IEEE 802.3 Working Group
November 2022 Plenary Session

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Web site: www.ieee802.org/3

Current IEEE 802.3 activities

IEEE 802.3 Task Forces

- IEEE P802.3cw 400 Gb/s over DWDM systems
- IEEE P802.3cx Improved PTP Timestamping Accuracy
- IEEE P802.3cy Greater than 10 Gb/s Electrical Automotive Ethernet
- IEEE P802.3cz Multi-Gigabit Optical Automotive Ethernet
- IEEE P802.3da 10 Mb/s Single Pair Multidrop Segments Enhancement
- IEEE P802.3df 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet
- IEEE P802.3dg 100 Mb/s Long-Reach Single Pair Ethernet
- IEEE P802.3dh Multi-Gigabit Automotive Ethernet over Plastic Optical Fiber

IEEE 802.3 Study Groups

- IEEE 802.3 Greater than 50 Gb/s Bidirectional Optical Access PHYs

IEEE 802.3 Ad Hoc

- IEEE 802.3 New Ethernet Applications
- IEEE 802.3 Power Distribution Coordinating Committee (PDCC)

IEEE 802.3 Maintenance

Progress

- Maintenance requests
  - No new maintenance requests received since September 2022 interim meeting
  - Reviewed status of outstanding maintenance requests
- Adoption of IEEE 802.3 standards by ISO/IEC JTC 1/SC 6 as ISO/IEC/IEEE 8802 3 standards
  - Discussed submission plan of IEEE 802.3 standards and drafts to ISO/IEC JTC 1/SC 6
- Web page: http://www.ieee802.org/3/maint/index.html

IEEE P802.3cw 400 Gb/s over DWDM Systems Task Force

Description

Define physical layer specifications and management parameters for the transfer of Ethernet format frames at 400 Gb/s at reaches greater than 10 km over DWDM systems.

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

Progress

The IEEE P802.3cw Task Force did not meet during this plenary session

Next steps

Editorial team preparing draft D2.1 based on comment responses

IEEE P802.3cx Improved PTP timestamping accuracy Task Force

Description

Define optional enhancements to Ethernet support for time synchronization protocols to provide improved timestamp accuracy in support of ITU-T Recommendation G.8273.2 'Class C' and 'Class D' system time error performance requirements.

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

Progress

Conditional approval granted to progress IEEE P802.3cx to RevCom submittal

Next steps

Complete the IEEE P802.3cx Standards Association balloting process

Progress approval of IEEE P802.3cx as an IEEE Standard

IEEE P802.3cy Greater than 10 Gb/s Electrical Automotive Ethernet Task Force

Description

Specify additions to and appropriate modifications of IEEE Std 802.3 to add greater than 10 Gb/s electrical Physical Layer specifications for symmetrical and asymmetrical operation and management parameters for media and operating conditions for applications in the automotive environment.

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

Progress

Unconditional approval granted to progress IEEE P802.3cy to Standards Association ballot

Next steps

Conduct IEEE P802.3cy initial Standards Association ballot

IEEE P802.3cz Multi-Gigabit Optical 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 multi-gigabit optical Ethernet using graded-index glass optical fiber for application in the automotive environment.

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

Progress

Conditional approval granted to progress IEEE P802.3cz to RevCom submittal

Next steps

Complete the IEEE P802.3cz Standards Association balloting process

Progress approval of IEEE P802.3cz as an IEEE Standard

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

Progress

Considered six contribution: MDI Connector, multidrop powering over data-pair and non-data-pair, Mixing Segment with RX Model, EMC Noise Margin, Power Decision, Power System Parameter Examples

Expect baseline proposals in the next two meetings

Discussed a timeline update

Next steps

Continue baseline selection to satisfy the project objectives

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

Description

Define Ethernet MAC parameters, 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, and 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.

