

# SPMD Study Group Objectives - Strawman Peter Jones – Cisco

# Clean objectives

# Objectives (1)

1. *Define performance characteristics of a mixing segment with a single balanced pair of conductors supporting up to at least 16 nodes, for up to at least 50 m reach*
2. *Add support for the mixing segment to 10BASE-T1S*
3. *Maintain a bit error ratio (BER) at the MAC/PLS service interface of less than or equal to  $10^{-10}$  on the mixing segment*
4. *Specify improvements for Energy Efficient Ethernet*
5. *Specify optional plug-and-play power distribution over the mixing segment*
6. *Specify increased node count for the PLCA RS*
7. *Support the optional Time Synchronization Service Interface (TSSI)*

## Objectives(2)

8. *Support interoperability with Clause 147 multidrop*
9. *Specify an optional PLCA node ID allocation method*
10. *Select a single mandatory MDI connector for this project*
11. *PSE shall only energize the mixing segment when at least one PD is connected*
12. *Support addition of PDs or strings of PDs to an operating powered mixing segment without bringing down the data or power on the mixing segment.*

# Open

- *Specify optional improvements for Time Sensitive Networking (TSN) operation over the mixing segment*
- Do not preclude multiple PSEs on the mixing segment
- Presentation on EEE improvements

# Interesting but not an explicit Objective

1. Trade-offs for T-piece vs Pass-through
2. PSE in any location
3. PD polarity insensitivity

# What next?

- Gather additional use cases
- Discuss on the SPMD reflector
- Come to Geneva ready to close use cases and approve project docs.

Older material

# Other topics

~~1. Should we define a PLCA node ID allocation method~~

~~2. MDI for multidrop~~

~~a. Should we choose a single connector~~

~~i. Choose one of the point-to-point options or something different?~~

~~b. Topology~~



~~i. T-piece & spur – 2 pin connector to system~~



~~ii. "In and out" – options include:~~

- ~~• 2x2 pin connectors with internal interconnect~~
- ~~• 1x4 pin connector into system with internal interconnect~~
- ~~• 1x2 pin connector into system with interconnect in connector~~

# Additional Topics for Objectives

- ~~Mandate connector~~
  - ~~Optional second pass-through mechanical interface~~
- ~~PD polarity insensitivity~~
- ~~PD and/or DTE hot swap (e.g., hot remove/add etc)~~
  - ~~Suggests T topology is mandated?~~
  - ~~Needs definition e.g., replace vs add new~~
- ~~Support PSE in any location~~
- ~~Support a maximum stub length of TBD~~
- ~~Support plug & play operation (power and data)~~
- ~~Do not preclude interoperability with Clause 147 multi-drop~~
- ~~Do not preclude multiple PSEs on the mixing segment~~

Thank You!