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

Valerie Maguire
The Siemon Company
Berlin, Germany
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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:
  February 2 - 6, 2014 in Tucson, AZ

• Review TR-42 subcommittee activities
  – 11 subcommittees met

• Update on project development

• ➡️ This symbol highlights key points of interest
1. New TSB entitled “Guidelines for the use of installed cabling to support 2.5GBASE-T and 5GBASE-T” under development

2. Work underway to develop specifications for DC resistance unbalance between pairs

3. ANSI/TIA-1005-A-x defining requirements for industrial cabling and components supporting 1000BASE-T1 over one pair Link Segment Type B, including in MICE2 and MICE3 environments, under development
1 - New 2.5GBASE-T and 5GBASE-T TSB

- This TSB will address the evaluation of installed cabling, including testing requirements, and may also recommend possible mitigation procedures that can be used to qualify installed cabling.
- Ballot document will circulate by February 2016 and a TSB will publish by February 2017.
- Ongoing status reports and data will be shared as they become available.
2 - DC Resistance Unbalance Between Pairs

- Proposed category 8 channel (2-connector) specification is: DCRU between pairs shall not exceed the greater of 7% (TBD) or 50 mΩ (see clause 6.2.3 of draft ‘568-C.2-1)

- Proposed category 5e, 6, 6A, and 8 channel (4-connector) specification is: DCRU between pairs shall not exceed the greater of 7% (TBD) or 100 mΩ (see clause 7.3 of draft TSB-184-A)

- Specifications are under development and feedback is appreciated
3 - New Addendum to ANSI/TIA-1005-A

• This addendum to ANSI/TIA-1005-A (Industrial Premises Cabling) will define the transmission and environmental requirements for industrial cabling and components supporting 1000BASE-T1 over one pair Link Segment Type B, including in MICE2 and MICE3 environments.

• Specifications are under development and feedback is appreciated.
TIA TR-42 Activities

- **TR-42.1 (Commercial Building Cabling):**
  - ANSI/TIA-568.0-D, “Generic Telecommunications Cabling for Customer Premises” approved for publication pending publication approval of ANSI/TIA-568.3-D (Optical Fiber Cabling and Components)
  - New project: ANSI/TIA-568.1-D, “Commercial Building Telecommunications Cabling Standard” circulating for default ballot
TIA TR-42 Activities

- **TR-42.1 (Commercial Building Cabling), cont.:**
  - New project: ANSI/TIA-5018 “Structured Cabling Infrastructure Standard to support Distributed Antenna Systems” under development

- **TR-42.3 (Pathways and Spaces):**
  - ANSI/TIA-569-D “Commercial Building Standard for Telecommunications Pathways and Spaces” approved for publication
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):**
TIA TR-42 Activities

• TR-42.7 (Copper Cabling):
  – TSB-5019, “High Performance Structured Cabling (HPSC) Applications” approved for publication
  – New project: ANSI/TIA-1183-1, “Test Fixtures for Balunless Measurements of Balanced Components and Systems to 2 GHz” circulating for industry ballot
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 committee ballot (draft 3.1 available in the IEEE P802.3bq private area)
    - 2-connector, 30-meter channels
    - 2-connector, 24-meter permanent links
    - Direct attach
    - 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” under development
  - New project: TSB-xxxx, “Guidelines for the use of Installed Cabling to Support 2.5GBASE-T and 5GBASE-T” under development
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-x, “Industrial cabling for one pair Link Segment Type B, 1000BASE-T1 including MICE 2 and MICE 3” under development
  - 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)
  – ANSI/TIA-4994, “Standard for Sustainable Information Communications Technology” approved for publication
TIA TR-42 Activities

• TR-42.11 (Optical Fiber Systems):
  – New project: ANSI/TIA-526-14-C: "Optical Power Loss Measurement of Installed Multimode Fiber Cable Plant” approved for publication
  – New project: ANSI/TIA-568.3-D: "Optical Fiber Cabling and Components Standard” circulating for industry ballot
  – New project: TSB-xxxx: "Polarity of Cords and Connectivity Methods Employing Connector Plugs Containing Two Rows of Fibers” under development
TIA TR-42 Activities

• TR-42.11 (Optical Fiber Systems), cont.:

• 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
TIA TR-42 Activities

- TR-42.12 (Optical Fibers and Cables), cont.:
  - 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” under development
  - 10+ documents circulating for reaffirmation or committee ballot
TIA TR-42 Activities

• TR-42.13 (Passive Optical Devices and Metrology):
  – New project: ANSI/TIA-604-18, “FOCIS-18 Fiber Optic Intermateability Standard Type 1x16 and 2x16 Multifiber Push-on/ Multifiber Termination Push-on” circulating for industry ballot
  – New project: TSB-4947: "Guidance for Adhesive Usage in Fiber Optic Components” circulating for committee ballot
  – New project: TIA-455-231: "FOTP-231 Calibration of Fibre-Optic Power Meters (IEC 61315 Ed.2)” under development
TIA TR-42 Activities

• TR-42.13 (Passive Optical Devices and Metrology), cont.:
  – New project: TIA-604-5-E: "FOCIS 5 - Fiber Optic Connector Intermateability Standard, Type MPO (Multi-fiber Push On)” under development

• TR-42.16 (Grounding and Bonding):
  – New project, ANSI/TIA-607-C, “Structural Metal” circulating for industry ballot
Upcoming TIA Meetings

TR-42.7 Interim Meeting
April 7 - 8, 2015
Torrance, CA

TR-42 Plenary Meetings
June 8 - 12, 2015
Quebec City, Quebec, CAN

www.tiaonline.org
Thank you

Contact Information:

Valerie Maguire
The Siemon Company
101 Siemon Company Drive
Watertown, CT 06795

phone: (602) 228-7943
valerie_maguire@siemon.com