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

Progress

Considered 31 technical contributions

RS(544,514,10) adopted as the FEC encoding for the 200Gb/s pre lane AUIs (C2M and C2C)

PAM4 signaling adopted as the basis for all the 200 Gb/s per lane AUIs (C2M and C2C)

IEEE P802.3df PAR modification and IEEE P802.3dj PAR to ‘split’ IEEE P802.3df PAR

IEEE P802.3df modified PAR and CSD and IEEE P802.3dj PAR and CSD approved by IEEE 802 Executive Committee

IEEE P802.3df PAR https://mentor.ieee.org/802-ec/dcn/22/ec-22-0196-03-00EC-draft-ieee-p802-3df-par-modification.pdf

IEEE P802.3df CSD https://mentor.ieee.org/802-ec/dcn/22/ec-22-0197-02-00EC-draft-ieee-p802-3df-csd-modification.pdf

IEEE P802.3dj PAR https://mentor.ieee.org/802-ec/dcn/22/ec-22-0198-03-00EC-draft-ieee-p802-3dj-par.pdf

IEEE P802.3dj CSD https://mentor.ieee.org/802-ec/dcn/22/ec-22-0199-02-00EC-draft-ieee-p802-3dj-csd.pdf

Next steps

Continue baseline selection to satisfy the project objectives

Progress approval of IEEE P802.3df PAR modification and IEEE P802.3dj PAR

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

Progress

Considered 12 contributions: link segment specifications (7), the motor control use case (2), the process control use case (2), proposed IEEE 802.3 references for the IEC/IEEE 60802 industrial automation protocol (1)

Link segment insertion loss specification including bandwidth adopted

Next steps

Continue baseline selection to satisfy the project objectives

IEEE P802.3dh Multi-Gigabit Automotive Ethernet over Plastic Optical Fiber Task Force

Description

Specify additions to and appropriate modifications of IEEE Std 802.3 to add Physical Layer specifications and management parameters for multi-gigabit optical Ethernet using graded-index plastic optical fiber for application in the automotive environment.

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

Progress

Considered three contributions: activity in IEC and spectral attenuation on GI-POF, transmission test results using 850 nm and 910 nm VCSEL over 30m GI-POF, and proposal to widen wavelength were made

Timeline discussion, but no timeline adopted

Next steps

Continue baseline selection to satisfy the project objectives

Greater than 50 Gb/s Bidirectional Optical Access PHYs call for interest

Description

Develop a Project Authorization Request (PAR) and Criteria for Standards Development (CSD) responses for greater than 50 Gb/s Bidirectional Optical Access PHYs

Web site: https://ieee802.org/3/GT50GBIDI/index.html

Status

IEEE P802.3dk PAR and CSD approved by IEEE 802 Executive Committee

PAR: https://mentor.ieee.org/802-ec/dcn/22/ec-22-0200-00-00EC-draft-ieee-p802-3dk-par.pdf

CSD: https://mentor.ieee.org/802-ec/dcn/22/ec-22-0201-00-00EC-draft-ieee-p802-3dk-csd.pdf

IEEE P802.3dk PAR placed on the December 2022 NesCom agenda

Study Group rechartered

Backup if PAR not approved by IEEE SA Standards Board

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

Progress

The IEEE 802.3 New Ethernet Applications Ad Hoc did not meet during this plenary session

Next steps

Consider any future requests

IEEE 802.3 Power Distribution Coordinating Committee (PDCC) Ad Hoc

Description

Review output and build consensus on draft input for liaisons regarding power delivery over cabling cited in IEEE 802.3 standards and projects, e.g.:

- Build consensus on responses to public input proposals received as part of the next edition of NFPA70; and consider any other NFPA related items of interest, such as proposed Tentative Interim Amendments (TIA)
- Build consensus on draft input to IEC TC64/PT716, and proposed direction of the IEEE 802.3 Category C liaison expert
- Build consensus on draft input to IEC TC108/PT63315, and proposed direction of the IEEE 802.3 Category C liaison expert

