IEEE 802.3 Working Group
July 2019 Plenary Week

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Web site: www.ieee802.org/3

Current IEEE 802.3 activities

IEEE 802.3 Task Forces

- IEEE P802.3ca 25 Gb/s, and 50 Gb/s EPON
- IEEE P802.3cg 10 Mb/s Single Pair Ethernet
- IEEE P802.3ch Multi-Gig Automotive Ethernet PHY
- IEEE P802.3ck 100 Gb/s, 200 Gb/s, and 400 Gb/s Electrical Interfaces
- IEEE P802.3cm 400 Gb/s over Multimode Fiber
- IEEE P802.3cn 50 Gb/s, 200 Gb/s, and 400 Gb/s over greater than 10 km of SMF
- IEEE P802.3cp Bidirectional 10 Gb/s, 25 Gb/s and 50 Gb/s Optical Access PHYs
- IEEE P802.3cq Power over Ethernet over 2 Pairs (Maintenance #13) Task Force
- IEEE P802.3cr Isolation (Maintenance #14) Task Force
- IEEE P802.3cs Increased-reach Ethernet optical subscriber access (Super-PON)
- IEEE P802.3ct 100 Gb/s and 400 Gb/s over DWDM systems
- IEEE P802.3cu 100 Gb/s and 400 Gb/s over SMF at 100 Gb/s per Wavelength

IEEE 802.3 Study Group

- IEEE 802.3 Greater than 10 Gb/s Automotive Ethernet Electrical PHYs

IEEE 802.3 Calls for Interest

- Automotive optical Multi-Gig call for interest
- Improving PTP Timestamping Accuracy on Ethernet Interfaces call for interest
- 10 Mb/s Single Pair Ethernet Multidrop Enhancements call for interest

IEEE 802.3 Industry Connection activity

- IEEE 802.3 New Ethernet Applications Ad Hoc

IEEE 802.3 Maintenance

Meeting plan

- Consider new maintenance requests
- Review status of outstanding maintenance requests
- Progress approval of IEEE P802.3cv Standard for Ethernet Amendment: Maintenance #15: Power over Ethernet PAR
- ISO/IEC JTC1 SC6 adoptions under PSDO agreement
  - Submission of IEEE 802.3 drafts for review
  - Submission of IEEE 802.3 standards for adoption
  - Respond to any comments on adoption of IEEE 802.3 standards
  - Consider any other maintenance business

Web page

http://www.ieee802.org/3/maint/index.html

IEEE P802.3ca 25 Gb/s and 50 Gb/s Passive Optical Networks Task Force

Description

The scope of this project is to amend IEEE Std 802.3 to add physical layer specifications and management parameters for point-to-multipoint passive optical networks supporting MAC data rates of 25 Gb/s or 50 Gb/s in the downstream direction and 10 Gb/s, 25 Gb/s, or 50 Gb/s in the upstream direction, with distance and split ratios consistent with those defined in IEEE Std 802.3. It also extends the operation of Ethernet Passive Optical Networks (EPON) protocols, such as MultiPoint Control Protocol (MPCP) and Operation Administration and Management (OAM)

Web site: <http://www.ieee802.org/3/ca/index.html>

Status

Last met during the May 2019 interim meeting series

Draft D2.0 sent out for Initial Working Group ballot

Meeting plan

Consideration of comments received against draft D2.0

IEEE P802.3cg 10 Mb/s Single Pair Ethernet Task Force

Description

Specify additions to and appropriate modifications of IEEE Std 802.3 to add 10 Mb/s Physical Layer (PHY) specifications and management parameters for operation, and associated optional provision of power, using a single balanced pair of conductors

Web site: <http://ieee802.org/3/cg/index.html>

Status

Last met during a May 2019 Task Force interim

Draft D3.1 sent out for 1st Standards Association recirculation ballot

Meeting plan

Consideration of comments received against draft D3.1

IEEE P802.3ch Multi-Gig Automotive Ethernet PHY Task Force

Description

Specify additions to and appropriate modifications of IEEE Std 802.3 to add greater than 1 Gb/s Physical Layer (PHY) specifications and management parameters for media and operating conditions for applications in the automotive environment

