1PoDL Standard TBD

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PoDL Study Group
Dallas TX November 2013
PoE Review

- **PSE**: Power Sourcing Equipment
- **PD**: Powered Device
- **Detection**: is there a PD connected?
  - Looks for Detection Signature
  - PoE: 25k resistance with 2V-10V applied
- **Classification**: what kind of PD is it?
  - Looks for Classification Signature
  - PoE: predefined current draw with 15V-20V applied
- **Disconnect**: is the PD still there?
  - Looks for MPS: Maintain Power Signature
  - PoE: 10mA minimum current draw
  - If PD is gone, turn off power and restart detection
Clause 33 Structure

33. Data Terminal Equipment (DTE)
   Power via Media Dependent Interface (MDI)

33.1 Overview
   33.1.1 Objectives
   33.1.2 Compatibility considerations
   33.1.3 Relationship of DTE Power via MDI to the IEEE 802.3 Architecture
   33.1.4 Type 1 and Type 2 system parameters

33.2 Power sourcing equipment (PSE)
   33.2.1 PSE location
   33.2.2 Midspan PSE types
   33.2.3 PI pin assignments
   33.2.4 PSE state diagrams
   33.2.5 PSE detection of PDs
   33.2.6 PSE classification of PDs and mutual identification
   33.2.7 Power supply output
   33.2.8 Power supply allocation
   33.2.9 PSE power removal

33.3 Powered devices (PDs)
   33.3.1 PD PI
   33.3.2 PD type descriptions
   33.3.3 PD state diagram
   33.3.4 PD valid and non-valid detection signatures
   33.3.5 PD classifications
   33.3.6 PSE Type identification
   33.3.7 PD power
   33.3.8 PD Maintain Power Signature

33.4 Additional electrical specifications
   33.4.1 Isolation
   33.4.2 Fault tolerance
   33.4.3 Impedance balance
   33.4.4 Common-mode output voltage
   33.4.5 Pair-to-pair output noise voltage
   33.4.6 Differential noise voltage
   33.4.7 Return loss
   33.4.8 100BASE-TX transformer droop
   33.4.9 Midspan PSE device additional requirements

33.5 Management function requirements
   33.5.1 PSE registers

33.6 Data Link Layer classification
   33.6.1 TLV frame definition
   33.6.2 Data Link Layer classification timing requirements
   33.6.3 Power control state diagrams
   33.6.4 State change procedure across a link

33.7 Environmental
   33.7.1 General safety
   33.7.2 Network safety
   33.7.3 Installation and maintenance guidelines
   33.7.4 Patch panel considerations
   33.7.5 Telephony voltages
   33.7.6 Electromagnetic emissions
   33.7.7 Temperature and humidity
   33.7.8 Labeling

33.8 Protocol implementation conformance statement (PICS) proforma for Clause 33, DTE Power via MDI
   33.8.1 Introduction
   33.8.2 Identification
   33.8.3 PICS proforma tables for DTE Power via MDI
Mandatory Sections

• Overview (also Clause 1)
• PSE, PD power supply specs
  • inrush behavior, overload behavior, timing, etc.
• Additional Electrical
  • noise, impedance, stability, etc.
• Management (also Clause 30)
• Environmental
• PICs
Further Discussion Needed

- Detection
- Classification
- Mutual Identification
- PSE, PD Operating Voltage(s)
- Power Levels
- Isolation requirements
- Disconnect
Points to Consider

- Behavioral spec, not equipment spec
- Current/Power limits with various channels
- Classification vs. Fast Startup (in Objectives)
- Future automotive uses (beyond cameras)
- Usage beyond automotive space
  - Industrial
  - Factory Automation
  - IoT
PoDL Presentations from RTPGE

Draft 0.1

- Will be posted before January Interim
- Structure and text will be copied from Clause 33 (PoE)
  - Non-relevant portions removed (center tap schematics, etc.)
- Next meeting: proposals required to delete text or insert new text