IEEE 802.3 Working Group
November 2014 Plenary Week

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Web site: www.ieee802.org/3

Current IEEE 802.3 activities

- IEEE 802.3 Task Forces
  - IEEE P802.3bm 40 Gb/s and 100 Gb/s Fiber Optic
  - IEEE P802.3bn EPON Protocol over Coax (EPoC)
  - IEEE P802.3bp 1000BASE-T1
  - IEEE P802.3bq 40GBASE-T
  - IEEE P802.3br Interspersing Express Traffic
  - IEEE P802.3bs 400 Gb/s Ethernet
  - IEEE P802.3bt DTE Power via MDI over 4-Pair
  - IEEE P802.3bu 1-Pair Power over Data Lines (PoDL)
  - IEEE P802.3bw 100BASE-T1
- IEEE 802.3 Study Groups
  - IEEE 802.3 Gigabit Ethernet Over Plastic Optical Fiber
  - IEEE 802.3 25 Gb/s Ethernet
- IEEE 802.3 Industry Connection Ad Hoc
  - Next Generation Ethernet Passive Optical Networking (NGEPON)

IEEE 802.3 Maintenance

- Meeting plan
  - Consider new maintenance requests
  - Reviewing status of outstanding maintenance requests
  - IEEE Std 802.3.1-2013 adoption by ISO/IEC JTC1 SC6
    - Respond to comments received on vote on submission for adoption
  - Progress IEEE P802.3 (IEEE 802.3bx) revision project
    - To meet IEEE-SA requirement to enable future amendments
    - Draft is merge of IEEE Std 802.3-2012, IEEE Std 802.3bk-2013, IEEE Std 802.3bj-2014, accumulated maintenance changes and current IEEE P802.3bm draft
    - Draft submitted for Working Group preview
    - Preparation for a request to proceed to Working Group ballot
  - Consider any other maintenance business
- Web page
  - http://www.ieee802.org/3/maint/index.html

IEEE P802.3bm 40 Gb/s and 100 Gb/s Fibre Optic Task Force

Description

Provide an amendment to the IEEE 802.3 Ethernet standard to add 100 Gb/s Physical Layer (PHY) specifications using a four-lane electrical interface for operation on multimode and single-mode fiber optic cables and 40 Gb/s Physical Layer (PHY) specifications for operation on extended reach (> 10 km) single-mode fiber optic cables

Web site: http://www.ieee802.org/3/bm/index.html

Status

Met during the September 2014 meeting series

Draft D3.2 sent out for 2nd Sponsor recirculation ballot

Meeting plan

Consideration of comments received against draft D3.2

Prepare for request to proceed to RevCom submittal

IEEE P802.3bn EPON Protocol over Coax (EPoC) Task Force

Description

Provide an amendment to the IEEE 802.3 Ethernet standard to add physical layer specifications and management parameters for symmetric and/or asymmetric operation of up to 10 Gb/s on point-to-multipoint Radio Frequency (RF) distribution plants comprising either amplified or passive coaxial media. 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/bn/index.html

Status

Met during the September 2014 meeting series

Draft D1.1 sent out for Task Force review

Meeting plan

Consideration of comments received against draft D1.1

Continue work towards technically complete draft for working group ballot

IEEE P802.3bp 1000BASE-T1 Task Force

Description

Specify additions to and appropriate modifications of IEEE Std 802.3 to add a point-to-point 1 Gb/s Physical Layer (PHY) specifications and management parameters for operation over single twisted pair copper cables

Web site: http://www.ieee802.org/3/bp/index.html

Status

Met during the September 2014 meeting series

Draft D1.0 sent out for 1st Task Force review

Meeting plan

Consideration of comments received against draft D1.0

Continue work towards technically complete draft for working group ballot

IEEE P802.3bq 40GBASE-T Task Force

Description

Specify a Physical Layer (PHY) for operation at 40 Gb/s on balanced twisted-pair copper cabling, using existing Media Access Control, and with extensions to the appropriate physical layer management parameters.

Web site: http://www.ieee802.org/3/bq/index.html

Status

Met during the September 2014 interim meeting series

Draft D1.0 sent out for 1st Task Force review

Meeting plan

Consideration of comments received against draft D1.0

Work towards technically complete draft for working group ballot

IEEE P802.3br Interspersing Express Traffic Task Force

Description

Specify additions to and appropriate modifications of IEEE Std 802.3 to add support for interspersing express traffic over a single physical link

Web site: http://www.ieee802.org/3/br/index.html

Status

Met during the September 2014 meeting series

Draft being reviewed by Task Force

Meeting plan

Continue work towards technically complete draft for working group ballot

IEEE P802.3bs 400 Gb/s Ethernet Task Force

Description

Define Ethernet Media Access Control (MAC) parameters, physical layer specifications, and management parameters for the transfer of Ethernet format frames at 400 Gb/s

Web site: http://www.ieee802.org/3/bs/index.html

Status

Met during the September 2014 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 P802.3bt DTE Power via MDI over 4-Pair Task Force

Description

Augment the capabilities of the IEEE Std 802.3 standard with 4-pair power and associated power management information. The project will augment the methodology for the provision of power via balanced cabling to connected Data Terminal Equipment with 802.3 interfaces. Optional augmented power limit will be made available for certain structured cabling systems. Compatibility with existing equipment will be maintained.

