

# Un vistazo a las NORMAS

A continuación, están los puntos más importantes de los proyectos activos de las reuniones más recientes del comité. Para la lista completa de las últimas actualizaciones de los comités de IEEE, ISO y TIA, lea el [Reporte de Normas del Primer Trimestre de 2019 de Leviton](#) (pdf).



## IEEE 802.3

**Ethernet de un par IEEE P802.3cg 10Mb/s** — Esta norma se aprobó para avanzar hacia la etapa de votación de la asociación en su conjunto, por lo que en la siguiente votación participará todo el grupo 802.3 y no solo para el grupo de trabajo de la 802.3cg. Se espera que esta norma se publique en septiembre de 2019.

El proyecto soporta dos diferentes diseños de PHY. La aplicación de largo alcance (10BASE-T1L) soporta distancias de hasta 1 000 metros, mientras que la aplicación de corto alcance (10BASE-T1S) soporta distancias de hasta 15 metros.

**IEEE P802.3cn 50 Gb/s, 200 Gb/s, y 400 Gb/s para más de 10 km de fibra monomodo** — Esta norma está actualmente en la versión de borrador 2.0, aunque no hubo muchos cambios entre la versión 1.0 y la 2.0. Se espera que esta norma se publique en junio de 2020.

**IEEE P802.3cm 400 Gb/s para multimodo** — Este proyecto respaldará los 400 Gb/s para fibras multimodo. La aplicación 400GBASE-SR4.2 soporta el cable OM5 de hasta 150 metros. La aplicación 400GBASE-SR8 soporta cable OM4/OM5 de hasta 100 metros y cable OM3 de hasta 70 metros.

Esta norma se encuentra actualmente en su versión de borrador 2.0 y avanza hacia la primera votación del grupo de trabajo. Se espera que se publique en diciembre de 2019.

## ISO/IEC

**Ethernet de un par** — Hay varias enmiendas en proceso para agregar el Ethernet de solo par a la serie de normas 11801. Estas incluyen: 11801-1 AMD1 (Genérica), 11801-3 AMD1 (Industrial), y 11801-6 AMD1 (Sistemas de edificios distribuidos). Los tres documentos se encuentran en sus etapas preliminares con borradores pendientes. El documento 11801-1 AMD1 está esperando la publicación de TR 11801-9906.

**Enlace de terminación con plug modular (MPTL, por sus siglas en inglés)** — El desarrollo comenzó en un reporte técnico (TR 11801-99xx ED1) para definir la topología del enlace de terminación con plug modular. Es muy probable que este documento adopte la definición de MPTL de la ANSI/TIA-568.2-D. Este esfuerzo es una investigación preliminar, con un borrador de trabajo ya circulando para comentarios.

**Alimentación a través de Ethernet** — La TS 29125 AMD1 ED2 es una enmienda que expande el alcance de entrega de potencia del documento para incluir el cableado de 4 pares 28 AWG y admitir el cableado de un par (802.3bu PoDL). Este documento está en su etapa preliminar con borrador de trabajo pendiente.

**Fibra óptica multimodo** — El trabajo está progresando en la TR 11801-9908 ED1, esta abordará las aplicaciones de velocidades más altas para la fibra óptica multimodo. Ya está circulando un segundo borrador de trabajo para comentarios.



## TIA TR-42

**Cableado para telecomunicaciones comerciales TR-42.1** — Se ha pospuesto todo el trabajo referente a la revisión E para los sistemas de cableados genéricos (568.0-E) y comerciales (568.1-E) para la junta de junio 2019 y así darle oportunidad al grupo de trabajo para que complete el trabajo relevante de ambas normas.

La norma para el cableado de planta exterior (ANSI/TIA- 758-D) ya progresó a la segunda votación industrial. Es posible que esta norma se publique para finales de 2019. Siguen trabajando en una revisión para la norma de cableado educacional (ANSI/TIA-4966-A). En la junta de junio de 2019 se empezará a trabajar en una revisión para la Guía de TSB para cableado inalámbrico (TSB-162-B).

**TR-42.7 - Sistemas de cableado de cobre para telecomunicaciones** — La Norma para un par de Ethernet (ANSI/TIA-568.5) pasó del grupo de trabajo al ciclo de votaciones. La primera votación del primer borrador ya empezó a circular en el subcomité y será revisada en la junta de junio de 2019.

**TR-42.11 - Sistemas de fibra óptica** — Siguen desarrollando un nuevo documento (TSB-5069) para brindar orientación para la polaridad de fibras de una y dos filas. Ya circula la primera votación en el comité la cual será revisada en la junta de junio de 2019.



