

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

Valerie Maguire  
The Siemon Company  
Vancouver, CAN  
March 12, 2019

# Introduction to TIA

---

- **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

---

- **Most recent TR-42 Plenary week:  
Jan 28 – Feb 1, 2019 in Orlando, FL**
- **Review TR-42 subcommittee activities**
  - 8 subcommittees met
- **Update on project development**
-  **This symbol highlights key points of interest**

# TIA TR-42 Liaison Letter to IEEE 802.3

---

- **TIA TR-42 responded to a request from IEEE 802.3 to provide guidance on MDI connector standardization (liaison previewed in Bangkok)**
  - **TIA TR42 concluded the single pair connector selection process and identified interfaces as follows:**
    1. **IEC 63171-1 CD for  $M_1I_1C_1E_1$  environments (e.g. commercial enterprise buildings)**
    2. **IEC 61076-3-125 CDV for  $M_2I_2C_2E_2/M_3I_3C_3E_3$  and other non  $M_1I_1C_1E_1$  environments (e.g. industrial)**



## TIA TR-42 Liaison Letter to IEEE 802.3, cont.

---

- **TIA suggests that IEEE 802.3 consider these two standardized connectors as MDI interface connectors**
- **This will improve the market adoption and growth of single pair cabling by having standardized connectors for cabling and equipment interfaces**

# TIA TR-42 Activities



---

- **TR-42.1 (Premises Infrastructure):**
  - **New project: ANSI/TIA-758-C, “Customer-Owned Outside Plant Telecommunications Infrastructure Standard” circulating for industry ballot**
  -  – **New project: ANSI/TIA-568.0-E, “Generic Telecommunications Cabling for Customer Premises” circulating for industry ballot**
  -  – **New project: ANSI/TIA-568.1-E, “Commercial Building Telecommunications Infrastructure Standard” circulating for industry ballot**

# TIA TR-42 Activities

---

- **TR-42.1 (Premises Infrastructure), cont.:**

-  – **New project: ANSI/TIA-568.0-D-2, “Generic Telecommunications Cabling for Customer Premises, Addendum 2: Single Balanced Twisted-pair Use Cases and Topology” under development**
-  – **New project: ANSI/TIA-862-B-2, “Structured Cabling Infrastructure Standard for Intelligent Building Systems, Addendum 2: Single Balanced Twisted-pair Use Cases and Topology” under development**

# TIA TR-42 Activities

---

- **TR-42.1 (Premises Infrastructure), cont.:**
  - **New project: ANSI/TIA-4966-A, Telecommunications Infrastructure Standard for Educational Facilities” under development**
  - **Activity on Edge Data Center specification ramping up**
- **TR-42.3 (Pathways, Spaces, and Grounding):**
  - **New project: ANSI/TIA-569-E, “Commercial Building Standard for Telecommunications Pathways and Spaces” circulating for default ballot**





# TIA TR-42 Activities

---

- **TR-42.3 (Pathways, Spaces, and Grounding), cont.:**
  - **New project: ANSI/TIA-607-D, Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises circulating for industry ballot**
- **TR-42.5 (Terms and Symbols):**
  - **Definitions, acronyms, units of measure, and symbols maintained in a working document**

# TIA TR-42 Activities



---

- **TR-42.7 (Copper Cabling):**
  - **ANSI/TIA-568.2-D-1, “Balun Specifications for Testing Category 8 Cabling and Components” approved for publication**
  -  – **New project: TSB-184-A-1, “Guidelines for Supporting Power Delivery Over Balanced Twisted-Pair Cabling: Addendum 1, Guidance to Support 28 AWG Cords” approved for publication**
  -  – **New project: ANSI/TIA-568.5, “Single Twisted-pair Cabling and Components Standard” circulating for mock ballot**

# TIA TR-42 Activities

---

- **TR-42.7 (Copper Cabling), cont.:**

-  – **Task Group studying category 8 short channel alien crosstalk**
-  – **Task Group examining the normativization of the recommendations in TSB 184-A (“Guidelines for Supporting Power Delivery Over Balanced Twisted-Pair Cabling”)**
- **New Task Group formed to investigate balunless test procedures single-pair common mode impedance**

# TIA TR-42 Activities



---

- **TR-42.9 (Industrial Infrastructure):**
  - **New project: ANSI/TIA-1005-A-2, “Telecommunications Infrastructure Standard for Industrial Premises, Addendum 2: 1G Industrial Cabling for Four Pair (100 meters) (1000BASE-T) for E2 and E3 Environments” circulating for industry ballot**

# TIA TR-42 Activities

---


- **TR-42.9 (Industrial Infrastructure), cont.:**

-  – **New project: ANSI/TIA-1005-A-3, “Telecommunications Infrastructure Standard for Industrial Premises, Addendum 3: 1G Industrial Cabling for One Pair Type B (40 meters) (1000BASE-T1) for E2 and E3 Environments” circulating for committee ballot**
-  – **New project: ANSI/TIA-PN-1005-A-4, “Telecommunications Infrastructure Standard for Industrial Premises, Addendum 4: Single Balanced Twisted-pair Use Cases and Topology for Industrial Premises” under development**

# TIA TR-42 Activities

---

- **TR-42.11 (Optical Fiber Systems):**

-  – **ANSI/TIA-568.3-D-1, “Optical Fiber Cabling Component Standard - Addendum 1, General Updates” published**
- **New project: TSB-5069 , “Optical Fiber Channel Polarity - Duplex - Single Row Fiber - Double Row Fiber Polarity” circulating for committee ballot**

# TIA TR-42 Activities

---

- **TR-42.12 (Optical Fibers and Cables):**
  - **ANSI/TIA-455-95-B, “FOTP-95 Absolute Optical Power Test for Optical Fibers and Cables” published**
  - **New project: ANSI/TIA-455-82-B, “FOTP-82 Fluid Penetration Test for Fluid-Blocked Fiber Optic Cable” circulating for committee ballot**
  - **New project: ANSI/TIA-455-244-A, “FOTP-244-A Methods for Measuring the Change in Transmittance of Optical Fibers in Expressed Buffer Tubes When Subjected to Temperature Cycling” under development**

# TIA TR-42 Activities


---

- **TR-42.12 (Optical Fibers and Cables), cont.:**
  - **New project: TIA-4920000-C, adopt IEC 60793-2, "Generic Specification for Optical Fibers" under development**
  - **New project: TIA-492AAAF, adopt IEC 60793-2-10, "Sectional Specification for Category A1 Graded-Index Multimode Optical Fibers" under development**
  - **New project: TIA-492CAAC, adopt IEC 60793-2-50, "Sectional Specification for Class B Single-mode Optical Fibers" under development**



# TIA TR-42 Activities

---

- **TR-42.12 (Optical Fibers and Cables), cont.:**
  - **New project: ANSI/TIA-598-E, “Optical Fiber Color Coding” under development**
  -  – **“VCSEL Weighting Functions” Task Group assessed the TIA-specified VCSEL DMD weighting functions throughout the wavelength range of interest**
  - **Findings showed that the current VCSEL weights, although possibly conservative, are still representative. The work validated the assumptions for VCSELs up to 25G. The current EMB weighting functions are still valid and the Task Group has been disbanded**

# TIA TR-42 Activities

---

- **TR-42.13 (Passive Optical Devices and Metrology)**
  - **New project: ANSI/TIA-604-19, "FOCIS 19 - Fiber Optic Connector Intermateability Standard, Type Sen-01 Connector" circulating for committee ballot**

# TIA TR-42 Activities

---

- **TR-42.13 (Passive Optical Devices and Metrology)**
  - **ANSI/TIA-455-171-B, "FOTP-171 IEC 61300-3-4 Attenuation by Substitution Measurement for Short Length Multimode Graded Index and Single-Mode Optical Fiber Cable Assemblies"** approved for publication
  - **New project: ANSI/TIA-604-5-F, "FOCIS 5 - Fiber Optic Connector Intermateability Standard, Type MPO (Multi-fiber Push On)"** approved for publication

# Upcoming TIA Meetings

---

## **TR-42 Plenary Meetings**

**June 10 – June 14, 2019**

**Vancouver, CAN**

**[www.tiaonline.org](http://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**