Web site: http://www.ieee802.org/3/bt/index.html

Status

Met during the September 2014 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 P802.3bu 1-Pair Power over Data Lines (PoDL) Task Force

Description

Single twisted pair Ethernet links are in development (e.g. IEEE P802.3bp) and some applications (e.g., automotive sensors, industrial devices) require power delivery over the link. A new standard is required to provide power over single twisted pair links where IEEE Std 802.3 Clause 33 Data Terminal Equipment (DTE) Power via Media Dependent Interface (MDI) cannot be used.

Web site: http://www.ieee802.org/3/bu/index.html

Status

Met during the September 2014 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 P802.3bw 100BASE-T1 Task Force

Description

Specify additions to IEEE Std 802.3 Standard for Ethernet to add a point-to-point full duplex 100 Mb/s Physical Layer (PHY) specifications for operation over single twisted pair balanced cabling.

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

Status

Met during the September 2014 meeting series

Draft sent out for Task Force review

Additional October 2014 interim meeting

Draft submitted for Working Group preview

Meeting plan

Prepare for request to proceed to Working Group ballot

IEEE 802.3 Gigabit Ethernet Over Plastic Optical Fiber Study Group

- Description
  - Develop a Project Authorization Request (PAR) and Criteria for Standards Development (CSD) for Gigabit Ethernet over Plastic Optical Fibre
  - Web site: http://www.ieee802.org/3/GEPOFSG/index.html
- Status
  - Submitted draft objectives, CSD and PAR at the July IEEE 802 plenary
    - Objectives were approved by the IEEE 802.3 Working Group
    - CSD did not gain approval of the IEEE 802.3 Working Group
  - Met during the September 2014 meeting series
  - Developed and submitted updated draft PAR and CSD
- Meeting plan
  - Progress approval of CSD and NesCom submittal of updated PAR for IEEE P802.3bv Standard for Ethernet Amendment: Physical Layer Specifications and Management Parameters for 1000 Mb/s Operation Over Plastic Optical Fiber

IEEE 802.3 Gigabit Ethernet Over Plastic Optical Fiber Study Group (con't)

Scope of proposed project

This amendment adds physical layer (PHY) specifications for IEEE Std 802.3 operation at 1000 Mb/s using standardized plastic optical fiber as the point-to-point data transmission medium. Appropriate management parameters will be enhanced or added in support of the PHY specifications.

Draft PAR

http://www.ieee802.org/3/GEPOFSG/P802_3bv_PAR_240914.pdf

Draft CSD

http://www.ieee802.org/3/GEPOFSG/CSD_GEPOF_0914.pdf

Approved objectives

http://www.ieee802.org/3/GEPOFSG/Objectives_GEPOF_2_0714.pdf

IEEE 802.3 25 Gb/s Ethernet Study Group

Description

Develop a Project Authorization Request (PAR) and Criteria for Standards Development (CSD) for 25 Gb/s Ethernet over a single lane for server interconnects

Web site: http://ieee802.org/3/25GSG/public/index.html

Status

First meeting during September 2014 meeting series

Completed draft objectives, CSD and PAR for proposed project

Meeting plan

Progress approval of objectives, CSD and NesCom submittal of PAR for IEEE P802.3by Standard for Ethernet Amendment: Media Access Control Parameters, Physical Layers and Management Parameters for 25 Gb/s Operation

IEEE 802.3 25 Gb/s Ethernet Study Group (con't)

Scope of proposed project

Define Ethernet Media Access Control (MAC) parameters, physical layer specifications, and management parameters for the transfer of Ethernet format frames at 25 Gb/s for server to switch interconnections.

Draft PAR

http://www.ieee802.org/3/25GSG/25GE_PAR_final_110914.pdf

Draft CSD

http://www.ieee802.org/3/25GSG/25GE_CSD_0914_adopted.pdf

Draft Objectives

http://www.ieee802.org/3/25GSG/25GE_Objectives_0914_adopted.pdf

IEEE 802.3 Industry Connections Next Generation Ethernet Passive Optical Network (NG-EPON) Ad Hoc

Description

The activity has been chartered to generate a report which will detail: (a) operators' requirements, (b) technological and economic tradeoffs of various approaches to next generation EPON, (c) the state of the art for optical subscriber access network technology, and (d) potential solutions that merit further consideration.

