IEEE 802.3 Ethernet Working Group
TIA TR-42 Liaison to IEEE 802.3

Bob Voss

28Jul2025

Introduction to TIA

- Telecommunications Industry Association
- www.tiaonline.org
- TR-42: Defines mechanical and transmission requirements for copper twisted-pair, optical fiber, and coaxial cabling and components
- Status: TIA TR42 Plenary Meetings, 02-06Jun2025 in Boise, ID

TR 42.1 - *Premises Telecommunications Infrastructure*

Open Documents:

ANSI/TIA-568.1-F (Consolidation of 568.0, 568.1 & 862) – comments were resolved, will go out for another committee ballot and expect to resolve comments at our October meeting

ANSI/TIA-758-C (OSP) – comments were resolved, we are going back out for another recirculation ballot, expect discussion on removing copper from the document and into an annex as part of ballot resolution in October

Status Update & Next Steps:

ANSI/TIA-5017-A (Security) – will schedule an interim meeting to resolve comments

TSB-162-B (Wireless Access Points) – will schedule an interim meeting to resolve comments

Reviewing a PAR for DAS TSB updates in October

TR 42.3 – *Commercial Building Telecommunications Pathways & Spaces*

- Comment Resolution
  - ANSI/TIA-569-F (Pathways & Spaces)
    - Resolved ballot comments (TR423-2025-06-008a).
      - Deferred comments related to FMP
      - TR-42.3 agreed to establish a joint a TR-42.1 and TR-42.3 FMP Task Group available to all members of TR-42 to address comments to TIA-568.1, TIA-569, and TIA-606 related to fault managed power (FMP).
    - Issue another committee ballot (call for comments)
  - TIA-606-E (Administration)
    - Resolved ballot comments (TR423-2025-06-009a)
    - 60-day ANSI/Approval Ballot on the entire document for TIA-606-E.

TR 42.5 – *Telecommunications Infrastructure Terms & Symbols*

Approved New and Modified Definitions and Acronyms

New definition

Limited energy powering applications: Electrical systems that provide power for communications, signaling, and other low-voltage applications, often described as Class 2, 3, or 4 systems defined in NFPA 70.

New acronyms

CAD Computer Aided Design

Modifications

hybrid cable:

Original: Cable that contains both optical fiber and current carrying members.

New: A cable that contains both optical fiber and metallic current-carrying members.

main cross-connect:

Original: Distributor C

New: Central connection facility in a hierarchical star topology.

Distributor C

Original: Central connection facility in a hierarchical star topology (TIA 568-C.0).

New: See main cross-connect.

transverse conversion transfer loss

Original: A ratio, expressed in dB, of the measured common mode voltage on a pair relative to the differential mode voltage applied at the opposite end of the same pair ~~or on either end of another pair~~.

New: A ratio, expressed in dB, of the measured common mode voltage on a pair relative to the differential mode voltage applied at the opposite end of the same pair.

TR 42.7 - *Telecommunications Copper Cabling Systems*

- **ANSI/TIA-568.6** (Single Pair Multi-Drop (SPMD))
  - Agreed to keep the existing project open and discuss in Oct
  - Ties to draft sharing request with IEEE 802.3da TF

- **ANSI/TIA-1152-A**, Requirements for Field Test Instruments and Measurements for Balanced Twisted-Pair Cabling
  - Agreed to reaffirm document

- **ANSI/TIA-568.5-A**, standard for 1-pair cabling – Revision (Editor - TBD)
  - Call for Editor

- **TSB-XXXX**, Guidelines for Supporting Extended Distance over 4-pair Balanced Twisted-Pair Cabling
  - Reviewed task group draft and draft PAR
  - Task group to continue working on draft
  - Agreed on PAR to be submitted to Initiate the project

TR 42.7 - *Telecommunications Copper Cabling Systems*

ANSI/TIA-5071, Requirements for Field Test Instruments and Measurements for Balanced Single Twisted-Pair
•Discussed reaffirmation/revision/withdrawal.
•Agreed to request a link for a copy of ANSI/TIA-5071 document for subcommittee to review to have further discussion in October.

ANSI/TIA-568.4-E, Broadband Coaxial Cabling and Components Standard
•Agreed to reaffirm document. PAR to be submitted.

•**Request from TR42.1 to review table from 568.1-F draft**
•Task group will meet to discuss this table on patch cord length vs permanent link length and provide a recommendation

TR 42.9 - *Industrial Telecommunications Infrastructure*

ANSI/TIA-1005-B

Ballot comments addressed.
Motion approved to send out for a limited recirculation ballot for Annex B.

ANSI/TIA-568.7 Industrial SPE

Ballot comment resolution completed
Motion approved to send out for full document recirculation ballot
Motion approved to send forthcoming Draft 11 to the USTAG for submittal to IEC SC25 WG3

TR 42.11 - *Optical Fiber Systems*

ANSI/TIA-568.3-E-1 [Optical Fiber Cabling and Components]:

Completed comment resolution of Ballot 3 Call for Comments.

Agreed to initiate Ballot 4 Call For Comments including resolved comments.

Tiger presented contribution: Polarity consideration for 4-core MCF

Phil I. to facilitate ad-hoc meeting on polarity and IEEE contribution per breakout reference table and review withdrawn comments.

Reviewed document maintenance.

ANSI/TIA 526-2-A: Output Power Measurement for SM Fiber. Motion to Publish

ANSI/TIA-526-28: Attenuation measurement of MPO. Motion to Publish

ANSI/TIA-526-7: SM Attenuation and RL measurement. Ballot Call for Comments

Other

Reviewed IEC SC86C liaison status. Seymour Goldstein agreed to provide report.

