

Continuing discussion on “Missing objectives”

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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	Yes 4*50G PSM4	No (4*100G PSM4 400GBASE-DR4)
2 km	Yes 1*50G Serial	Provisionally Yes	Yes 4*50G WDM4	Yes 8*50G WDM8
10 km	Yes 1*50G Serial	—	Yes 4*50G WDM4	Yes 8*50G WDM8

My assumptions from Whistler

- Only 2x50G configuration for 500m, but not sufficient support for 1x100G.
- In the motion text for 2km SMF the specific number of optical lanes was not mentioned, many speaking expressed the view they supported this objective under the assumption that it would be a 2x50G configuration.

Anything else missing?

- ❑ From my assumptions from Whistler, I thought that adding an objective for 10km SMF for 100G on the basis of 2x50G PAM4 was a “no-brainer”
- ❑ Therefore stassar_072016_3cd_01_adhoc was presented to the CD Ad Hoc on 20 July, proposing to add an objective for 100G/10km SMF.
- ❑ Because of feedback received around the Ad Hoc and the limited support expressed, I suggest a different discussion, without proposing an objective for 100G 10km SMF in this presentation.

For discussion

- ❑ How is the next generation for 100GE 10km SMF seen?
 - ❑ Recognizing that single optical lane 100G is the ultimate step.
 - ❑ Recognizing that today a suitable technology to enable that is not sufficiently established.
- ❑ Wait until adequate 100G single lane technology is available?
- ❑ Or alternatively use new 50G PAM4 technology to reduce the number of lanes from 4 to 2 as an intermediate step with significant cost reduction?
- ❑ Or will the latter be seen as too disruptive from current 4-lane 100G solutions, knowing that there will be another step to single lane 100G in some point in the future?

Q & A

Thank you