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

Status

Fifth meeting during September 2014 meeting series

Data gathering and review of draft report

Meeting plan

Continue data gathering and review of draft report

IEEE 802.3 Next Generation Enterprise Access BASE-T PHY Call for Interest

This is a call for interest to initiate a Study Group to explore the need for one or more new Ethernet speed(s) between 1 Gb/s and 10 Gb/s over balanced twisted pair cabling. We believe there is a market need, driven by IEEE Std 802.11ac wireless access points, to support higher than 1 Gb/s Ethernet rates at a 100m reach using the installed base of Cat5e (or better) structured cabling. Higher performance end devices like desktop and laptop PCs, as well as other enterprise applications for Ethernet, will also benefit from the new data rates provided by this work.

This request for agenda time for this CFI has been received from Yong Kim <ybkim@broadcom.com>

IEEE 802.3 25GBASE-T Call for Interest

The rapid progress of the 25 Gb/s Ethernet Study Group highlighted the broad market potential for 25 Gb/s Ethernet switch-to-server interconnect in a range of data center wiring architectures including within-rack, adjacent rack, middle-of-row, and end-of-row switching topologies. At the 10 Gb/s rate, the use of BASE-T for these applications is growing as an augment to fiber and direct-attach twinax copper. The IEEE P802.3bq 40GBASE-T Task Force has been addressing switch-to-server interconnect for these topologies at a 40 Gb/s rate. At this time, there is no path for data centers to utilize cost-effective and backwards compatible BASE-T technology for 25 Gb/s Ethernet. This Call For Interest is a request for the formation of a study group to explore 25 Gb/s BASE-T Ethernet and potentially extending the work of the IEEE P802.3bq Task Force to include it.

This request for agenda time for this CFI has been received from David Chalupsky <david.chalupsky@intel.com>

IEEE 802.3 Officers

IEEE 802.3 Chair: David Law <dlaw@hp.com>
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IEEE P802.3bs 400 Gb/s Ethernet: John D'Ambrosia <john_dambrosia@dell.com>
IEEE P802.3bt DTE Power via MDI over 4-Pair: Chad Jones <cmjones@cisco.com>
IEEE P802.3bu 1-Pair Power over Data Lines (PoDL): Dave Dwelley <ddwelley@linear.com>
IEEE P802.3bw 100BASE-T1: Thomas Hogenmueller <thomas.hogenmueller@de.bosch.com>

IEEE 802.3 Study Group chairs

IEEE 802.3 Gigabit Ethernet Over Plastic Optical Fiber: Bob Grow <bob.grow@ieee.org>
IEEE 802.3 25Gb/s Ethernet Mark Nowell <mnowell@cisco.com>

Preliminary IEEE 802.3 Meeting Plan

	Sun	Mon	Tue	Wed	Thu
AM			IEEE P802.3bn IEEE P802.3bq IEEE P802.3bs IEEE P802.3br IEEE P802.3bu IEEE P802.3bw GEPOF_SG 25G_SG	IEEE P802.3bm IEEE P802.3bn IEEE P802.3bp IEEE P802.3bq IEEE P802.3br IEEE P802.3bs IEEE P802.3bt IEEE P802.3bw GEPOF_SG 25G_SG	IEEE P802.3bm IEEE P802.3bn IEEE P802.3bp IEEE P802.3bq IEEE P802.3br IEEE P802.3bs IEEE P802.3bt IEEE P802.3bw GEPOF_SG 25G_SG
PM	IEEE 802.3 Next Generation Ethernet Passive Optical Network Ad Hoc	IEEE 802.3 Opening Plenary	IEEE P802.3bn IEEE P802.3bq IEEE P802.3bs IEEE P802.3br IEEE P802.3bt IEEE P802.3bw GEPOF_SG 25G_SG	IEEE P802.3bm IEEE P802.3bn IEEE P802.3bp IEEE P802.3br IEEE P802.3bs IEEE P802.3bt IEEE P802.3bw GEPOF_SG 25G_SG Maintenance	IEEE 802.3 Closing Plenary
		Gigabit Ethernet over PoF tutorial	Next Gen Enterprise Access BASE-T CFI		
		Introduction to EPoC tutorial	25GBASE-T CFI		

GEPOF_SG: IEEE 802.3 Gigabit Ethernet Over Plastic Optical Fiber Study Group
25G_SG: IEEE 802.3 25 Gb/s Ethernet Study Group

IEEE 802.3 Standards

IEEE Std 802.3™-2012 (30th Aug 12 / 28th Dec 12)*

IEEE Std 802.3bk™-2013 (23rd Aug 13 / 30th Aug 13)*

IEEE Std 802.3bj™-2014 (12th Jun 14 / 3rd Sep 14)

IEEE Std 802.3.1™-2013 (14th Jun 13 / 2nd Aug 13)*

* Available through Get IEEE 802
http://standards.ieee.org/getieee802/802.3.html

Note 1: Dates are Approval date / Publication date

Current project drafts

IEEE P802.3bm/D3.2 40 Gb/s and 100 Gb/s Operation Over Fiber Optic Cables

- 2nd Sponsor recirculation ballot draft

IEEE P802.3/D1.0 (IEEE 802.3bx) Maintenance #11 (revision)

- Working Group ballot preview draft

IEEE P802.3bw/D1.1 100BASE-T1

- Working Group ballot preview draft