# The Standards Report

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## IEEE 802.3

### PUBLISHED AMENDMENTS TO IEEE 802.3™-2018

- **IEEE Std 802.3bt™-2018** Amendment 2: DTE Power via MDI over 4-Pair
- **IEEE Std 802.3cb™-2018** Amendment 1: Physical Layer Specifications and Management Parameters for 2.5 Gb/s and 5 Gb/s Operation over Backplane
- **IEEE Std 802.3cd™-2018** Amendment 3: 50 Gb/s, 100 Gb/s, and 200 Gb/s Ethernet

### ACTIVE IEEE 802.3 PROJECTS

- **IEEE P802.3cg** 10 Mb/s Single-Pair Ethernet
  - This standard was approved to progress to Standards Association ballot stage, so the next round of balloting is available to the entire 802.3 group, not just the 802.3cg working group. This standard is estimated to publish in September 2019.
  - This project supports two different PHY designs. The long reach application (10BASE-T1L) supports distances up to 1000 meters, while the short reach application (10BASE-T1S) supports distances up to 15 meters.
  - Single-pair cabling will have the option of power delivery as defined by the 802.3bu (PoDL) standard, supporting up to 50 watts.
  - Two connector types are recognized for use with single-pair ethernet. IEC 63171-1 is a copper LC-style connector targeted for use in enterprise applications. IEC 61371-6 is an industrial style connector suitable for harsher environments.
- **IEEE P802.3ch** Multi-Gig Automotive Ethernet PHY
  - This standard supports 2.5G/5G/10G data rates up to 15 meters for automotive applications. While it's possible the work from this standard could impact enterprise applications in the future, for now the target use cases are limited to the automotive industry. This standard is estimated to publish in June 2020.
- **IEEE P802.3ca** 25 Gb/s, 50 Gb/s, and 100 Gb/s Ethernet Passive Optical Networks
  - This standard supports 25 Gb/s and higher data rates

for EPON applications, with backwards compatibility for 10 Gb/s. Draft 1.6 will be circulated for comments. This standard is estimated to publish in August 2020.

- **IEEE P802.3cm** 400 Gb/s over Multimode
  - This project will support 400 Gb/s over multimode fiber. The 400GBASE-SR4.2 application supports OM5 cable up to 150 meters. The 400GBASE-SR8 application supports OM4/OM5 cable up to 100 meters and OM3 cable up to 70 meters.
  - This standard is currently at draft 2.0 and will progress to a first working group ballot. This standard is estimated to publish in December 2019.
- **IEEE P802.3cn** 50 Gb/s, 200 Gb/s, and 400 Gb/s over Greater than 10 km of Single-Mode Fiber
  - This standard is currently at draft 2.0, although no changes occurred between drafts 1.0 and 2.0. This standard is estimated to publish in June 2020.
- **IEEE P802.3cp** Bidirectional 10 Gb/s, 25 Gb/s, and 50 Gb/s Optical Access PHYs
  - This standard is only a draft outline currently. The standard is estimated to publish in November 2020.
- **IEEE P802.3cs** Increased-reach Ethernet Optical Subscriber Access (Super-PON)
  - This standard is very early in the development process and does not have a draft yet. This standard is estimated to publish in May 2020.
- **IEEE P802.3ct** 100 Gb/s and 400 Gb/s over DWDM systems
  - This standard is very early in the development process and does not have a draft yet. This standard is estimated to publish in September 2021.

### NEXT MEETINGS:

Interim — May 20-24, 2019 | Salt Lake City, UT  
 Plenary — July 14-19, 2019 | Vienna, Austria

## TIA TR-42

### RECENTLY PUBLISHED OR RE-AFFIRMED

- **ANSI/TIA-568.2-D** Balanced Twisted-Pair Telecommunications Cabling and Components Standard

- **ANSI/TIA-568.3-D-1**, Optical Fiber Cabling Component Standard- Addendum 1 General Updates
- **ANSI/TIA-570-D** Residential Telecommunications Infrastructure Standard
- **ANSI/TIA-569-D-2** Telecommunications Pathways and Spaces: Addendum 2 – Guidelines for Supporting Remote Powering
- **TIA-TSB-184-A-1** Guidelines for Supporting Power Delivery Over Balanced Twisted-Pair Cabling: Addendum 1, Guidance to support 28 AWG cords
- **ANSI/TIA-568.2-D-1** Amendment 1: Balun Requirements for Category 8 Testing
- **TSB-5008** Mechanically-Generated Cable Impulse Noise Detection and Characterization
- **TSB-1197** Mode Conversion Parameters for Balanced Twisted Pair Cabling

ANSI/TIA-568.2-D includes requirements for Cat 8, Modular Plug Terminated Link (MPTL) topologies, as well as recognizing 28 AWG patch cords as category rated. TSB-184-A-1 provides guidance when using 28 AWG patch cords for power delivery.

