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

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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
• Chris DiMinico is outgoing liaison from IEEE 802.3 to TIA TR-42
Agenda and TIA Meeting Overview

- **Most recent TR-42 Plenary week:**
  January 25 - 29, 2016 in New Orleans, LA

- **Review TR-42 subcommittee activities**
  - 11 subcommittees met

- **Update on project development**

- **This symbol highlights key points of interest**
4 TIA TR-42 Liaison Letters to IEEE 802.3

1. Draft 5.1 of TSB-184-A “Guidelines for Supporting Power Delivery Over Balanced Twisted-Pair Cabling” shared and available in the private area

2. Draft 0.6b of TSB-5021 “Guidelines for the Assessment and Mitigation of Installed Cabling to Support 2.5GBASE-T and 5GBASE-T” shared and available in the private area
3. TIA-1005-A-3 “Industrial cabling for one pair Link Segment Type B, 1000BASE-T1 including MICE 2 and MICE 3” will be circulating for committee ballot (draft has not been shared)

4. TR-42 has made significant progress estimating the temperature rise of cable bundles in conduit based on predictive models validated by comparison to measured results
Cable Heating Liaison

• Category 6 and 6A cable measurements were used to develop a generic equation describing maximum temperature rise and current capacity for cable bundles of different sizes in both open air and conduit.

• The equation assumes all pairs are energized.

• Coefficients for 26AWG, category 5e, category 6, and category 6A are provided.

• Temperature rise vs bundle size for 600mA, 720mA, and 1000mA (per pair) are provided.
TIA TR-42 Activities

- TR-42.1 (Commercial Building Cabling):
  - ANSI/TIA-5017, “Telecommunications Physical Network Security Standard” approved for publication
  - New project: ANSI/TIA-5018 “Structured Cabling Infrastructure Standard to support Distributed Antenna Systems” circulating for default ballot
  - New project: ANSI/TIA-1179-A “Healthcare Facility Telecommunications Infrastructure Standard” circulating for industry ballot
TIA TR-42 Activities

- **TR-42.1 (Commercial Building Cabling), cont.:**
  - New project: ANSI/TIA-942-B
    “Telecommunications Infrastructure Standard for Data Centers” circulating for committee ballot

- **TR-42.3 (Terms and Symbols):**
  - New project: TSB-xxxx “Guidelines for Pathways & Spaces Supporting Remote Powering” under consideration
TIA TR-42 Activities

• **TR-42.5 (Terms and Symbols):**
  – Definitions, acronyms, units of measure, and symbols maintained in a working document

• **TR-42.6 (Infrastructure Administration):**
  – New project: ANSI/TIA-606-B-1, “Automated Infrastructure Management Systems” approved for publication
TIA TR-42 Activities

• TR-42.7 (Copper Cabling):
  – New project: ANSI/TIA-1183-1, “Test Fixtures for Balunless Measurements of Balanced Components and Systems to 2 GHz” circulating for industry ballot
  – New project: TSB-184-A, “Guidelines for Supporting Power Delivery Over Balanced Twisted-Pair Cabling” circulating for committee ballot (draft 5.1 available in the IEEE P802.3bt private area)
TIA TR-42 Activities

- TR-42.7 (Copper Cabling), cont.:
  - New project: ANSI/TIA-568-C.2-1, “Balanced Twisted-Pair Telecommunications Cabling and Components Standard, Addendum 1: Specifications for 100Ω Category 8 Cabling” circulating for industry ballot (draft 3.2 available in the IEEE P802.3bq private area)
    - 2-connector, 30-meter channels
    - 2-connector, 24-meter permanent links
    - Direct attach recognized
    - 1 MHz - 2 GHz frequency bandwidth
TIA TR-42 Activities

• TR-42.7 (Copper Cabling), cont.:
  – Class II channel performance criteria/limits documented
  – The Class II task group is working to capture the category 8.2/class II transmission and electrical performance for cables, connectors, channel, permanent link, and patch cords as they exist in ISO ‘11801-1 now and present it to TR-42.7 for further guidance
TIA TR-42 Activities

• TR-42.7 (Copper Cabling), cont.:
  – New project: ANSI/TIA-1152-A, “Requirements for Field Test Instruments” circulating for committee ballot
  – New project: TSB-5021, “Guidelines for the use of Installed Cabling to Support 2.5GBASE-T and 5GBASE-T” circulating for committee ballot (draft 0.6b available in the IEEE P802.3bz private area)
TIA TR-42 Activities

• TR-42.7 (Copper Cabling), cont.:
  – New project: ANSI/TIA-568.2-D, “Balanced Twisted-Pair Telecommunications Cabling and Components Standard” opened (development to begin after ANSI/TIA-568-C.2-1 is approved for publication)
  – New project: ANSI/TIA-568.4-D, “Broadband Coaxial Cabling and Components Standard” opened (development to begin after ANSI/TIA-568-C.2-1 is approved for publication)
TIA TR-42 Activities

• TR-42.9 (Industrial Infrastructure):

  – New project: ANSI/TIA-1005-A-3, “Industrial cabling for one pair Link Segment Type B, 1000BASE-T1 including MICE 2 and MICE 3” circulating for committee ballot

  – New project: ANSI/TIA-1005-A-x, “Performance requirements for four-pair industrial cables and cabling supporting 1000BASE-T for MICE2 and MICE3 environments” under development
TIA TR-42 Activities

• TR-42.10 (Sustainable Information Communications Technology)
TIA TR-42 Activities

• **TR-42.11 (Optical Fiber Systems):**
  
  – New project: ANSI/TIA-568.3-D: "Optical Fiber Cabling and Components Standard” circulating for default ballot
  
  – New project: TSB-5040: "Understanding Duplex and Single Row Fiber Polarity” under development
TIA TR-42 Activities

• TR-42.12 (Optical Fibers and Cables):
  – New project: ANSI/TIA-598-D-1, “Optical Fiber Color Coding in Cable, Addendum for Additional Colors” circulating for industry ballot
  – New project: TIA-492AAAE, “Detail Specification for 50-µm Core Diameter/125-µm Cladding Diameter Class 1a Graded-Index Multimode Optical Fibers with Laser-Optimized Bandwidth Characteristics Specified for Wavelength Division Multiplexing” circulating for committee ballot
  – 10+ documents circulating for reaffirmation or committee ballot
TIA TR-42 Activities

- **TR-42.13 (Passive Optical Devices and Metrology)**

- **TR-42.16 (Grounding and Bonding):**
  - New project: Multi-Tenant Occupancies under discussion
Upcoming TIA Meetings

TR-42.7 Interim Meeting
April 5 - 6, 2016
Sacramento, CA

TR-42 Plenary Meetings
June 13 - 17, 2016
Tigard, OR

www.tiaonline.org
Thank you

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