LAN Standards, News & Trends

Herbert V. Congdon II, PE
Tyco Electronics
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Objectives

- Review the recent events and activities of the TIA TR-42 Subcommittees
- Review the recent events and activities of the LAN application Subcommittees
- Review the recent events and activities of related LAN cabling Subcommittees

TR-42: New Scope and Name

- TIA TR-42 - Telecommunications Cabling Systems
- Scope
  - "The TR-42 Engineering Committee develops and maintains telecommunications Standards for balanced twisted-pair copper, optical fiber, and other telecommunications cabling systems and components, infrastructure topologies, field and laboratory qualification, installation requirements, pathways and spaces, administration, and related network technology specifications."

TR-42 Subcommittees

- "Original 9" Subcommittees
  - 42.1 Generic and Comm'l Building
  - 42.2 Residential
  - 42.3 Pathways & Spaces
  - 42.4 Outside Plant (Inactive)
  - 42.5 Terms, Definitions and Abbreviations
  - 42.6 Administration
  - 42.7 Copper Components
  - 42.8 Optical Fiber Components
  - 42.9 Industrial
- Merged from FO-4
  - TR-42.11 Optical Systems
  - TR-41.12 Optical Fibers and Cables
  - TR-42.13 Passive Optical Devices and Components
  - TR-42.15 Fiber Optic Metrology
- **New** Subcommittee
  - TR-42.16 Bonding and Grounding

Most recent meetings held October 6-10, 2008 (Vancouver, BC)

Subcommittee Review

October 16, 2008

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TR-42.1 Generic and Commercial Building

- 568-C.0 Generic Cabling
  - 568-C.0 Establishes How a Star Network Topology Is Constructed
    - Single document for common information
    - Premise standards define appropriate allowances and exceptions
  - 568-C.0 Establishes Cabling Requirements
    - Applicable to all premise Standards unless noted as an exception or allowance
  - 568-C.0 Uses Generic Cabling Nomenclature
    - Cabling Subsystem 1, Cabling Subsystem 2 and Cabling Subsystem 3
    - Distributor A, Distributor B, Distributor C and Equipment Outlet
    - Specific nomenclature assigned in premises Standards

TR-42.1

- 568-C.0 – Generic Cabling – Status
  - Document approved for publication
  - May take up to 2 months before available

TR-42.1

- 568-C.1 – Commercial Building
  - Builds on information in 568-C.0
  - Contains appropriate allowances and exceptions specific to office-oriented commercial building cabling (scope of 568-C.1)
  - Retains use of 568-B.1 nomenclature
    - Main Cross-connect (Distributor C in 568-C.0)
    - Interbuilding backbone cabling (Cabling Subsystem 3 in 568-C.0)
    - Intermediate Cross-connect (Distributor B in 568-C.0)
    - Intrabuilding backbone cabling (Cabling Subsystem 2 in 568-C.0)
    - Horizontal Cross-connect (Distributor A in 568-C.0)
    - Horizontal cabling (Cabling Subsystem 1 in 568-C.0)
    - The Telecommunications Outlet (Equipment Outlet in 568-C.0)

TR-42.1

- 568-C.1 – Commercial Building Cabling – Status
  - Document approved for publication
  - May take up to 2 months before available

TR-42.1

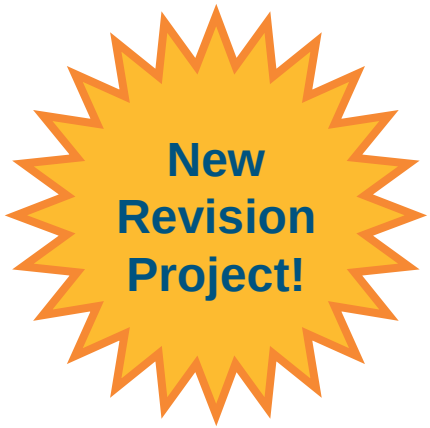
- Healthcare Facility Cabling Task Group has been Reactivated
  - Herb Congdon (hvcongdon@tycoelectronics.com) appointed chair
- Task Group will create a draft standard for healthcare facilities based on using the 568-C.0 document as a foundation
  - Soliciting contributions on what makes healthcare facility cabling different from traditional commercial building cabling

- TR-49 is a new TIA Engineering Committee for Healthcare Communications Technology

TR-42.1

- MICE Tutorial TSB
  - Explains why the M, I, C and E values in the MICE table were selected
  - First ballot closed, comments resolved
  - Issuing second ballot

- Building Automation Systems (BAS)
  - Update the TIA-862 document and harmonize with the 568-C series
    - Circulating draft as a mock ballot



TR-42.1: TIA-942 (Data Center)

