# IEEE 802.3 Single-Pair Ethernet Powering Cabling Restrictions (EPCR) Study Group Closing Report

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# IEEE 802.3 EPCR Study Group
# Study Group information

## Study Group Organization

Chad Jones, IEEE 802.3 EPCR Study Group Chair

## Study Group charter

Move that the IEEE 802.3 Working Group request the formation of a Study Group to develop a Maintenance Project Authorization Request (PAR) and Criteria for Standards Development (CSD) responses for clarification on the cabling requirements for Ethernet powering

## Study Group web and reflector information

Reflector information: https://www.ieee802.org/3/ad_hoc/PDCC/reflector.html

Home page: http://ieee802.org/3/EPCR/index.html

# IEEE 802.3 EPCR Study Group
# Activities this week

## Met Wednesday PM1

### Major items discussed, decisions made and actions

- Reviewed comments against PAR and CSD

# IEEE 802.3 EPCR Study Group
# Next Steps

Get promoted to a Task Force!

# PAR and CSD review

Comment replies: https://www.ieee802.org/3/EPCR/public/2503/P802d3_PAR_CSD_review.pdf

PAR: https://mentor.ieee.org/802-ec/dcn/25/ec-25-0020-03-LMSC-draft-ieee-p802-3dp-par.pdf

CSD: https://mentor.ieee.org/802-ec/dcn/25/ec-25-0021-01-LMSC-draft-ieee-p802-3dp-csd.pdf

# Comment #1

- The following comment on P802.3dp has been made by Guido Hiertz on 27 Feb 2025 :

  You are kindly asked to please consider modifying 5.2.b as follows:

  "The standard defines requirements and restrictions [.]."

  Please note that failure to respond to a comment may result in deferral of the PAR until the next NesCom agenda.

  Please log into myProject to respond to this comment.
  https://urldefense.com/v3/__https://development.standards.ieee.org/myproject-web/app*submissions/9383/12037__;Iw!!NpxR!gb3C26Vd7wYLjf0Th48_Ahe33W0iQxiRUcsjdrWTqiqfx3ublMqeTx5UoVsJ3QM_ZW8xHldup5Q$

# Reply to comment #1

- Thank you very much for your comment. Item 5.2.b is titled 'Scope of the Project' and subclause 8.1.2 'Amendments and corrigenda' of the IEEE-SA Standards Board Operations Manual says, 'All PARs for amendments and corrigenda shall include a project scope.'. I, therefore, don't consider it correct to add the text 'The standard ...' into the project scope since the scope of the resultant standard has to be within, not equal to, the project scope. However, to make the text a complete sentence, I will ask the NesCom administrator to change the text to read 'This project will specify requirements and ...'.

# 802.1 comment 1

P802.3dp CSD: Page 5

- The reference to IEEE Std 802.1D is incorrect because IEEE Std 802.1D has been superseded by IEEE Std 802.1Q. Is this reference intended to be IEEE Std 802.1AC?
- Reply: This is a cut and paste error by the SG chair. Change the text to match the current state of the 802.1 document: The proposed standard will ~~conform to 802.1D, 802.1Q and 802~~ **comply with IEEE Std 802, IEEE Std 802.1AC and IEEE Std 802.1Q**.

# 802.1 comment 2

P802.3dp CSD: Page 7

- The use of the term "guidance" is included in multiple pages of this CSD. Suggest emphasizing requirements (and include "including guidance" where applicable), since requirements are what are intended to be conveyed by a standard.
- Change Technical Feasibility (page 7) to: “This standard provides **requirements (including guidance)** to improve…”

# 802.11 comments

Text of 5.2b
5.2.b Scope of the project: This project will specify requirements and restrictions for supporting the IEEE 802.3 ‘plug-and-play’ interoperability model for Single-Pair Power over Ethernet (SPoE) due to current carrying capacity limitations in cabling.

- **5.2b – suggestions:**
  - 1. Delete “(e.g. cabling with a current capacity of less than 2 A per conductor).”
  - 2. Delete the highlighted crossed out text “~~(e.g. cabling~~ with a current capacity of less than 2 A per conductor).”
  - 3. Do 2. and remove “less than”.
  - 4. Suggestion to start with a full sentence:
  - Suggested Replacement: This amendment defines requirements and restrictions for supporting the IEEE 802.3 ‘plug-and-play’ interoperability model for Single-Pair Power over Ethernet (SPoE) due to current carrying capacity limitations in cabling with a current capacity of  2 A per conductor.

# EPCR SG reply

- We accept suggestion 1. Therefore suggestions 2 and 3 are no longer applicable.
- For suggestion 4, item 5.2.b is titled 'Scope of the Project' and subclause 8.1.2 'Amendments and corrigenda' of the IEEE-SA Standards Board Operations Manual says, 'All PARs for amendments and corrigenda shall include a project scope.'. We are, therefore, concerned that it wouldn't be correct to start the project scope response with the text 'This amendment ...'. In addition, the scope of the resultant standard has to be within, not equal to, the project scope. However, to make the text a complete sentence as requested, we will change the project scope to read 'This project will specify requirements and restrictions ...'.

