IEEE 802.3 Working Group
July 2025 Plenary Session

David Law
Chair, IEEE 802.3 Working Group
dlaw@hpe.com

Web site: www.ieee802.org/3

Current IEEE 802.3 activities

IEEE 802.3 Task Forces

- IEEE P802.3da 10 Mb/s Single Pair Multidrop Segments Enhancement
- IEEE P802.3dg 100 Mb/s Long-Reach Single Pair Ethernet
- IEEE P802.3dj 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet
- IEEE P802.3dk Greater than 50 Gb/s Bidirectional Optical Access PHYs
- IEEE P802.3dm Asymmetrical Electrical Automotive Ethernet
- IEEE P802.3dp Cabling Restrictions for Single Pair Power over Ethernet
- IEEE Std 802.3-2022/Cor 2 (IEEE 802.3dr) Optical Automotive Ethernet TDFOM
- IEEE P802.3.2 (IEEE 802.3.2a) Revision to IEEE Std 802.3.2-2019 YANG Data Model Definitions

IEEE 802.3 Study Group

- IEEE 802.3 Pin-Optimized PHY Interface Study

IEEE 802.3 Calls for Interest

- IEEE 802.3 200 Gb/s per wavelength Multimode Fibre optical PHYs call for interest
- IEEE 802.3 Ethernet Metadata Services call for interest

IEEE 802.3 Ad Hocs

- IEEE 802.3 New Ethernet Applications
- IEEE 802.3 Power Distribution Coordinating Committee (PDCC)
- IEEE 802.3 Channel Operating Margin (COM) Open Source Project
- IEEE 802.3 YANG Open Source Project Ad Hoc

IEEE P802.3da 10 Mb/s Single Pair Multidrop Segments Enhancement Task Force

Description

Specify additions and modifications of the Physical Layer (including reconciliation sublayers), management parameters, Ethernet support for time synchronization protocols, and optional power delivery supporting multiple powered devices on the 10 Mb/s mixing segment.

Web site: http://ieee802.org/3/da/index.html

Status

Third Working Group recirculation ballot of IEEE P802.3da draft D2.3 closed 15 June 2025

- Working Group ballot process is now complete following the resolution of comments

Meeting plan

Progress approval to proceed to Standards Association ballot

IEEE P802.3dg 100 Mb/s Long-Reach Single Pair Ethernet Task Force

Description

Specify additions to and appropriate modifications of IEEE Std 802.3 to add 100 Mb/s Physical Layer specifications and management parameters for operation, and associated optional provision of power, using a single balanced pair of conductors

Web site: https://ieee802.org/3/dg/index.html

Status

Progressing towards a technically complete draft

IEEE P802.3dg draft D1.3 submitted to the IEEE 802.3 Working Group for preview in preparation for a request to proceed to initial Working Group ballot during plenary

Meeting plan

Progress approval to proceed to initial Working Group ballot

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

Description

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 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.

Web site: https://ieee802.org/3/dj/index.html

Status

Initial Working Group ballot of IEEE P802.3dj draft D2.0 closed 14 June 2025

- Ballot exceeded the required 75% for consensus to approve the draft
- A totally of 745 comments received

Comment resolution teleconference meeting series started on 9 July 2025

Meeting plan

Continue resolution of IEEE P802.3dj D2.0 initial Working Group ballot comments

IEEE P802.3dk Greater than 50 Gb/s Bidirectional Optical Access PHYs Task Force

Description

Define physical layer specifications and management parameters for symmetric bidirectional operation at greater than 50 Gb/s over a single strand of single mode fiber of at least 10 km.

Web site: https://ieee802.org/3/dk/index.html

Status

Third Working Group recirculation ballot of IEEE P802.3dk draft D2.3 closed 22 July 2025

- Ballot exceeded the required 75% for consensus to approve the draft

Standards Association balloting group formation underway

- https://www.ieee802.org/3/email_dialog/msg01704.html

Meeting plan

Resolution of IEEE P802.3dk D2.3 third Working Group recirculation ballot comments

Progress conditional approval to proceed to Standards Association ballot

IEEE P802.3dm Asymmetrical Electrical Automotive Ethernet Task Force

Description

Specify additions to and appropriate modifications of IEEE Std 802.3 to add Physical Layer specifications and management parameters for electrical media and operating conditions that are optimized for automotive end-node camera links for operation up to 10 Gb/s in one direction and with a lower data rate in the other direction

Web site: https://ieee802.org/3/dm/index.html

Status

Selecting set of baseline proposals to satisfy project objectives

Meeting plan

Continue to work on the selection of a set of baseline proposals

IEEE P802.3dp Cabling Restrictions for Single Pair Power over Ethernet Task Force