- **TR-42.1 – Commercial Telecommunications Cabling**
  - Work on the E revision for generic (568.0-E) and commercial (568.1-E) cabling systems has been deferred until the June 2019 meeting to allow a Task Group to complete work relevant to both standards. The standard for outside plant cabling (ANSI/TIA-758-D) has progressed to a second industry ballot. This standard is likely to publish by the end of 2019. Work continues for a revision to the education cabling standard (ANSI/TIA-4966-A). A revision for the TSB providing guidance for WAP cabling (TSB-162-B) will begin work at the June 2019 meeting.
- **TR-42.3 – Telecommunications Administration, Pathways, Spaces, Bonding and Grounding**
  - The standard for bonding and grounding (ANSI/TIA-607-D) has progressed to an industry ballot. The pathways and spaces standard (ANSI/TIA-569-E) has progressed to a first default ballot. No significant changes are anticipated for either of these standards, and both are likely to publish in 2019.
- **TR-42.7 – Telecommunications Copper Cabling Systems**
  - The Single-Pair Ethernet standard (ANSI/TIA-568.5) has moved from the Task Group into the balloting cycle. The first mock ballot has been circulated to the sub-committee and will be reviewed at the June 2019 meeting. This standard is expected to be completed by the end of 2019.
- **TR-42.11 – Optical Fiber Systems**
  - Development continues for a new document (TSB-5069) providing guidance for single and double row fiber polarity. A first committee ballot has been circulated, which will be reviewed at the June 2019 meeting.
- **TR-42.12 – Optical Fibers and Cables**
  - Changes for ANSI/TIA-598-D include the incorporation of Addendum 1 (additional colors for fibers 13-16),

Addendum 2 (OM5 jacket color), as well as incorporating the enhanced connector and adapter identification from ANSI/TIA-568.3-D.

- ANSI/TIA-455-95B (FOTP-95B), Absolute Optical Power Test was approved to publish
- ANSI/TIA-455-82B (FOTP-82), Fluid Penetration progressed to an industry ballot

#### • **TR42.13 – Passive Optical Devices and Fiber Optic Metrology**

- Development continues for TIA-604.19 (FOCIS 19) which provides specifications for the CS connector. This standard has moved to a first committee ballot.

#### **NEXT MEETINGS:**

Plenary — June 10-14, 2019 | Vancouver, BC

Plenary — Sep 16-20, 2019 | Albuquerque, NM

## ISO/IEC

ISO/IEC JTC1/SC25 WG3 – Customer Premises Cabling

IEC SC46C – Wires and Cables – Sub-committee of TC46 (cables, wires, connectors)

IEC SC48B – Electrical Connectors – Sub-committee of TC46 (cables, wires, connectors)

#### **RECENTLY PUBLISHED:**

- **ISO/IEC 30129:2015/AMD1:2019** – Telecommunications bonding networks for buildings and other structures

#### **ACTIVE PROJECTS:**

- **Single-Pair Ethernet**
  - Multiple amendments are in process to add single-pair ethernet to the 11801 series of standards. These include: 11801-1 AMD1 (Generic), 11801-3 AMD1 (Industrial), and 11801-6 AMD1 (Distributed Building Systems). All three documents are in a preliminary state, with a working draft (WD) pending. Document 11801-1 AMD1 is awaiting publication of TR 11801-9906.
  - TR 11801-9906 ED1 enables single-pair ethernet to operate over installed 4-pair cable. This document supports multiple SPE applications, including: 802.3bp (1000BASE-T1), 802.3bw (100BASE-T1), 802.3cg (10BASE-T1L, 10BASE-T1S). A second Working Draft (WD) is currently circulating for comment.
  - IEC SC46C is developing several standards for single-pair ethernet cable. IEC 61156-11 defines SPE 1-pair horizontal cable up to 600 MHz, supporting a 1 Gb/s data rate. The FDIS document has been approved, and this standard is estimated to publish in Apr 2019. IEC 61156-12 defines SPE 1-pair patch cable up to 600 MHz, supporting a 1 Gb/s data rate. This document is in a Committee Draft (CD) stage, with a target publication date of December 2020. IEC 61156-13 defines SPE 1-pair patch cable up to 20 MHz, supporting a 10 Mb/s data rate. This document is in a Committee Draft (CD) stage, with a target publication date of July 2020.

