Towards a baseline proposal for a 100 Gb/s SMF PHY 500 m using single wavelength PAM4 modulation 100GBASE-DR

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802.3cd Objectives: v3 (*)

100 Gb/s Ethernet PHYs

- Define a two-lane 100 Gb/s PHY for operation over
  - copper twin-axial cables with lengths up to at least 3m.
  - printed circuit board backplane with a total channel insertion loss of <= 30dB at 13.28125 GHz.
  - MMF with lengths up to at least 100m
  - SMF with lengths up to at least 500m
- Define a 100 Gb/s PHY for operation over SMF with lengths up to at least 2 km **

(*) http://www.ieee802.org/3/cd/P802d3cd_objectives_v3.pdf
** adopted by Task Force. Not yet ratified by Working Group

802.3cd Objectives –
Path Forward Proposal

Proposed path forward

- Replace the current 100Gb/s PHY objectives with the following:
  - Define a two-lane 100 Gb/s PHY for operation over
    - Copper twin-axial cables with lengths up to at least 3m.
    - Printed circuit board backplane with a total channel insertion loss of <=30dB at 13.28125 GHz.
    - MMF with lengths up to at least 100m
  - Define a single lane 100 Gb/s PHY for operation over duplex SMF with lengths up to at least 500 m, consistent with IEEE P802.3bs Clause 124
- Update the CSD inline with the new objectives
  - See brown_3cd_02_0916

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nicholl_3cd_01_0916

Baseline Proposal for single lane duplex SMF 100 Gb/s PHY up to 500 m

- 100GBASE-DR, to be consistent with the latest 400GBASE-DR4 in Clause 124, but
  - with 1 lane instead of 4 lanes
  - with penalties consistent with a channel allowing up to 4 discrete reflectances of -35 dB
  - leveraging PCS per nicholl_3cd_01_0716

Proposed Straw Poll

Straw Poll #:

I would support adopting traverso_3cd_01_0916 as the baseline to address the single lane 100 Gb/s PHY for operation over duplex SMF with lengths up to at least 500 m.

- Y: N: A: