

# 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

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- **Telecommunications Industry Association**
- **[www.tiaonline.org](http://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

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- **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**

## 3 TIA TR-42 Liaison Letters to IEEE 802.3

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- 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

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- **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

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- **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



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- **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

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- **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**
- **New project: ANSI/TIA-862-B, “Building Automation Systems Cabling Standard” circulating for industry ballot**



# TIA TR-42 Activities

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- **TR-42.1 (Commercial Building Cabling), cont.:**
  - New project: ANSI/TIA-5017, “Telecommunications Physical Network Security Standard” circulating for industry ballot
  - 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



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- **TR-42.5 (Terms and Symbols):**
  - Definitions, acronyms, units of measure, and symbols maintained in a working document
  - New project: ANSI/TIA-440-C, “Fiber Optic Terminology” circulating for committee ballot
- **TR-42.6 (Infrastructure Administration):**
  - New project: ANSI/TIA-606-B-1, “Automated Infrastructure Management Systems” circulating for industry ballot

# TIA TR-42 Activities

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- **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**
-  – **New project: TSB-184-A, “Guidelines for Supporting Power Delivery Over Balanced Twisted-Pair Cabling” circulating for committee ballot**

# TIA TR-42 Activities

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- **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

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- **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

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- **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



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- **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

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- **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

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- **TR-42.10 (Sustainable Information Communications Technology)**
  - **ANSI/TIA-4994, “Standard for Sustainable Information Communications Technology” approved for publication**
  - **New project: ANSI/TIA-5011, “Standard Process for Sustainable Information Communications Technology Manufacturers” circulating for industry ballot**

# TIA TR-42 Activities

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- **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


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- **TR-42.11 (Optical Fiber Systems), cont.:**
  - TIA-526-15, TIA-526-16, TIA-526-17, TIA-526-18, TIA-455-126, TIA-455-212, TIA-455-213, TIA-526-3, and TIA-526-4A withdrawn as part of 5-year review process
- **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

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- **TR-42.12 (Optical Fibers and Cables), cont.:**

-  – **New project: TIA-492AAAE, “Detail Specification for 50- $\mu\text{m}$  Core Diameter/125- $\mu\text{m}$  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

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- **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

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- **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

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## **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](http://www.tiaonline.org)**

**Thank you**

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**Contact Information:**

**Valerie Maguire**

**The Siemon Company**

**101 Siemon Company Drive**

**Watertown, CT 06795**

**phone: (602) 228-7943**

**valerie\_maguire@siemon.com**