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

Progress

Comments generated on ITU T K .147 draft recommendation

Approval granted to request for Category A liaison with IEC TC64

Appointment of delegation to February/March 2023 ISO/IEC JTC 1/SC 25/WG 3 meetings

Next steps

Continue to monitor activities within scope

IEEE 802.3 Officers, Subgroup Chairs and Vice-Chairs

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IEEE P802.3da 10 Mb/s Single Pair Multidrop Segments Enhancement: Chad Jones <cmjones@cisco.com>
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IEEE P802.3dg 100 Mb/s Long-Reach Single Pair Ethernet: George Zimmerman <george@cmephyconsulting.com>
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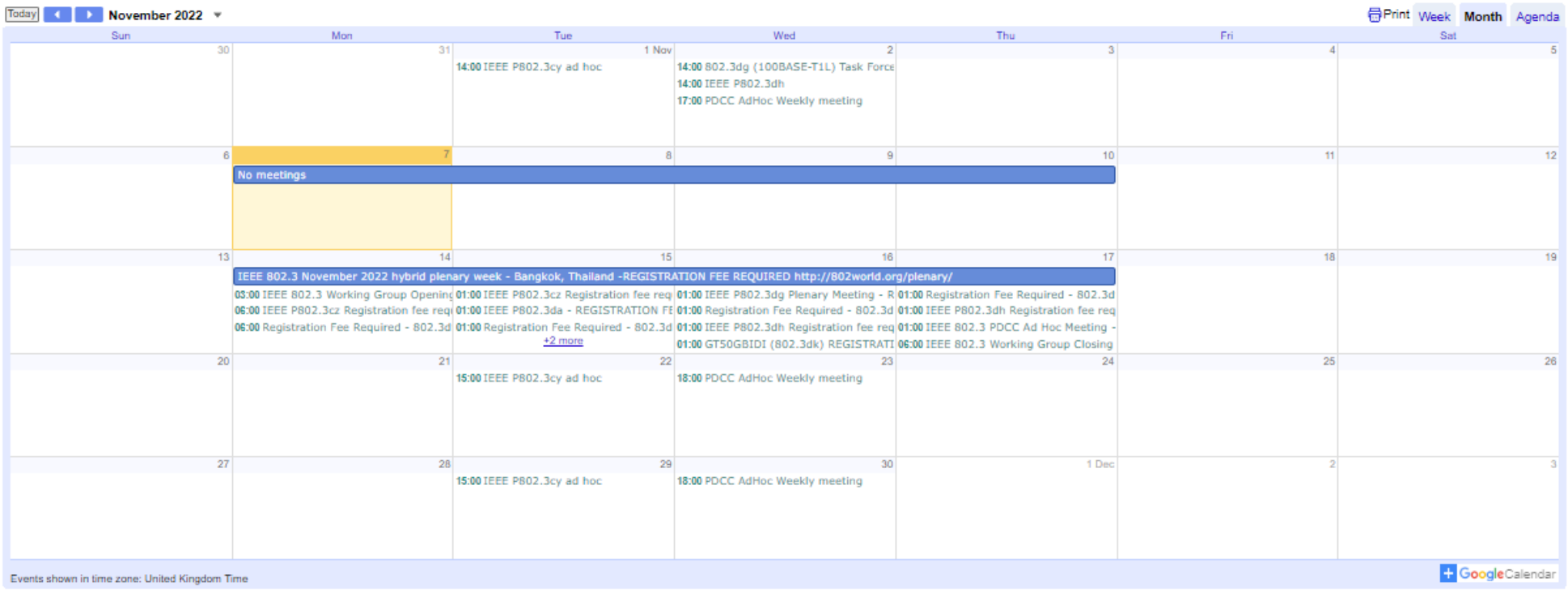
IEEE P802.3df 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet: Mark Nowell <mnowell@cisco.com>

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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