

# Potential Regulatory Impacts with IEEE 802.3bt broad market potential

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# Supporters

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Bryan Sparrowhawk	Leviton
Bernd Hormmeyer	Phoenix Contact
Bob Lounsbury	Rockwell
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# Outline

- 4PPOE objectives
- Cabling Standards support
- Size of copper category cabling installed base
- Size of PoE installed base
- PoE is simply another application and is self-regulating
- Going forward

# IEEE P802.3bt DTE Power via MDI over 4-Pair objectives

- The project will amend IEEE Std 802.3-2012 by amending Clause 33
- IEEE Std 802.3 will comply to the limited power source and SELV requirements as defined in ISO/IEC 60950
- Specify Mutual Identification to address four pair operation
- The standard shall not preclude the ability to meet FCC/CISPR/EN Class A, Class B, Performance Criteria A and Performance Criteria B with data for all supported PHYs
- Support for operation over the following channels that have DC loop resistance of no greater than 25 ohms:
  - – Class D or better 4-pair copper medium from ISO / IEC 11801:2002, including Amendments 1 & 2
  - – Class D or better media from ISO / IEC 11801:1995
  - – Category 5e or better cable and components as specified in ANSI/TIA-568-C.2
  - – Category 5 cable and components as specified in ANSI/TIA/EIA-568-A
  - .....
  - .....

Adopted by the IEEE 802.3 4PPoE Study Group May 2013

Source: [http://www.ieee802.org/3/bt/P802d3bt\\_objectives.pdf](http://www.ieee802.org/3/bt/P802d3bt_objectives.pdf)

# Cabling Standards Support for PoE

- ISO/IEC 11801-1 Edition 3 Generic Cabling for Customer Premises
- TIA-568-C.2 Balanced Twisted-Pair Telecommunications Cabling and Components Standards
- TIA TSB 184-A Guidelines for Supporting Power Delivery Over Balanced Twisted-Pair Cabling
- ISO/IEC TR 29125 TELECOMMUNICATIONS CABLING REQUIREMENTS FOR REMOTE POWERING OF TERMINAL EQUIPMENT
- CENELEC EN-50174-99-01 Information technology – Cabling installation – Remote powering

# PoE Market opportunity

- Total shipments of copper category cables from 2003 through 2014 is 75956 million meters
- Assuming average link segment is 50 m, the number of installed link segments available for PoE adoption is 1519 million
- Projection for shipments 2015 – 2017 is 6827 million meters
- Projecting of link segment opportunity for PoE adoption 2015 – 2017 is 136 million

Source of cable shipments : BSRIA Worldwide Structured Cabling Market March 2015

# Messaging to Market

- Need to reassure owners of installed base that PoE including 4PPoE will work over installed base
- Adding new tests beyond the guidelines in TIA and ISO will create unnecessary FUD and potentially lower the rate of market adoption
- IEEE, ISO, TIA, CENELEC, BICSI... should continue to reassure the existing and future installations about the SELV and LPS nature of PoE
- Need to support the over 100 million nodes of PoE that are operating out there with no problems

# PoE is “industry-regulating”

- By strictly adhering to IEC 60950 SELV and LPS requirements in specifications, design, installation and operations, PoE has no technical reason to need further regulation
- Installations can be performed by trained qualified technicians but do not have to be licensed electricians
- No local or national codes to deal with resulting in improved installation efficiency and costs



# SPI-UL Proposal includes NEC marking

“Dear Colleagues:

In follow up to our SPI-UL Project Presentation to CCCA-Members at BICSI in February; and the follow-up SPI-UL HP/4PPoE Testing Demonstration and Presentation at UL in April; SPI and UL are pleased to provide the attached summary of Phases 2 and 3 to those that have expressed interest in potentially joining this project.

The Wire and Cable Section of SPI is collaborating with UL LLC (Underwriters Laboratories), and Multiple W&C industry parties (worldwide), regarding a UL Fact Finding Project directed toward ‘higher power’ Power over Ethernet (PoE) issues. This Project will support SPI NEC proposals (PIs) for the testing, third-party certification and marking of W&C for PoE applications, to facilitate safe design, installation and use. “

Letter from SPI-UL is posted as a separate file “UL SPI PoE Phase 2 3 Statement of Work - distribution 20150515.pdf”

# Going forward....

- Maintain the rapid adoption and growth of PoE worldwide
- Resist attempts to include PoE in codes and regulations since it has been effectively regulated by the industry
- Clarify with a statement :

“IEEE 802.3bt 4PPoE task force objectives are to operate over the installed base of Class D cabling as specified in ISO/IEC 11801:1995, or better assuming the temperature rating of such cables is not exceeded under cabling configurations and installation guidelines defined by ISO/IEC TR 29125 and TIA TSB-184-A. Previous PoE applications have been widely deployed with over 100 million nodes installed by certified installers and there have been no safety issues reported. No additional requirements or guidelines to deploy IEEE 4PPoE applications are anticipated.”