- IEC SC48B is developing several standards for single-pair ethernet connectors. Two connector designs have been specified in the IEEE 802.3cg standard. IEC 63171-1 is a copper LC-style connector targeted for use in enterprise applications. This standard is in a Committee Draft Voting (CDV) stage, with a target publication of May 2020. IEC 61371-6 is an industrial style connector suitable for harsher environments. This design is formerly IEC 61076-3-125. This standard is in a Committee Draft Voting (CDV) stage, with a target publication of April 2020.

#### • Direct Attach Cabling (DAC)

- DAC assemblies are patch cords operating as a complete channel. TR 11801-9907 ED1 has been approved for publication and is expected to be available in July 2019.

#### • Modular Plug Terminated Link (MPTL)

- Development has begun on a technical report (TR 11801-99xx ED1) to define a Modular Plug Terminated Link (MPTL) topology. This document will most likely adopt the MPTL definition from ANSI/TIA-568.2-D. This effort is a preliminary investigation, with a Working Draft (WD) having been circulated for comment.

#### • Multimode Optical Fiber

- Work is progressing on TR 11801-9908 ED1, which addresses higher speed applications over multimode optical fiber. A second Working Draft (WD) has been circulated for comment.

#### • Cat 8 & 25G

- TR 11801-9909 ED1 investigates the support of 25 Gb/s data rates at extended distances (over 30 meters) using Cat 8.1 or 8.2 channels. A Working Draft (WD) has been circulated for comment.

#### • Power Over Ethernet

- 18589 AMD1 ED1 is an amendment that will expand the scope of AIM systems to address POE. A Working Draft (WD) has been circulated for comment.
- TS 29125 AMD1 ED2 is an amendment that expands the power delivery document scope to include 28 AWG 4-pair cabling and support for 1-pair (802.3bu PoDL) cabling. This amendment is in a preliminary stage, with a Working Draft (WD) pending.

#### • Pathways, Spaces, Administration

- 14763-2 ED2 provides guidelines and requirements for the installation and planning of cabling systems. The standard contains similar topics to ANSI/TIA 569 (Pathways & Spaces) and ANSI/TIA 606 (Administration). A Committee Draft Voting (CDV) ballot of this standard is circulating for comment.

#### • Physical Network Security

- Preliminary work has started on a new standard to address physical network security for buildings. This standard will likely adopt the content from ANSI/TIA-5017. A Working Draft (WD) is pending.

## ISO/IEC

IEC SC86A – Fibres and Cables - Sub-committee of TC86 (Fibre Optics)

IEC SC86B – Fibre optic devices and passive components - Sub-committee of TC86 (Fibre Optics)

IEC SC86C – Fibre optic systems and active devices - Sub-committee of TC86 (Fibre Optics) Working Group 1 - Fibre optic communications systems and sub-systems

### ACTIVE PROJECTS:

#### • Test and Measurement

- IEC 60794-1-21 AMD1 Ed.1: Mechanical tests methods
- IEC 60794-1-23 Ed2: Cable element test methods
- IEC 60794-1-215: Cable external freezing test, Method F15
- IEC 60794-1-202 Ed.1: Material compatibility test
- IEC 61300-3-35 Ed.3: Visual inspection of polished end faces

#### • Cable Specifications

- IEC 60793-2-40 Ed.4: A4 fibres detail spec
- IEC 60793-2-10 Ed.7: Sectional specification for category A1 MMF
- IEC 60794-2-11 Ed.3: Detailed specification for simplex and duplex cables for use in premises cabling
- IEC 60794-2-21 Ed.3: Detailed specification for multi-fibre optical distribution cables for use in premises cabling
- IEC 60794-2-31 Ed.3: Detailed specification for optical fibre ribbon cables for use in premises cabling
- IEC 60794-2-50 Ed.2: Family specification for simplex and duplex cables for use in terminated cable assemblies
- IEC 60794-6 Ed.1: Sectional specification for Indoor-Outdoor cables
- IEC 60794-6-10 Ed.1: Family specification for a Universal Indoor-Outdoor cable
- IEC 60794-6-30 Ed.1: Family specification for Weatherized Indoor cables
- IEC 61754-7-3 ED1: Type MPO connector family - Two fibre rows 16 fibre wide

### NEXT MEETINGS:

ISO/IEC JTC1/SC25 WG3

67th WG3 plenary — Sep 23-26, 2019 | Nagasaki, Japan

68th WG3 interim — Feb 24-28, 2020 | Sydney, Australia

IEC TC46/SC46C

Plenary – Oct 14-18, 2019 | Shanghai, CN

IEC TC48/SC48B

Plenary — Sep 3-5, 2019 | Arlington, VA

IEC TC86 (SC86A/B/C)

Plenary — Oct 14-18, 2019 | Shanghai, CN