Description

Specify requirements and restrictions for supporting the IEEE 802.3 ‘plug-and-play’ interoperability model for Single-Pair Power over Ethernet (SPoE) due to current carrying capacity limitations in cabling

Web site: https://ieee802.org/3/dp/index.html

Status

Selecting set of baseline proposals to satisfy project objectives

Meeting plan

Start work on the selection of a set of baseline proposals

IEEE Std 802.3-2022/Cor 2 (IEEE 802.3dr) Optical Automotive Ethernet TDFOM Task Force

Description

Corrections to the Transmitter Distortion Figure of Merit (TDFOM) normalization factors specified in Table 166–16

Web site: https://ieee802.org/3/dr/index.html

Status

IEEE Std 802.3-2022/Cor 2 PAR approved 28 May 2025

Meeting plan

Development of initial IEEE Std 802.3-2022/Cor 2 (IEEE 802.3dr) draft

IEEE P802.3.2 (IEEE 802.3.2a) YANG Data Model (Revision) Task Force

Description

This revision is to addresses accumulated maintenance changes as well as appropriate updates to the IEEE Std 802.3.2 YANG modules to support IEEE Std 802.3 amendments published since IEEE Std 802.3.2 was first published.

Web site: https://ieee802.org/3/2/a/index.html

Status

Third Standards Association recirculation ballot of draft D3.3 closed 15 May 2025

- 100 % approval and no comments submitted
- One editorial and two RAC comments received post-ballot close
- Comments considered during 21 July 2025 IEEE 802.3 Maintenance teleconference interim meeting

Fourth Standards Association recirculation ballot of draft D3.4 opened 21 July 2025

Meeting plan

Progress conditional approval to proceed to RevCom submittal

IEEE 802.3 Pin-Optimized PHY Interface Study Group

Description

Develop a Project Authorization Request (PAR) and Criteria for Standards Development (CSD) responses for Ethernet Media Independent Interfaces (MII) optimized for an exposed interconnect

Web site: https://www.ieee802.org/3/POPI/index.html

Status

The Study Group has completed development of the IEEE P802.3dq IEEE Standard for Ethernet Amendment: Physical Layer Specifications and Management Parameters for a Pin Optimized Interface Between a MAC and a PHY draft PAR, as well as supporting draft CSD and draft objectives

Draft PAR: https://mentor.ieee.org/802-ec/dcn/25/ec-25-0127-00-LMSC-ieee-p802-3dq-draft-par.pdf

Draft CSD: https://mentor.ieee.org/802-ec/dcn/25/ec-25-0128-00-LMSC-ieee-p802-3dq-draft-csd.pdf

Draft objectives: https://www.ieee802.org/3/POPI/POPI_DRAFT_Objectives_2025-06-18_v01.pdf

Meeting plan

Progress the necessary IEEE P802.3dq draft PAR, CSD and objectives approvals

IEEE 802.3 200 Gb/s per wavelength Multimode Fibre optical PHYs call for interest

Links comprising multimode fiber (MMF) cable and VCSEL-based transceivers have played a key role in implementing multiple generations of Ethernet data rates in data centers for short reach. Ethernet has a proven track record of reusing and leveraging technology to enable new cost-optimized solutions for broad market adoption in these short-reach applications. IEEE 802.3db and IEEE 802.3df Ethernet projects defined specifications for 100 Gb/s, 200 Gb/s, 400 Gb/s, and 800 Gb/s operation over MMF using 100 Gb/s signaling. These Ethernet standards have gained market adoption in high bandwidth, high growth artificial intelligence (AI) back-end networks, as well as front-end networks for server-attachment, due to their lower power and lower cost than other optical technologies and their longer reaches than copper technologies. The continual growth of bandwidth demand has driven the evolution of even higher Ethernet speeds, most recently with 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet using 200 Gb/s signaling specifications being developed by the P802.3dj project. Now, the technology for 200 Gb/s per wavelength VCSEL-MMF links has reached a level that suggests the time is right to study an interoperable Ethernet MMF specification that will have broad market adoption.

This is a call for interest to initiate a Study Group to explore the potential market requirements and feasibility of addressing AI/Data Center networks, and to develop a PAR and CSD for 200 Gb/s per wavelength MMF optical PHYs.

IEEE 802.3 Ethernet Metadata Services call for interest

One can view IEEE 802.3 Ethernet's primary function to be exchanging Ethernet frames between endpoints. It can be useful in many applications to augment those frames with additional control information to provide extra functionality between endpoints. This control information is considered metadata and can be associated with the frame or communicated as information that is independent of the frames.

