

Fault-Managed Power Ethernet Powering Techniques Call For Interest (CFI) Closing Report

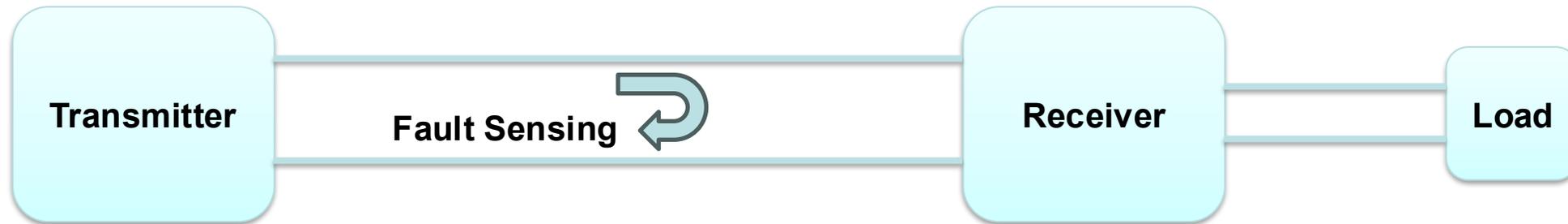
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CFI Announcement

Providing power along with Ethernet data via Power Over Ethernet (PoE) has fueled an expansion of networked devices and an ever-increasing demand for more power. PoE was specified such that it could comply with IEC 60950-1 (now IEC 62368-1) Limited Power Source (LPS) requirements, which align with Class 2 requirements in NFPA 70 (National Electrical Code). Recent developments in fault detection methods enable power delivery at higher voltages with techniques that limit energy into a fault, known as Fault Managed Power (FMP), which aligns with Class 4 power in NFPA 70. **The addition of FMP to Ethernet powering techniques, including potential modifications to Ethernet PHYs, enables greater power delivery, longer range, and increased efficiency for networked devices.** This call for interest is to request the formation of a "Fault-Managed Power Ethernet powering techniques" study group.

Fault Managed Power (FMP) Overview



- Transmitter, cabling, and Receiver work as a coordinated system
- Fault detection occurs in milliseconds – active fault detection
- Energy delivered into fault is limited to avoid hazardous conditions
- Power could be delivered PoE like (4P cable), SPoE coupled (1P cable), SPoE shared (2P cable), or Hybrid (fiber and copper cable)

Why Now?

- Market demand has crossed the PoE limit
 - Wi-Fi 7 APs, LED arrays, motorized shades, and edge compute nodes increasingly require $>100\text{W}$ —PoE cannot grow further.
- Multiple proprietary systems are already shipping, accelerating fragmentation.
- Industry resources have freed up from recent SPE efforts, and multiple contributors are ready to contribute.
- Make FMP part of the Ethernet ecosystem

Why This Belongs in IEEE 802.3

- UL and IEC define safety
- National Electrical Codes/IEC define Installation
- IEEE 802.3 uniquely provides:
 - Ethernet powering expertise (PoE, SPE Power)
 - Multi-vendor interoperability framework
 - PHY coexistence knowledge
 - Long-term architectural stability
- IEEE 802 defines interoperability
- Worldwide reach
- IEEE 802.3 **is** Ethernet, and Ethernet needs FMP

Ethernet Compatibility

- Existing regulations require new cabling for FMP
- Nothing in FMP is fundamentally incompatible with Ethernet. The question is which PHY modes require modification vs. can operate unchanged.
 - Transients associated with most FMP systems might disrupt data
 - Potential solution paths include:
 - Existing PHYs without modification
 - Existing PHYs with interference avoidance (RS)
 - Existing PHYs with modification
 - New PHY derived from existing PHY

Supporters

- Joel Goergen, Cisco Systems
- Stan Mlyniec, VoltServer
- John D'Ambrosia, Futurewei, U.S. Subsidiary of Huawei
- Mark Nowell, Cisco Systems
- Kent Lusted, Synopsys
- Steve Eaves, VoltServer
- Valerie Maguire, Copperopolis
- Peter Jones, Cisco
- Lennart Yseboodt, Signify
- Clark Carty, HPE
- Yan Zhuang, Huawei
- Jon Lewis, Dell
- James Withey, Fluke
- Yi Sun, Lightera
- Hideki Isono, Furukawa FITEL Optical Components
- Shoji Ogawa, Furukawa FITEL Optical Components
- Rick Frosch, Pihong USA
- John Calvin, Keysight
- Geoff Thompson, Independent
- John George, Lightera
- Wayne Hopkinson, Commscope
- Tim Baggett, Microchip
- Paul Nikolich, Nikolich Advisors LLC
- Scott Sommers, Molex
- Mike Wingrove, Sympatico
- Paul Vanderlaan, Panduit
- Heath Stewart, Analog Devices
- Marcel Kiessling, Beckhoff Automation
- David Brandt, Rockwell
- Andy Moorwood, Keysight Technologies
- Yong Kim, General Motors

CFI Consensus Building Meeting

- CFI Presentation found on the CFI page:
https://www.ieee802.org/3/cfi/request_0326_2.html
 - Held Tuesday 10 March 2026
 - Attendance: ~50 (26 in room and 47 online)
- Straw Poll Results:
 - Should a study group be formed to develop a PAR, CSD responses, and objectives for “Fault-Managed Power Ethernet powering techniques”?
 - Y: 33 N: 0 A: 4
 - Would you participate in the “Fault-Managed Power Ethernet powering techniques” Study Group in IEEE 802.3?
 - Y: 19 N: 9 A: 9
 - Affiliation support (derived from previous question)
 - Y: 14 N: 6 A: 7

Study Group Motion

Move that the IEEE 802.3 Working Group request the formation of a Study Group to develop a Project Authorization Request (PAR) and Criteria for Standards Development (CSD) responses for Fault-Managed Power Ethernet powering techniques.

M: Chad Jones – Cisco

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Thank You!