EPCR
Consensus Building

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This is not my work

- These slides are things I’ve collected from various sources and are meant as a conversation starter

Plug ‘n Play Support

- Link segment support for Plug ‘n play should be encouraged and be clarified in 802.3…..
- …but 802.3 should recognize that not all cabling can support 2A, and that a significant subset of the power classes can operate at below 0.75A….
- ….or that some users may intentionally choose to sacrifice plug ‘n play in favor or using a higher AWG for cabling.

Consensus Question?

Do we agree that 2A Plug n Play Support must be strongly recommended but not required?

Possible approach for EPCR?

TF adds a current capacity section to link segment specifications to cover the operational need of Clause 104. Recommendations can also be given with text linking this to the need for “Plug ‘n Play”, e.g……

Current capacity

Link segments should have a current carrying capacity of 2 A. Cabling systems current carrying capacity rated below 2 A are not compatible with Plug ‘n Play support of clause 104 and 189 and are considered engineered solutions.

Restrictions are real

- Moving from 0.75 A 4Pr to 2 A SPE does heat the cabling more than was established for PoE(+)
- 802.3 needs to recognize restrictions due to cable heating and bundling.
- Installation of 18 AWG is not always needed, practical or cost effective.
- No need to re-invent the wheel, as this is covered by ISO and TIA standards.

Consensus Question?

Do we agree that 802.3 should provide guidance on when links segments are not 2A?

Possible approach for EPCR?

IEEE SG/TF adds references to TSB184/TR29125 for cabling rated below 2A, to provide further guidance on limitations/restrictions for these engineered solutions.

Operation vs damage*

- Operational support of 2 A is a different issue from the cabling/installation being damaged by 2A.
- Should cabling rated below 2 A (due to AWG or installation factors), be connected to a 2 A PSU, it should not be damaged.

Consensus Question?

Do we agree that 802.3 should provide guidance on cabling damage?

Possible approach for EPCR?

TF adds text specifying that any link segment that does not support Plug 'n Play at 2 A (engineered solutions), or only a subset of the power classes, shall not be damaged when 2 A is applied, only a lack of operational support.

- *i.e. it can get warmer, can drop app support, shorten range due to thermal increase of resistance, even degrade lifespan of cable, but not fuse, burn up, explode etc.*

**Damage is not intended to describe safety.*

Identification

- Beyond any technical issues, user identification of ports that are not plug n play is important for ease of uses, and prevention of connection of equipment to an incompatible link segment.

Consensus Question?

Do we agree that 802.3 should provide guidance on port identification?

Possible approach for EPCR?

TF adds guidance that any link segment that is not PnP be marked in some standardized way, so the user has at least a visual prompt.

One suggestion

- TF adds text specifying that any link segment that does not support Plug ‘n Play at 2A (engineered solutions), or only a subset of the power classes, shall not cause any safety issue when 2A is applied, only a lack of operational support.
  - i.e. it can get warm, can drop app support, shorten range due to thermal increase of resistance, even degrade lifespan of cable due etc, but not fuse, burn up, explode etc.
    - I know this is not great from a PoE PnP marketing point of view, but it is reality with where TIA and ISO are going, and with the user of higher (cheaper) AWG of cables.
  - That any links segment that is not PnP be marked in some standardized way so the user has at least a visual prompt.
    - E.g. Red SPE jacks do not support PnP.

Other areas of consensus?

- What other areas/topics does EPCR need to address?