- Errata for corrections in Annex G (Tiers)
  - Fix a few typographical errors

- 2nd Addendum going for committee ballot
  - New media types
    - Cat 6A, OM4 (?)
  - Environments
    - RF Noise (example – use of radios in a data center)
    - Temperature and Humidity (relaxing requirements “green” issue)
  - Reliability tiers revision
    - Bring up to date with latest guidance

TR-42.2 Residential

- Addendum 1 to TIA-570-B, Coaxial Cabling in Residences
  - Specific to 75-ohm Series 6 (RG6) and Series 11 (RG11) coaxial cabling (including dual-, tri- or quad-shield)
    - Series 59 is outside the scope of this addendum
  - Addendum is approved for publication
    - Currently caught up in some administration issues

- CEA
  - A liaison will be established with the Consumer Electronics Association

TR-42.2: Multi-tenant/Multi-dwelling Units

- TR-42.2, TR-42.12 and TR-42.13 looking at this emerging vertical
  - Optical cabling standards in wiring multiple-dwelling units to extend the reach of single-mode fiber (“FTTx”) services
  - Define the optical infrastructure for both MDU residential (apartments, townhouses, condominiums) and MTU commercial properties including mixed-use buildings
  - TR-42.2, TR-42.12 & TR-42.13 will evaluate and present a list of impacts on TR-42 standards in a joint meeting in February 2009
    - TIA-568-C.0, TIA-658-C.3
    - TIA-570-B, TIA-758 and maybe others

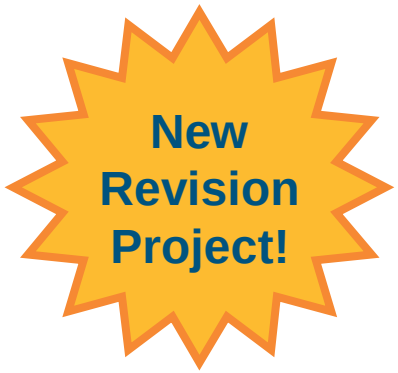
TR-42.3 Pathways and Spaces

- 1st Addendum to 569-B
  - Proposed changes to the temperature and humidity/dew point ranges for spaces
    - "Green" benefits
  - First committee ballot closed, comments resolved
  - Issued for second committee ballot

- Addendum for Industrial Pathways and Spaces
  - Expected to become the first addendum to TIA-1005
  - Document was tabled in February pending further progress on TIA-1005
  - Released for industry ballot

TR-42.4 Outside Plant Cabling

- Subcommittee has been inactive for a few years
- 758-A Standard is approaching it's five-year limit
- Subcommittee reactivated in October
  - Held elections for Chair and Vice-chair
  - Opened Revision Project
    - Recognize the existence of 568-C.0



TR-42.6 Administration

- TIA-606-A Addendum 1, Equipment Rooms and Data Center Computer Rooms
  - All default ballot comments resolved
  - Released for publication

TR-42.7 Copper Components

- 568-C.2, Copper Cabling Components
  - Ballot will close on October 27, 2008
  - Comment resolution at interim meeting in December 2008
  - TR-42.7 requested approval to publish if no technical changes are made as a result of comment resolution
    - not likely, but possible
    - plans to publish by mid-2009 still viable

- TIA-1152, Requirements for Field Test Instruments and Measurements for Balanced Twisted-Pair Cabling
  - Send out for a first 30-day committee ballot

TR-42.7

- TSB-184 on Current Capacity of Balanced Twisted-pair Cabling
  - Ballot closed September 15, 2008; comments resolved
    - 10 Approve, 9 Do Not Approve
    - 69 Technical comments, 60 Editorial comments
- Issuing as a second committee ballot
- Implementations that enables remote powering of PD's
  - Bundling, Cabling in conduits, Different categories and cable types
- Specifies DC resistance; Safety and EMC are NOT addressed

TR-42.8 Optical Fiber Cabling

- Review of 568-C.3 status
  - Errata approved (20 items)
    - Formatting and corrupted references to tables and clauses
  - New document to be issued

TR-42.9 Industrial

- Default ballot for TIA-1005 closed October 6
  - All Comments were resolved or withdrawn
  - Resolved Comments, resulted in editorial changes to the standard
- Publication of TIA-1005, Telecommunications Infrastructure Standard for Industrial Premises, was approved

TR-42.11 Optical Systems

- OFSTP-7, Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant, needs to have the ballot authorization form resubmitted
- Reaffirmed
  - OFSTP-10, Measurement of Dispersion Power Penalty in Digital Single-Mode Systems
  - OFSTP-11, Measurement of Single-reflection Power Penalty for Fiber Optic Terminal Equipment

TR-42.11

- OFSTP-14A, Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant, will be revised with the intent to adopt IEC 61280-4-1 ed.2 when at FDIS, expected Spring 2009
- Withdrawn
  – TIA-626, Multimode Fiber-Optic Link Transmission Design
- New experiment to gather more data using multiple PMD methods and multiple installed links