Web site: <http://www.ieee802.org/3/ch/index.html>

Status

Last met during the May 2019 interim meeting series

Draft D2.0 sent out for Initial Working Group ballot

Meeting plan

Consideration of comments received against draft D2.0

IEEE P802.3ck 100 Gb/s, 200 Gb/s, and 400 Gb/s Electrical Interfaces Task Force

Description

This project is to specify additions to and appropriate modifications of IEEE Std 802.3 to add Physical Layer specifications and Management Parameters for 100 Gb/s, 200 Gb/s, and 400 Gb/s electrical interfaces based on 100 Gb/s signaling

Web site: <http://ieee802.org/3/ck/index.html>

Status

Last met during the May 2019 interim meeting series

Selecting set of baseline proposals to satisfy project objectives

Meeting plan

Continue to work on selection of a set of baseline proposals

IEEE P802.3cm 400 Gb/s over Multimode Fiber Task Force

Description

Define Physical Layer specifications (PHY) and management parameters for the transfer of Ethernet format frames at 400 Gb/s over fewer than 16 pairs of multimode fiber physical media

Web site: <http://ieee802.org/3/cm/index.html>

Status

Last met during the May 2019 interim meeting series

Draft D2.1 sent out for 1st Working Group recirculation ballot

Meeting plan

Consideration of comments received against draft D2.1

Prepare for request to proceed to Standards Association ballot

IEEE P802.3cn 50Gb/s, 200Gb/s, and 400Gb/s over greater than 10 km of SMF Task Force

Description

Define physical layer specifications and management parameters for the transfer of Ethernet format frames at 50 Gb/s, 200 Gb/s, and 400 Gb/s at reaches greater than 10 km over single-mode fiber. Make TDECQ (Transmitter and dispersion eye closure for PAM4) related changes to existing 200 Gb/s and 400 Gb/s physical medium dependent sublayers over single-mode fiber.

Web site: <http://ieee802.org/3/cn/index.html>

Status

Last met during the May 2019 interim meeting series

Draft D2.1 sent out for 1st Working Group recirculation ballot

Meeting plan

Consideration of comments received against draft D2.1

Prepare for request to proceed to Standards Association ballot

IEEE P802.3cp Bidirectional 10 Gb/s, 25 Gb/s, and 50 Gb/s Optical Access PHYs Task Force

Description

Define physical layer specifications and management parameters for symmetric bidirectional 10 Gb/s, 25 Gb/s, and 50 Gb/s operation over single strand of single mode fiber of at least 10 km

Web site: <http://ieee802.org/3/cp/index.html>

Status

Last met during the May 2019 interim meeting series

Baseline proposal selection to satisfy objectives and draft development

Draft D0.2 sent out for Task Force review

Meeting plan

Continue to work on selection of a set of baseline proposals

Consideration of comments received against draft D0.2

IEEE P802.3cq Power over Ethernet over 2 Pairs (Maintenance #13) Task Force

Description

This project will implement editorial and technical corrections, refinements, and clarifications to Clause 33, Power over Ethernet over 2 pairs, and related portions of the standard. No new features will be added by this project.

Web site: <http://ieee802.org/3/cq/index.html>

Status

Last met during a May 2019 Task Force interim

Draft D2.1 sent out for 1st Working Group recirculation ballot

Meeting plan

Consideration of comments received against draft D2.1

Prepare for request to proceed to Standards Association ballot

IEEE P802.3cr Isolation (Maintenance #14) Task Force

Description

Replace references to the IEC 60950 series of standards (including IEC 60950-1 "Information technology equipment - Safety - Part 1: General requirements") with appropriate references to the IEC 62368 "Audio/video, information and communication technology equipment" series and make appropriate changes to the standard corresponding to the new references

