# Introduction

- As a global leader developing enterprise network test solutions, Fluke Networks actively participates in all of our industry's leading standards organizations. Over the past few years, our team members contributed to over 30 different cabling, components, and applications standards projects around the world.

- This presentation will provide an update on important cabling and application standards, and explain how they impact your customers, your networks, and your organization. Emphasis will be placed on ISO/IEC and TIA TR-42 Premises Cabling families as well as the IEEE 802.3 Ethernet standard development.

What's new, what's different, and what's needed to fully test this category.

# CATEGORY 8 CABLING STANDARDS

# Category 8 cabling

- Category 8 published as TIA 568C.2-1 ammendment

- Included in the new edition TIA 568.2-D (expected Jan. 2018)

- New ISO 11801-1 includes Class I and Class II (ratified Sep. 2017)

- ISO/IEC continues to develop technical reports for higher Gb/s cabling

Pictures & Diagrams Here

# Category 8 cabling

- Unique features of Cat8 cabling
  - 2,000 MHz BW
  - 30 m reach – mainly data centers
  - Requires shielded cable
  - [additional detail here]

Pictures & Diagrams Here

# Category 8 cabling

- Unique test requirements
  - Level V test equipment standards
  - [additional details here]

Pictures & Diagrams Here

# Beyond Class 1 cabling

- Details of ISO/IEC technical reports for higher performance cabling

Pictures & Diagrams Here

Progress, cabling requirements, and testing.

# STANDARDS FOR HIGH POWER POE

# High power PoE

- TIA TSB 184A has published
    - [details here]
- New TIA project for normative standard, TIA 568.2-D A1

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# High power PoE

- ISO/IEC guidelines in TS 29125
  - [details/differences here]

Pictures & Diagrams Here

# High power PoE

- Test requirements supporting PoE cabling
  - [details here]

Pictures & Diagrams Here

Comparison of various definitions, associated standards, and test requirements.

# PLUG TERMINATED LINKS

# Plug terminated links

- Modified Permanent Links
  - Bicsi was first
  - Definitions are similar
  - Test requirements are obsolete
  - [details here]

Pictures & Diagrams Here

# Plug terminated links

- Modular Plug Terminated Links (MPTL)
  - TIA 568.2-D
  - "plug-to-socket" (like Bicsi)
  - Not found in ISO/IEC standards

Pictures & Diagrams Here

# Plug terminated links

- End-to-End Links
  - ISO TR11801-9902 published
  - [definitions, applications, and test requirement details here]

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# Plug terminated links

- Direct Attach Links
  - [TIA definition and standards here]
  - [New ISO project description here]

Pictures & Diagrams Here

# What does it all mean?

- [Discussion of the increasing number of specifications for application specific cabling]

Latest developments and testing trends.

# STANDARDIZATION OF MPO FIBER TESTS

# MPO FIBER TESTS

- IEC TR 61282-15 published
  - technical report describes various MPO test methods
  - [details here]
  - Adopted by reference in new TIA and ISO standards
  - [details here]

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# MPO FIBER TESTS

- New IEC project 61280-4-5

- standard will describe MPO
  test equipment requirements
  - [details here]

Pictures &
Diagrams Here

New and existing standards and cabling applications.

# SINGLE-PAIR ETHERNET STANDARDS

# Single-pair Ethernet

- History of IEEE SPE applications

- New IEEE SPE application standards
  - [use case descriptions here]
  - [standard progress details here]

Pictures & Diagrams Here

# Single-pair Ethernet

- New TIA and ISO projects for SPE
  - [TIA 568.5-D, ISO 11801-6-1, ISO 11801 addendum details here]

Pictures & Diagrams Here

# What does it all mean?

- [Continued discussion of the increasing number of specifications for application specific cabling.]

- [Discussion of the role of SPE in the Internet of Things.]

# TIA 568-D series

- Was 568-C.n, now 568-n.D
- [Description of the various parts and organization changes]
- [Details of the project time line]

Pictures & Diagrams Here

# Summary

- Attandees should come away with a clear understanding of current cabling industry standardization activities, and looking toward the near future.

- There will be a clear an unbiased presentation of facts and best pratices for the installation and testing of the latest ICT infratstructure.

Please accept this for the purpose of CEC qualifications.

**THIS CONCLUDES OUR SUMMARY**