**5.2.b Scope of the project:** ~~Define~~ This project will specify requirements and restrictions for supporting the IEEE 802.3 'plug-and-play' interoperability model for Single-Pair Power over Ethernet (SPoE) due to current carrying capacity limitations in cabling ~~(e.g. cabling with a current capacity of less than 2 A per conductor)~~.

# Late Breaking News

- 'The scope of the project is the specification of requirements and restrictions for supporting the IEEE 802.3 "plug-and-play" interoperability model for Single-Pair Power over Ethernet (SPoE) due to current carrying capacity limitations in cabling'.

# 802.11 comments

- **8.1 Add the referring clause number to the text “5.5”**

8.1 Additional Explanatory Notes: **5.5:** ISO/IEC 11801-1/AMD1 ED1 Information Technology – Generic Cabling for Customer Premises

**5.5:** ISO/IEC 11801-9911: Guidelines for the use of balanced single pair applications within a balanced 4 pair cabling system

- **EPCR reply: Accept**

**8.1 Additional Explanatory Notes:** 5.5: ISO/IEC 11801-1/AMD1 ED1 Information Technology – Generic Cabling for Customer Premises
5.5: ISO/IEC 11801-9911: Guidelines for the use of balanced single pair applications within a balanced 4 pair cabling system

# 802.11 comments continued

- **5.5 Need: Add “which  is insufficient for the IEEE  802.3 ‘plug-and-play’ interoperability model ” to the end of 2nd paragraph.**
- **Replace first “that” with “the insufficiency of ” and put period after “SPoE Applications.”**
- **Suggested Replacement:**
  - The IEEE 802.3 Working Group (WG) needs to address the insufficiency of the current carrying capacity of certain cabling installed and proposed for SPoE applications.
  - The IEEE 802.3 WG became aware that ISO/IEC JTC 1/SC 25/WG 3 is drafting standards and technical reports (e.g. ISO/IEC 11801-1/AMD1 and ISO/IEC TR 11801-9911) that support the use and reuse of balanced multipair cabling systems in one pair applications, resulting in a standards-imposed restriction of 0.75 A per conductor. Additionally, they are defining a 23 American Wire Gauge (AWG) single-pair channel that only supports 0.75 A per conductor which is insufficient for the IEEE 802.3 ‘plug-and-play’ interoperability model.

**EPCR reply: accept**

**5.5 Need for the Project:** The IEEE 802.3 Working Group (WG) needs to address ~~that~~ the insufficiency of the current carrying capacity of certain cabling installed and proposed for SPoE applications ~~may be insufficient for the IEEE 802.3 ‘plug-and-play’ interoperability model~~.
The IEEE 802.3 WG became aware that ISO/IEC JTC 1/SC 25/WG 3 is drafting standards and technical reports (e.g. ISO/IEC 11801-1/AMD1 and ISO/IEC TR 11801-9911) that support the use and reuse of balanced multi-pair cabling systems in one pair applications, resulting in a standards-imposed restriction of 0.75 A per conductor. Additionally, they are defining a 23 American Wire Gauge (AWG) single-pair channel that only supports 0.75 A per conductor which is insufficient for the IEEE 802.3 'plug-and-play' interoperability model.

# Objectives

- They have not changed
- https://www.ieee802.org/3/EPCR/public/2501/EPCR_Objectives_V2.pdf
    1. Provide clarification on the cabling requirements for single-pair Ethernet powering.
    2. Specify restrictions for cabling at different current carrying capacities that do not support all the single-pair power classes defined in IEEE 802.3.

# IEEE 802.3 EPCR Study Group
# Motion EPCR1

Move that the IEEE 802.3 Working Group approve the PAR, CSD, and Objectives for IEEE P802.3dp as found in the documents posted here:

PAR: https://mentor.ieee.org/802-ec/dcn/25/ec-25-0020-03-LMSC-draft-ieee-p802-3dp-par.pdf
CSD: https://mentor.ieee.org/802-ec/dcn/25/ec-25-0021-01-LMSC-draft-ieee-p802-3dp-csd.pdf
Objectives: https://www.ieee802.org/3/EPCR/public/2501/EPCR_Objectives_V2.pdf

M: Chad Jones

S:

# IEEE 802.3 EPCR Study Group
# Motion EPCR2

Move that the IEEE 802.3 Working Group request the re-chartering of the EPCR Study Group.

M: Chad Jones

S:

# IEEE 802.3 EPCR Study Group
# Motion EPCR3

Motion: grant a six-month extension of the EPCR Study Group.

M: Chad Jones

S:

Rationale for extension request: Approval has been sought to forward the IEEE P802.3dp PAR to NesCom, which was developed by this Study Group. This request for extension is only to address any issues during the approval process for the IEEE P802.3dp PAR.

# Questions?

Thank you!