Web site: <http://ieee802.org/3/cr/index.html>

Status

Last met during the May 2019 interim meeting series

Selecting set of baseline proposals to satisfy project objectives

Meeting plan

Continue to work on selection of a set of baseline proposals

IEEE P802.3cs Increased-reach Ethernet optical subscriber access (Super-PON) Task Force

Description

Define physical layer specifications and management parameters for optical subscriber access supporting point-to-multipoint operations using wavelength division multiplexing over an increased-reach (up to at least 50 km) passive optical network (PON)

Web site: <http://ieee802.org/3/cs/index.html>

Status

Last met during the May 2019 interim meeting series

Baseline proposal selection to satisfy objectives and draft development

Draft D0.1 sent out for 1st Task Force review

Meeting plan

Continue to work on selection of a set of baseline proposals

Consideration of comments received against draft D0.1

IEEE P802.3ct 100Gb/s and 400Gb/s over DWDM systems Task Force

Description

Define physical layer specifications and management parameters for the transfer of Ethernet format frames at 100 Gb/s and 400 Gb/s at reaches greater than 10 km over DWDM systems

Web site: <http://ieee802.org/3/ct/index.html>

Status

Last met during a May 2019 Task Force interim

Selecting set of baseline proposals to satisfy project objectives

Meeting plan

Continue to work on selection of a set of baseline proposals

IEEE P802.3cu 100 Gb/s and 400 Gb/s over SMF at 100 Gb/s per Wavelength Task Force

Description

Define additions to and appropriate modifications of IEEE Std 802.3 to add PHY specifications and Management Parameters for 100 Gb/s and 400 Gb/s Ethernet optical interfaces for reaches up to 10 km based on 100 Gb/s per wavelength optical signaling.

Web site: <http://ieee802.org/3/cu/index.html>

Status

IEEE P802.3cu PAR approved by IEEE-SA Standards Board

Approval date 21st March 2019

First meeting during a May 2019 Task Force interim

Selecting set of baseline proposals to satisfy project objectives

Meeting plan

Continue to work on selection of a set of baseline proposals

IEEE 802.3 Greater than 10 Gb/s Automotive Ethernet Electrical PHYs Study Group

Description

Develop a Project Authorization Request (PAR) and Criteria for Standards Development (CSD) responses for greater than 10 Gb/s Automotive Ethernet Electrical PHYs.

Web site: <http://ieee802.org/3/B10GAUTO/index.html>

Status

First meeting during the May 2019 interim meeting series

Initial development of draft objectives, CSD and PAR

Meeting plan

Continue developing draft objectives, CSD and PAR

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

Last met during the May 2019 interim meeting series

Meeting plan

No sessions are planned for the July plenary

IEEE 802.3 Automotive optical Multi-Gig Call for Interest

Ethernet is becoming the main in-vehicle communication technology of the automotive industry. Several PHYs have been standardized in IEEE 802.3 to support this automotive market. The first generation Ethernet automotive optical PHY is being designed in by several car manufacturers. To complement this current 1 Gb/s PHY and proposed multi-gig Ethernet copper PHY solutions, a higher data rate optical solution is also required by the automotive industry.

This request for agenda time for this CFI has been received from Carlos Pardo <carlospardo@kdpof.com>

IEEE 802.3 Improving PTP Timestamping Accuracy on Ethernet Interfaces Call for Interest

Applications in which Precision Time Protocol (PTP) (e.g., IEEE Std 1588 or IEEE Std 802.1AS) is carried over Ethernet interfaces have become increasingly important. A growing number of applications benefit from being able to communicate frequency and time synchronization information over Ethernet. Emerging important potential Ethernet applications such as 5G mobile radio access networks require increased PTP accuracy. Unfortunately, the increased complexity of several recent IEEE Std 802.3 PHYs have inadvertently introduced limitations or degradations of the potential PTP accuracy. In some cases, the decreased PTP accuracy is related to a discrepancy between IEEE Std 802.3 and IEEE Std 802.1AS/1588 reference points. Addressing these issues will increase the scope of applications in which Ethernet can be deployed. This Call for Interest is to assess the support for the formation of a Study Group to explore the potential markets requirements and feasibility of amending the IEEE 802.3 Ethernet standard to support high accuracy frequency and time synchronization.

