 3db) to higher lane counts	P802.3df
400 Gb/s	100 Gb/s						4 pairs				
	200 Gb/s		2 pairs			2 pairs				Develop 200 Gb/s per lane electrical signaling for 1/2/4/8 lane variants of electrical PMDs	P802.3dj
	100 Gb/s	8 lanes	8 pairs	8 pairs	8 pairs	8 pairs	8 pairs				
800 Gb/s	200 Gb/s		4 pairs			4 pairs	1) 4 pairs 2) 4 λ's			Develop 200 Gb/s per optical fiber for 1/2/4/8 fiber based optical PMDs and per lambda for 4 lambda WDM optical PMD	
	TBD							Over single SMF in each direction	Over single SMF in each direction		
1.6 Tb/s	100 Gb/s									Potential for either direct detect and / or coherent signaling technology	
	200 Gb/s		8 pairs			8 pairs	8 pairs				

Source for above slide: https://www.ieee802.org/3/minutes/nov22/2211_3df_close_report.pdf

P802.3dj Objectives (1 of 2)

Adopted IEEE P802.3dj Objectives (1 of 2)

- **Non-Rate Specific**

- 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 a BER of better than or equal to 10^{-13} at the MAC/PLS service interface (or the frame loss ratio equivalent)
- Provide support to enable mapping over OTN

- **200 Gb/s Related**

- Support a MAC data rate of 200 Gb/s
- Support optional single-lane 200 Gb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
- Define a physical layer specification that supports 200 Gb/s operation:
 - over 1 pair of copper twin-axial cables in each direction with a reach of up to at least 1.0 meter
 - over 1 pair of SMF with lengths up to at least 500 m
 - over 1 pair of SMF with lengths up to at least 2 km

- **400 Gb/s Related**

- Support a MAC data rate of 400 Gb/s
- Support optional two-lane 400 Gb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
- Define a physical layer specification that supports 400 Gb/s operation:
 - over 2 pairs of copper twin-axial cables in each direction with a reach of up to at least 1.0 meter
 - over 2 pairs of SMF with lengths up to at least 500 m

P802.3dj Objectives (2 of 2)

Adopted IEEE P802.3dj Objectives (2 of 2)

- **800 Gb/s Related**

- Support a MAC data rate of 800 Gb/s
- Support optional four-lane 800 Gb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
- Define a physical layer specification that supports 800 Gb/s operation:
 - over 4 pairs of copper twin-axial cables in each direction with a reach of up to at least 1.0 meter
 - over 4 pairs of SMF with lengths up to at least 500 m
 - over 4 pairs of SMF with lengths up to at least 2 km
 - over 4 wavelengths over a single SMF in each direction with lengths up to at least 2 km
 - over a single SMF in each direction with lengths up to at least 10 km
 - over a single SMF in each direction with lengths up to at least 40 km

