

Continuing discussion on “Missing objectives”

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Supporters

- ❑ Chris Cole, Finisar
- ❑ Jonathan King, Finisar
- ❑ Pete Anslow, Ciena
- ❑ Steve Trowbridge, Nokia
- ❑ Scott Kipp, Brocade
- ❑ Paul Kolesar, CommScope
- ❑ Kohichi Tamura, Oclaro

Introduction

Objectives and Lane Rates

Application	50G	100G	200G	400G
Backplane	Y	Y (4x25,2x50)	Y (4x50)	N
Twinax	Y	Y (4x25,2x50)	Y (4x50)	N
100m MMF	Y	Y (10x10,4x25,2x50)	Y (4x50)	Y (16x25)
500m PSM	N	N	Y (4x50)	Y (4x100)
2km SMF	Y	N	Y (4x50)	Y (8x50)
10km SMF	Y	Y (4x25)	Y (4x50)	Y (8x50)

P802.3cd adds
50G variants

P802.3bs

**No IEEE Standards
Or Objectives!!!**

*Whistler, May 2016:
booth_3cd_01_0516*

Current CD agreements from Whistler

- During the CD meeting in Whistler it was agreed to add the following “missing objectives” for 100 Gb/s Ethernet:
 - Define a two-lane 100 Gb/s PHY for operation over SMF with lengths up to at least 500m
 - Assumed to be 100GBASE-DR2 in a PSM2 configuration
 - Define a 100 Gb/s PHY for operation over SMF with lengths up to at least 2 km
 - Assumed by many to be 100GBASE-FR2 in a CWDM2 configuration

Approved SMF objectives BS & CD with 50G PAM4 per lane

	50 Gb/s	100 Gb/s	200Gb/s	400Gb/s
500 m	—	—	Yes 4*50G PSM4	No (4*100G PSM4 400GBASE-DR4)
2 km	Yes 1*50G Serial	—	Yes 4*50G WDM4	Yes 8*50G WDM8
10 km	Yes 1*50G Serial	—	Yes 4*50G WDM4	Yes 8*50G WDM8

Adding SMF objectives adopted by CD in Whistler

	50 Gb/s	100 Gb/s	200Gb/s	400Gb/s
500 m	—	Provisionally Yes 2*50G PSM2?	Yes 4*50G PSM4	No (4*100G PSM4 400GBASE-DR4)
2 km	Yes 1*50G Serial	Provisionally Yes 2*50G? WDM2?	Yes 4*50G WDM4	Yes 8*50G WDM8
10 km	Yes 1*50G Serial	?	Yes 4*50G WDM4	Yes 8*50G WDM8

Anything else missing?

- It is expected that the industry will move from currently dominant 25G optical lane technology for 100 Gb/s Ethernet to 50G optical lane technology for most distances for 50 Gb/s, 100 Gb/s, 200 Gb/s and 400 Gb/s Ethernet applications
- In this overview the a “striking” empty cell is for a 2 lane WDM configuration for 100 Gb/s over 10km SMF, as 100GBASE-LR2
- Taking into consideration that it is expected that the 802.3 WG will be requested to approve additional objectives adopted by the CD Task Force during the Whistler meeting, during the meeting in San Diego, now would appear the right time to consider adding other objectives.

Why add a 10km objective for 100G?

- ❑ The market need for solutions addressing 100 Gb/s Ethernet applications for 10km distances has been well established in previous projects.
- ❑ Current 100 Gb/s solutions for 10km are based on 25 Gb/s lane technologies, which are serving current needs.
- ❑ 50 Gb/s optical lane technology is expected to become the mainstream optical technology for most future Ethernet applications towards 2020.
- ❑ So in a few years a 2*50G CWDM2 solution is expected to enable a significant cost reduction over current 4*25G CWDM4 solutions, while a 100G lane technology suitable to address 10km is under investigation.

Proposal

Add the following additional objective to CD:

“Define a 100 Gb/s PHY for operation over SMF with lengths up to at least 10 km”

A Detailed baseline proposal to be found in [cole_3cd_01_0716](#)

Proposed motion text

Move to adopt the following objective for 100 Gb/s Ethernet PHYs:

- Define a 100 Gb/s PHY for operation over SMF with lengths up to at least 10 km

Q & A

Thank you