This request for agenda time for this CFI has been received from Steve Gorshe <steve.gorshe@microchip.com>

IEEE 802.3 10 Mb/s Single Pair Ethernet Multidrop Enhancements Call for Interest

Ethernet is becoming the networking technology of choice in the OT environment, e.g. Building and Industrial Automation. The emergence of 10Mb/s Single Pair Ethernet creates significant opportunities to migrate these environments from fieldbus technologies to Ethernet. Enhancing multidrop support expands the addressable market for this technology. Enhancements such as longer mixing segments, increased node counts and support of power over the mixing segment have been requested from the industry. With the progress of IEEE P802.3cg towards ratification, this is the time to start this effort.

This request for agenda time for this CFI has been received from Peter Jones <petejone@cisco.com>

IEEE 802.3 Officers

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IEEE P802.3cn 50Gb/s, 200Gb/s, and 400Gb/s over greater than 10 km of SMF: John D'Ambrosia <jdambrosia@ieee.org>
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IEEE P802.3cq Power over Ethernet over 2 Pairs (Maintenance #13) Task Force: Chad Jones <cmjones@cisco.com>
IEEE P802.3cr Isolation (Maintenance #14) Task Force: Jon Lewis <jon_lewis@dell.com>
IEEE P802.3cs Increased-reach Ethernet optical subscriber access (Super-PON): Claudio DeSanti <cdssdc@google.com>
IEEE P802.3ct 100Gb/s and 400Gb/s over DWDM systems: John D'Ambrosia <jdambrosia@ieee.org>
IEEE P802.3cu 100 Gb/s and 400 Gb/s over SMF at 100 Gb/s per Wavelength : Mark Nowell <mnowell@cisco.com>

IEEE 802.3 Study Group chairs

IEEE 802.3 Greater than 10 Gb/s Automotive Ethernet Electrical PHYs: Steve Carlson <scarlson@ieee.org>

Preliminary IEEE 802.3 Meeting Plan
Always check on-line schedule for latest updates

AM		IEEE P802.3ch IEEE P802.3cr IEEE P802.3cu IEEE 802.3 Opening Plenary	IEEE P802.3ca IEEE P802.3cg IEEE P802.3ch IEEE P802.3ck IEEE P802.3cu IEEE P802.3cp IEEE P802.3cq	IEEE P802.3ca IEEE P802.3cg IEEE P802.3ch IEEE P802.3ck IEEE P802.3cn/ct IEEE P802.3cs Maintenance	IEEE P802.3ca IEEE P802.3ck IEEE P802.3cm IEEE P802.3cs B10GAUTO SG
PM		IEEE 802.3ca IEEE P802.3cg IEEE P802.3ch IEEE P802.3cp IEEE P802.3cu	PAR review ad hoc IEEE P802.3ca IEEE P802.3cg IEEE P802.3ch IEEE P802.3ck IEEE P802.3cn/ct IEEE P802.3cu IEEE P802.3cp	IEEE P802.3ca IEEE P802.3cg IEEE P802.3ch IEEE P802.3ck IEEE P802.3cn IEEE P802.3cm IEEE P802.3cs IEEE P802.3ct	IEEE 802.3 Closing Plenary
			Automotive optical Multi-Gig CFI		
			Improving Timestamping Accuracy CFI		
			10 Mb/s Single Pair Ethernet Multidrop Enhancements CFI		

B10GAUTO SG: IEEE 802.3 Greater than 10 Gb/s Automotive Ethernet Electrical PHYs Study Group