- **1.6 Tb/s Related**

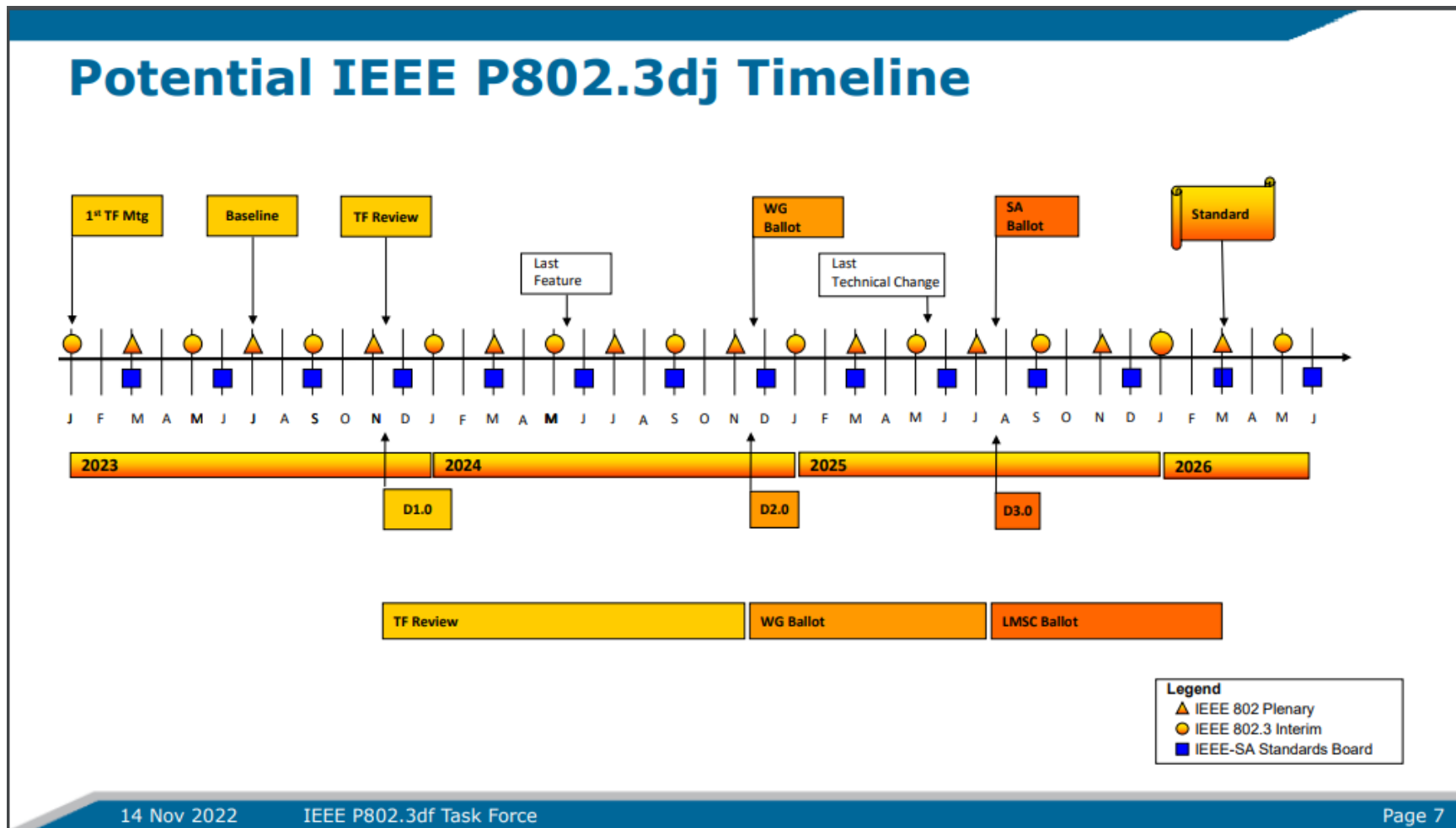
- Support a MAC data rate of 1.6 Tb/s
- Support optional sixteen-lane 1.6 Tb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
- Support optional eight-lane 1.6 Tb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
- Define a physical layer specification that supports 1.6 Tb/s operation:
 - over 8 pairs of copper twin-axial cables in each direction with a reach of up to at least 1.0 meter
 - over 8 pairs of SMF with lengths up to at least 500 m
 - over 8 pairs of SMF with lengths up to at least 2 km

Summary of IEEE P802.3dj Objectives

Ethernet Rate	Assumed Signaling Rate	AUI	Cu Cable	SMF 500m	SMF 2km	SMF 10km	SMF 40km
200 Gb/s	200 Gb/s	1 lane 200GAUI-1	1 pair 200GBASE-CR1	1 pair 200GBASE-DR1	1 pair 200GBASE-FR1		
400 Gb/s	200 Gb/s	2 lanes 400GAUI-2	2 pairs 400GBASE-CR2	2 Pair 400GBASE-DR2			
800 Gb/s	200 Gb/s	4 lanes 800GAUI-4	4 pairs 800GBASE-CR4	4 pairs 800GBASE-DR4	1. 4 pairs 800GBASE-DR4-2 2. 4 λ's 800GBASE-FR4		
	TBD					Over single SMF in each direction TBD	Over single SMF in each direction TBD
1.6 Tb/s	100 Gb/s	16 lanes 1.6TAUI-16					
	200 Gb/s	8 lanes 1.6TAUI-8	8 pairs 1.6TBASE-CR8	8 pairs 1.6TBASE-DR8	8 pairs 1.6TBASE-DR8-2		

P802.3dj (post PAR split) Timeline

Target completion date: March 2026



Source for above slide: https://www.ieee802.org/3/df/public/22_11/dambrosia_3df_01a_2211.pdf

MMF is not in Scope for P802.3dj (200 Gb/s per lane or greater)

PAR Item 5.2.b: "Scope of the project" Modification

.3dj Proposed Change

Change current scope:

Define Ethernet MAC parameters for 1.6 Tb/s. Define physical layer specifications, and management parameters for the transfer of Ethernet format frames at 800 Gb/s and 1.6 Tb/s over copper, multi-mode fiber, and single-mode fiber physical medium dependent (PMD) sublayers, based on greater than 100 Gb/s signaling technologies. Use this work to define derivative physical layer specifications and management parameters for the transfer of Ethernet format frames at 200 Gb/s and 400 Gb/s.