- The plenary unanimously agreed to publish TIA 455-203A (FOTP-203A), Light Source Encircled Flux Method

TR-42.12 Optical Fibers and Cables

- New projects
  - Skew measurement
  - Revise FOTP-204 on multimode bandwidth
- Documents for ballot
  - FOTP-244, temperature cycling of tubes expressed in pedestals
  - TIA-492AAAD, OM4 fiber specification

- Documents for publication
  - FOTP-3, temperature cycling fiber cables and connectors
  - ITM-9 (as TSB-182) on ribbon strip

TR-42.13 Interconnecting Devices and Passive Components

- Working Groups on Several Subjects
  - Adhesion Strength Test Methods
  - APC Endface Geometry
  - Method for Measuring GPB Diameter in MT Ferrules - new
  - Method for Measuring Relative Angle in GPB Axis in MT Ferrules - new
- Ballots Issued
  - Adhesive Application Guidelines
  - Connector Seal Under Load (FOTP-241)
- Publications
  - MT Fiber Protrusion (FOTP-219A)

TR-42.13

- Maintenance
  - Status on ANSI Reaffirmation Ballots for 2007
    - 9 of 22 reaffirmed
    - 12 of 22 out for re-ballot
    - 1 needs to be modified and sent for ballot
  - Status on ANSI Documents for 2008
    - 2 of 7 for reaffirmation
    - 1 of 7 to rescind
    - 4 of 7 moving from TIA status to ANSI document

TR-42.15 - Metrology

- The Plenary unanimously agreed to approve publication of three documents
  - IEC-61315 (FOTP 231)
  - IEC-61744 (FOTP 224)
  - IEC-61746 (FOTP 226)

- A follow-up investigation on round robin testing of return loss measurements was completed
- Discussion began on a document that would define measurement methods for reference cables/jumpers

TR-42.16 - Bonding & Grounding

- This working group was elevated to full subcommittee status
  - Work from TR-42.3.1 transfers to TR-42.16
  - Chair and Vice-chair elected
  - Will begin as TR-42.16 in February
    - New scope needs to be created and approved
- J-STD-607-A is at it's five-year life limit
  - A revision is necessary to cover more than the current document
- Working on first draft of what will become J-STD-607-B

TIA Going Green

- Task Group formed in TR-42.3
  - Summary of findings presented to all TR-42 subcommittees
- “Stewardship” paragraph drafted and out for review
  - Maybe for inclusion in 568-C.0
- Liaison letter to IEEE looking for opportunities to join forces
- Working with BICSI and USGBC for LEED credit support of structured cabling

Application Standards Activity

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IEEE 802.3at – Power over Ethernet Plus

- Objectives changed in March
  - "shall support a minimum of 24W of power at the PD PI"
    - Formerly 30W
  - 802.3at argued that 30W is not practically feasible, so they will go with "the highest we can".
    - The current draft is 25.5W
    - Category 5 (or better) systems with a DC loop resistance no greater than 25ohms
- Timeline shows publication in June 2008, but that has slipped

IEEE 802.3ba – 40G/100G

- Provide Physical Layer specifications which support 40 Gb/s over:
  - at least 10km on SMF
  - at least 100m on OM3 MMF
  - at least 10m over a copper cable assembly
  - at least 1m over a backplane
- Provide Physical Layer specifications which support 100 Gb/s over:
  - at least 40km on SMF
  - at least 10km on SMF (note: will be CWDM)
  - at least 100m on OM3 MMF
  - at least 10m over a copper cable assembly

IEEE 802.3ba

- Multimode solutions will be parallel
  - 4 TX and 4 RX for 40G
  - 10 TX and 10 RX for 100G
- Longer distances on “OM4” fiber under consideration
  - Minimal support in the full task group
- Timeline shows publication in June 2010

IEEE 802.3az – Energy Efficient Ethernet

- Task Group IEEE 802.3az
  - Define a mechanism to reduce power consumption during periods of low link utilization for the following PHYs
    - 100BASE-TX (Full Duplex)
    - 1000BASE-T (Full Duplex)
    - 10GBASE-T
    - 10GBASE-KR
    - 10GBASE-KX4
  - Define a protocol to coordinate transitions to or from a lower level of power consumption
  - Timeline shows publication in early 2010

Purchasing Standards

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Purchasing Standards

- TIA releases published documents to Global Engineering Documents
- Global Engineering Documents acts as a clearing house for order processing for multiple Standards Developing Organizations (SDOs)
- News:
  - Now Global Engineering Documents is “IHS”
  - www.ihs.com

- Tyco Electronics does not receive income from sales of TIA Standards

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AMP NETCONNECT

800-553-0938

www.ampnetconnect.com

networking.help@tycoelectronics.com

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