State of the standard
IEEE Std 802.3-2018 Revision

IEEE Std 802.3-2018 Standard for Ethernet 8 Books (Sections) 14-Jun-18/31-Aug-18*							
Section 1 Clause 1 to 20 Annex A to H, 4A CSMA/CD Overview MAC PLS/AUI 10BASE5 MAU 10BASE2 MAU 10BROAD36 MAU 10BASE-T MAU 10BASE-F MAUs 10 Mb/s Repeater 10 Mb/s Topology 10BASE-Te 1BASE5 DTE & MAU Mgmt Repeater Mgmt	Section 2 Clause 21 to 33 Annex 22A to 33E 100 Mb/s Overview MII 100BASE-T2 100BASE-T4 100BASE-TX 100BASE-FX 100Mb/s Repeater 100Mb/s Topology MAC Control Auto-Negotiation (AN) Management DTE Power	Section 3 Clause 34 to 43 Annex 36A to 43C 1000 Mb/s Overview GMII 1000BASE-X AN 1000BASE-SX 1000BASE-LX 1000BASE-CX 1000BASE-T 1000 Mb/s Repeater 1000 Mb/s Topology	Section 4 Clause 44 to 55 Annex 44A to 55B 10 Gb/s Overview MDC/MDIO XGMII XAUI XSBI 10GBASE-SR 10GBASE-LR 10GBASE-ER 10GBASE-SW 10GBASE-LW 10GBASE-EW 10GBASE-LX4 10GBASE-CX4 10GBASE-T	Section 5 Clause 56 to 77 Annex 57A to 76A Subscriber Access Networks (SA) Overview OAM MPMC 100BASE-LX10 100BASE-BX10 1000BASE-LX10 1000BASE-BX10 1000BASE-PX10 1000BASE-PX20 10GBASE-PR 10/1GBASE-PRX 10PASS-TS 2BASE-TL SA Topology 10GBASE-LRM Backplane Overview 1000BASE-KX 10GBASE-KX4 10GBASE-KR Backplane AN BASE-R FEC	Section 6 Clause 78 to 95 Annex 83A to 93C EEE LLDP TLVs Time Sync RS-FEC 40/100G Overview 40GBASE-KR4 40GBASE-CR4 40GBASE-SR4 40GBASE-FR 40GBASE-LR4 40GBASE-ER4 100GBASE-CR10 100GBASE-SR10 100GBASE-KR4 100GBASE-KP4 100GBASE-CR4 100GBASE-SR4 100GBASE-LR4 100GBASE-ER4	Section 7 Clause 96 to 115 Annex 97A to 115A 100BASE-T1 1000BASE-T1 Single-Pair AN MAC Merge 10GPASS-XR EPoC PHY Link MPMC for EPoC PoDL 25Gb/s Overview 25GBASE-CR/CR-S 25GBASE-KR/KR-S 25GBASE-SR 25GBASE-LR 25GBASE-ER 25GBASE-T 40GBASE-T 1000BASE-RHA/B/C	Section 8 Clause 116 to 126 Annex 119A to 120E 200 Gb/s and 400 Gb/s Overview 200GBASE-DR4 200GBASE-FR4 200GBASE-LR4 400GBASE-SR16 400GBASE-DR4 400GBASE-FR8 400GBASE-LR8 2.5 Gb/s and 5 Gb/s Overview 2.5GBASE-T 5GBASE-T

State of the standard
Current amendments and other IEEE 802.3 standards

IEEE Std 802.3-2018 amendments

IEEE Std 802.3cb-2018
Physical Layer Specifications and Management Parameters for 2.5 Gb/s and 5 Gb/s Operation over Backplane
27-Sep-18/04-Jan-19*

IEEE Std 802.3bt-2018
Physical Layer and Management Parameters for Power over Ethernet over 4 pairs
27-Sep-18/31-Jan-18*

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 5-Dec-18/15-Feb-19*

Other IEEE 802.3 standards

IEEE Std 802.3.1-2013
IEEE Standard for Management Information Base (MIB) Definitions for Ethernet
14-Jun-13/02-Aug-13*

IEEE Std 802.3.2-2019
IEEE Standard for Ethernet YANG Data Model Definitions
21-Mar-19/TBD

State of the standard
IEEE 802.3 current status overview