TR 42.11 – *Breakout cases under review*

#	Use Cases	Connectors	Described TIA 568.3 E (r2022)?	TIA 568.3 E1 current draft (2025)?	Comments
1	1.6TBASE-DR8 to ***2*** 800GBASE-DR4	MPO-16 to 2 x MPO-12 (8f)	No	Yes	Type A and B patch cords are covered in E1, but no method description A, B, or alternative is provided for APC. An explicit description will be useful to support other use cases.
2	1.6TBASE-DR8 to ***4*** 400GBASE-DR2	MPO-16 to 4 x MPO-12	No	No	A short description should be included based on use case 1.
3	1.6TBASE-DR8 to ***8*** 200GBASE-DR1	MPO-16 to 8 duplex LC	No	Yes	E1 to include a note explaining how the breakout pattern (transition) MPO-16 to 8 duplex LCs can be derived from the case MPO-12 to 4 LCs already documented in version E.
4	800G BASE-DR4 to ***2*** 400GBASE-DR2	MPO-12 (8f) to 2 MPO-12 (4f)	No	No	A short description should be included based on use case 1. A text such as "Assembling shown different number of fibers can be derived from pattern is established based on the MPO-16. "
5	800G BASE-DR4 to ***4*** 200GBASE-DR1	MPO-12 to 4 duplex LC	Yes	Yes	Covered. Moreover, the case 400G BASE-DR2 to 2 duplex LC can be easily extrapolated from this case (5).

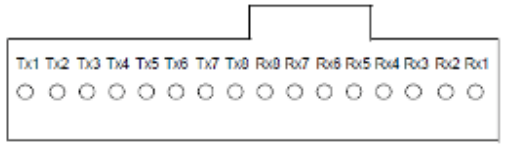

Figure 180–9—1.6TBASE-DR8 optical lane assignments

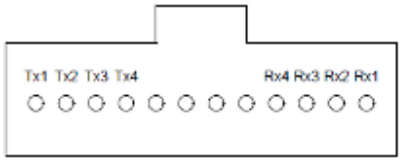

Figure 180–8—800GBASE-DR4 optical lane assignment

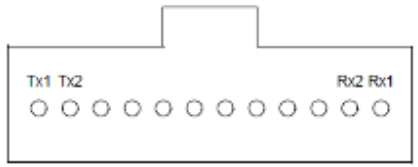

Figure 180–7—400GBASE-DR2 optical lane assignments

1

TR 42.12 – *Optical Fibers*

Revisions Published - **0**

ICEA Ballot Support - 2

Ongoing in ICEA for comments to be submitted to TIA in October

- FOTP-86 Jacket Shrinkage
- FOTP- 25 Impact Testing of Optical Fiber Cables

Ongoing Document Work- 2

PARs need to be submitted

- FOTP-162 Optical Fiber Cable Temperature Humidity
- ANSI/TIA-598-D-2014 (“Optical Fiber Cable Color Coding”): open for revision

Ongoing Doc Work- 6

PARs complete but Ballot not started

- FOTP-28 Measuring Dynamic Strength and Fatigue Parameters of Optical Fibers by Tension
- FOTP-38 Measurement of Fiber Strain in Cables under Tensile Load
- FOTP 84 Jacket Self-Adhesion (Blocking) Test for Optical Fiber Cable
- FOTP 85 Fiber Optic Cable Twist Test
- FOTP-87 Fiber Optic Cable Knot Test
- FOTP-133 Adoption of the IEC 60793-1-22:2001 Optical fibres - Part 1-22: Measurement methods and test procedures – Length measurement

Ongoing Doc Work - 6

Call for Comments

- FOTP- 33 Impact Testing of Optical Fiber Cables
- FOTP- 41 Compressive Loading Resistance of Optical Fiber Cables
- FOTP- 88 Optical Fiber Cable Jacket Shrinkage
- FOTP- 89 Optical Fiber Cable Jacket Elongation and Tensile Strength
- FOTP- 91 Fiber Optic Cable Twist-Bend Test
- FOTP- 98 Fiber Optic Cable External Freezing Test

TR 42.13 - *Passive Optical Devices & Fiber Optic Metrology*

Published Documents

- Reaffirmation of ANSI/TIA-604-19 (SEN a.k.a. CS Connector)
- ANSI/TIA-455-11-E (Vibration Test)
- ANSI/TIA-604-10-D (LC Connector)
- ANSI/TIA-623.31 (Adoption IEC 61755-3-31 optical interface)

Maintenance Projects

- ANSI/TIA-455-157-A (PDL adoption of IEC 61300-3-2:2009) – Motion to publish
- ANSI/TIA-455-16-A (Salt Spray/Corrosion Test) – Motion Approval Ballot
- ANSI/TIA-455-227-A (Keying accuracy of PM connectors) – Motion to revise and adopt latest IEC, IEC document to be requested

New Projects/Discussion

- ANSI/TIA-604-20 (FOCIS AIM connector) – to circulate soon
- ANSI/TIA-623.1 (Adoption IEC 61755-3-1 optical interface – to circulate soon
- ANSI/TIA-623.2 (Adoption IEC 61755-3-2 optical interface – to circulate soon
- SAC (SN) and MDC connector IEC standards are progressing forward. SAC published, while MDC expected to publish by October TR42 meeting. Contribution was reviewed on SAC FOCIS considerations and actions taken. MDC to be requested once published and further discussion to take place at October TR42 meeting on both documents.