There have been proprietary implementations in the industry that use metadata to provide features such as channelized Ethernet. Recently the AI/ML/HPC market has been identifying new extensions that provide capabilities such as retry for lost frames and new, richer, flow control functionality. Many of these are considering different mechanisms to provide very similar functionality.

Historically, there are several amendments to the Ethernet standard that provide extensions to allow transmission of metadata such as EPON, Packet Preemption, and Link Degrade signaling as examples.

There is an opportunity for 802.3 to provide the industry with a set of clean, extensible, per-frame and frame-independent multi-vendor interoperable mechanisms for metadata exchange which should facilitate future innovations using a common approach. This will allow extensions to ethernet to be defined by other SDOs for new or unforeseen features to meet evolving industry needs while maintaining the interoperability that makes ethernet ubiquitous.

This Call for Interest is to assess the support for formation of an "Ethernet Metadata Services" study group in IEEE 802.3 to consider the development of a PAR and CSD to address adding a common approach to support per-frame and frame-independent metadata services to IEEE 802.3 Ethernet.

IEEE 802.3 New Ethernet Applications (NEA) Ad Hoc

Description

The goal of this activity is to assess requirements for new Ethernet-based applications, identify gaps not currently addressed by IEEE 802.3 standards, and facilitate building industry consensus towards proposals to initiate new standards development efforts

Web site: http://ieee802.org/3/ad_hoc/ngrates/index.html

Status

Items considered since March 2025 plenary session

200 Gb/s wavelength MMF optical PMDs meetings

Ethernet Metadata Services meetings

IEEE 802.3 New Ethernet Applications Ad Hoc Ethernet for AI Assessment meetings

Web site: https://www.ieee802.org/3/ad_hoc/E4AI/index.html

Meeting plan

No meetings are planned for the July 2025 plenary session

Seek IEEE 802.3 Working Group approval of NEA status report to ICCom

IEEE 802.3 Power Distribution Coordinating Committee (PDCC) Ad Hoc

Description

The Chair of the IEEE 802.3 Working Group has established an ad hoc to review output and build consensus on input for liaisons regarding power delivery over cabling cited in IEEE 802.3 standards and projects, e.g.,

- Build consensus on public inputs and public comments for the next edition of NFPA70; and
- Build consensus on input to IEC 60364-7-716, and proposed direction of the IEEE 802.3 Category C liaison expert to IEC TC64/MT2; and
- Build consensus on input to IEC TC108/PT63315, and proposed direction of the IEEE 802.3 Category C liaison expert; and
- Build consensus on input to ITU-T SG5; and
- Build consensus on input to IEC SC25/WG3

The output of this Ad Hoc is subject to approval of the 802.3 Working Group

Web site: https://ieee802.org/3/ad_hoc/PDCC/index.html

Meeting plan

Continue reviewing output and building consensus on input for liaisons regarding power delivery over cabling cited in IEEE 802.3 standards and projects

IEEE 802.3 Channel Operating Margin (COM) Open Source Project Ad Hoc

Description

Reference software code implementations and configuration spreadsheets of the Channel Operating Margin (COM) equations and methods in IEEE Std. 802.3 and Amendments (e.g. Annex 93A and 178A). It will also provide branch support to enable participants to development new features and new capabilities for use by industry.

Web site: https://www.ieee802.org/3/ad_hoc/COM/

Status

Accepted 6 change requests against COM 4.8 and released COM 4.9

Received 7 change requests against COM 4.9 for consideration in v4.10

Meeting plan

No meetings are planned for the July 2025 plenary session

Seek IEEE 802.3 Working Group approval of COM 4.10 release

IEEE 802.3 YANG Open Source Project Ad Hoc

Description

Consider potential paths for moving IEEE 802.3 YANG into IEEE OSCOM Open Source

Web site: https://www.ieee802.org/3/ad_hoc/YANGOS/index.html

Status

IEEE 802.3 YANG Open Source Project Ad Hoc chartered at May 2025 interim meeting

First meeting held on 16 July 2025

Meeting plan

Continue the discussion of moving IEEE 802.3 YANG into Open Source

IEEE 802.3 Officers, Subgroup Chairs and Vice-Chairs

IEEE 802.3 Chair: David Law <dlaw@hpe.com>
IEEE 802.3 Vice Chair: Adam Healey <adam.healey@broadcom.com>
IEEE 802.3 Secretary: Jon Lewis <jon.lewis@dell.com>
IEEE 802.3 Executive Secretary: Chad Jones <cmjones@cisco.com>
IEEE 802.3 Treasurer: Valerie Maguire <vmaguire@ieee.org>

