TELECOMMUNICATIONS INDUSTRY ASSOCIATION
1320 N. Courthouse Rd., Suite 200
Arlington, VA 22201 USA
www.tiaonline.org
Tel: +1.703.907.7700
Fax: +1.703.907.7727

TR-42 CORRESPONDENCE

Greg Sandels, TIA TR42 Engineering Committee Chair,
gsandels@ofsoptics.com

Date: January 31, 2018

To: David Law, IEEE 802.3 Working Group Chair, dlaw@hp.com

Cc: Konstantinos Karachalios, IEEE-SA Standards Board Secretary & IEEE-SA Board of Governors Secretary, sasecretary@ieee.org
Paul Nikolich, IEEE 802 LMSC Chair, p.nikolich@ieee.org
Adam Healey, IEEE 802.3 Working Group Vice Chair, adam.healey@broadcom.com
Steve Carlson, IEEE 802.3 Working Group Executive Secretary, scarlson@ieee.org
Pete Anslow, IEEE 802.3 Working Group Secretary, panslow@ciena.com
George Zimmerman, IEEE P802.3cg Task Group Chair, george@cmephyconsulting.com
Henry Franc, TIA TR-42 Engineering Committee Vice Chair, Henry.Franc@belden.com
Jonathan Jew, TIA TR-42 Engineering Committee Secretary, jew@j-and-m.com
Sterling Vaden, TIA TR-42.7 Subcommittee Chair, savaden@charter.net
Valerie Maguire, TIA Outgoing Liaison to IEEE 802.3 Working Group, valerie_maguire@siemon.com
Chris DiMinico, IEEE 802.3 Working Group Incoming Liaison to TIA, cdiminico@ieee.org
Marta Soncodi, TIA Manager, Technology and Standards, MSoncodi@tiaonline.org
Teesha Jenkins, TIA Manager, Standards Secretariat Services, tjenkins@tiaonline.org

Re: TR-42 liaison to IEEE 802.3 regarding ANSI/TIA-568.5 draft 0.3, single balanced pair connector selection, and powering over single balanced pair cables

Dear Mr. Law:

Thank you for your liaison letters dated November 17, 2017 and January 25, 2018 providing TR-42 with feedback on draft 0.3 of the developing ANSI/TIA-568.5 single balanced pair cabling Standard and selection of MDI connectors for single-pair Ethernet applications. We discussed these letters during our meeting the week of January 28, 2018 and have developed the following responses to the issues brought up by IEEE 802.3.

IEEE 802.3: Section 4.1 describes adaptation to four pair cabling. Please note that the published single-pair standards IEEE Std 802.3bw-2015, IEEE Std 802.3bp-2016, and IEEE Std 802.3bu-2016 and the adopted baseline for IEEE P802.3cg (10 Mb/s Single Twisted-Pair Ethernet) specify link segment parameters that may differ from TIA's four-pair cabling standards. Would you please clarify the statement that "Applications running single pair cabling shall be supported by four pair cabling"?

TIA TR4-2 Response: This sentence was deleted by the committee and is no longer present in the current draft. The task force is aware of potential issues regarding "shared sheath" single pair applications in a four pair cabling system and is currently focusing draft development on single pair cabling with four pair compatibility to be addressed separately from the main body of the document.

IEEE 802.3: Section 5.4.1 limits cord cable to a maximum size of "24 AWG (TBD)". Powering over a single pair under IEEE Std 802.3bu-2016 may support currents up to 1.36 Amperes per conductor, which may require heavier gauge cordage.

TIA TR-42: Thank you for this clarification. The committee has decided to use 1.36 A instead of 1.0 A for the minimum current per conductor for single pair balanced cables and connectors.

IEEE 802.3: Channel configurations: In addition to the 100 m and 15 m channel configurations in the TIA draft, the IEEE P802.3cg Task Force is developing link segment specifications up to 1000 m with 18 AWG cable including up to 10 inline connectors. Process control industry applications and building automation systems have requested these long reaches. (see, e.g., http://www.ieee802.org/3/10SPE/public/ adhoc/hoglund_10SPE_161005_01_bldg.pdf as an example).

TIA TR-42: Thank you for this clarification. A 1000 m link segment to support IEEE P802.3cg objectives has been incorporated into the developing ANSI/TIA-568.5 draft.

IEEE 802.3: Cable heating due to power provision and bundling restrictions: It would be beneficial to provide guidelines for bundling configurations vs. temperature rise for IEEE Std 802.3bu-2016 powering, similar to what was done for four-pair Power over Ethernet in TIA TSB-184-A.

TIA TR-42: There is general agreement that guidelines related to bundling of single balanced pair cables need to be developed. This is a large new area of work and will likely require a task group to develop an amendment to TIA TSB-184-A, "Guidelines for Supporting Power Delivery Over Balanced Twisted-Pair Cabling". We will keep you posted as we make further progress.

One additional area of progress that we would like to inform you of is the establishment of a task group to develop an informative annex to TIA TSB-184-A to address PoE installation practices for the purpose of improving the efficiency of PoE installations.

Regarding single balanced pair connector selection for use as an MDI, we are pleased to inform you that we have established a connector selection process, invited proposals, and discussed five (5) single balanced pair connector proposals. We have attached these five initial proposals for your information. The timeline for the evaluation and selection process is expected to conclude by October, 2018. We welcome your feedback regarding this connector selection process as we continue to move forward.

We look forward to our continued collaboration in support of LAN applications developed by IEEE 802.3.

Sincerely,

Greg Sandels
Chair, TIA TR-42 Engineering Committee