To:

Define Ethernet MAC parameters for 1.6 Tb/s. Define physical layer specifications, and management parameters for the transfer of Ethernet format frames at 800 Gb/s and 1.6 Tb/s over copper, ~~multi-mode fiber~~, and single-mode fiber physical medium dependent (PMD) sublayers based on 200 Gb/s or greater per lane signaling technologies.

Using these new definitions for 800 Gb/s and 1.6 Tb/s, define physical layer specifications and management parameters for the transfer of Ethernet format frames at 200 Gb/s and 400 Gb/s, when applicable.

Nov 2022

IEEE P802.3df Task Force, IEEE 802 Nov 2022 Plenary, Bangkok, Thailand

Page 44

Source for above slide: https://www.ieee802.org/3/minutes/nov22/2211_3df_close_report.pdf

P802.3dj Summary

- IEEE P802.3dj will specify 200 Gb/s per lane (or greater) Logic, Electrical, Optical (SMF only. No MMF variant) that will mutually impact FC-P1-9
 - First TF meeting: January 2023
 - Baseline: July 2023
 - D1.0: November 2023
 - Some initial work on 200G lanes adopted (will need to reaffirmed):
 - PAM4 optical modulation as the basis for all the 200 Gb/s per lane 500m and 2km SMF
 - RS(544,514,10) as the FEC encoding for the 200G/lane AUIs (C2M and C2C)
 - Differential PAM4 signaling as the basis for all the 200 Gb/s per lane AUIs (C2M and C2C)
 - Major technical challenges/choices for Logic, Electrical, Optical for 200 Gb/s signaling per lane will have to be overcome/made
 - Target completion date for standard: March 2026

New Ethernet Applications (NEA) Ad Hoc

- Interim meeting (teleconference) on 22 June 2022 – Ethernet in high-performance computing applications
 - Meeting materials: https://www.ieee802.org/3/ad_hoc/ngrates/public/calls/22_0622_HPE/index.html
 - Meeting minutes: https://www.ieee802.org/3/ad_hoc/ngrates/public/calls/22_0622_HPE/minutes_nea_220622_HPE_unapproved.pdf
- Joint NEA/NENDICA (802.1) meetings (teleconferences) 1, 8, 22, 29 June regarding Cut-Through Forwarding
 - Meeting materials: https://www.ieee802.org/3/ad_hoc/ngrates/public/calls/22_0601/index.html
https://www.ieee802.org/3/ad_hoc/ngrates/public/calls/22_0608/index.html
https://www.ieee802.org/3/ad_hoc/ngrates/public/calls/22_0622_CTF/index.html
 - Meeting minutes: https://www.ieee802.org/3/ad_hoc/ngrates/public/calls/22_0601/minutes_nea_220601_approved.pdf
https://www.ieee802.org/3/ad_hoc/ngrates/public/calls/22_0608/minutes_nea_220608_approved.pdf
https://www.ieee802.org/3/ad_hoc/ngrates/public/calls/22_0622_CTF/minutes_nea_220622_CTF_unapproved.pdf
https://www.ieee802.org/3/ad_hoc/ngrates/public/calls/22_0629/minutes_nea_220629_unapproved.pdf
- Meeting at 802.3 plenary 13 July 2022
 - Meeting materials: https://www.ieee802.org/3/ad_hoc/ngrates/public/22_07/index.html
 - Meeting minutes: https://www.ieee802.org/3/ad_hoc/ngrates/public/22_07/minutes_nea_2207.pdf
 - CFI on Greater than 50 Gb/s bidirectional optical access held 12 July, motion passed to form a Study Group to develop a PAR and CSD
- No NEA meetings since July 2022

Future Meetings

Meeting	Location	Dates
IEEE 802.3 interim	Virtual Only	16-19 January 2023
IEEE 802 plenary	Atlanta, GA, USA	13-17 March 2023
IEEE 802.3 interim	TBD	15-19 May 2023
IEEE 802 plenary	Berlin, Germany	10-13 July 2023
IEEE 802.3 interim	TBD	11-15 September 2023
IEEE 802.3 plenary	Oahu, HI, USA	13-16 November 2023

2023 interim meetings are still being planned; the intent is that they will be face-to-face/hybrid meetings.

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