IEEE 802.3 Task Force chairs

IEEE P802.3da 10 Mb/s Single Pair Multidrop Segments Enhancement: Chad Jones <cmjones@cisco.com>
IEEE P802.3dg 100 Mb/s Long-Reach Single Pair Ethernet: George Zimmerman <george@cmephyconsulting.com>
IEEE P802.3dj 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet: John D'Ambrosia <jdambrosia@ieee.org>
IEEE P802.3dk Greater than 50 Gb/s Bidirectional Optical Access PHYs: Yuanqiu Luo <yuanqiu.luo@futurewei.com>
IEEE P802.3dm Asymmetrical Electrical Automotive Ethernet (Chair pro tem): Natalie Wienckowski <natalie@ivnsolutionsllc.com>
IEEE P802.3dp Cabling Restrictions for Single Pair Power over Ethernet Chad Jones <cmjones@cisco.com>
IEEE Std 802.3-2022/Cor 2 (IEEE 802.3dr) Optical Automotive Ethernet TDFOM Luisma Torres <luismanuel.torres@kdpof.com>
IEEE P802.3.2 (IEEE 802.3.2a) YANG Data Model (Revision) Marek Hajduczenia <mxhajduczenia@gmail.com>

IEEE 802.3 Study Group chair

IEEE 802.3 IEEE 802.3 Pin-Optimized PHY Interface: Jason Potterf <jpotterf@cisco.com>

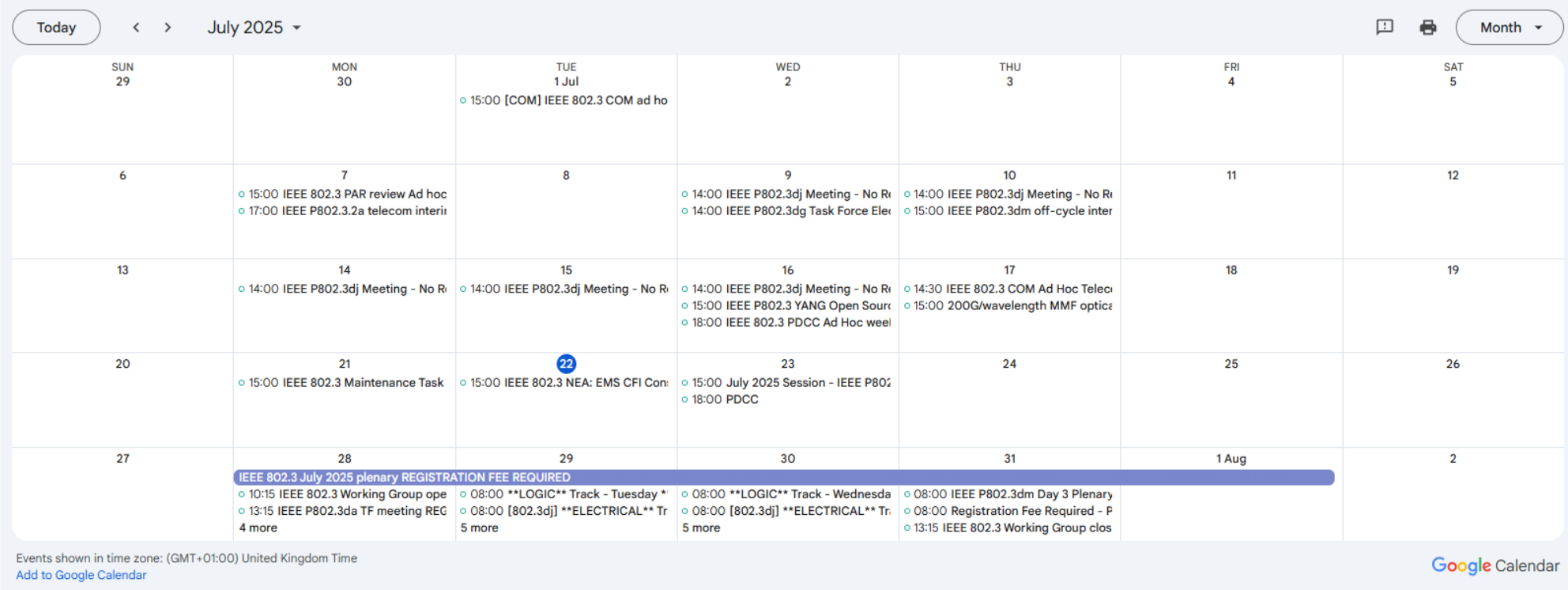
IEEE 802.3 Task Force vice-chair

IEEE P802.3dj 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet: Mark Nowell <mnowell@cisco.com>

Upcoming meetings

Please see http://www.ieee802.org/3/calendar.html for latest calendar of meetings

NOTE: Calendar set to detected computer time zone: Europe/London



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