

# Proposed subclause of 999.9 on 100G BiDi fiber optic cabling model

Sisi Tan, Huawei

P802.3dk TF December 2023 Meeting

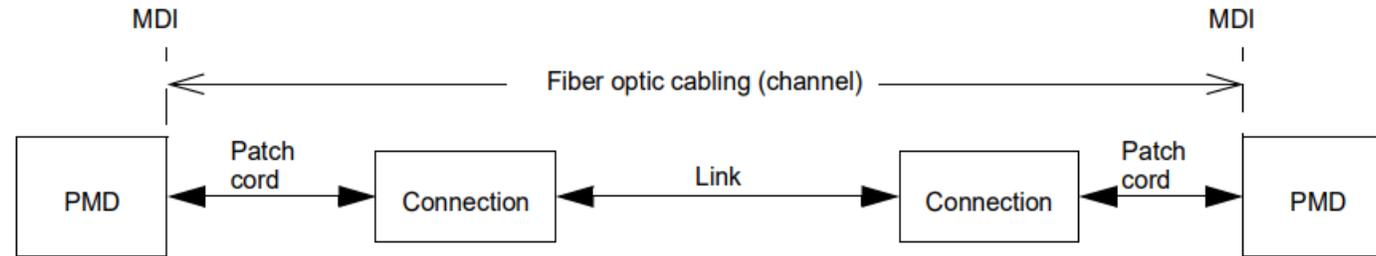
# Subclauses 140.9 and 160.9

- 140.9 specifies fiber optic cabling model for 100GBASE PMDs
  - It includes the fiber optic cabling model diagram and the fiber optic cabling (channel) characteristics table
- 160.9 from 802.3cp is another reference of this specification
  - 160.9 is for 50G BiDi
- It is proposed to reuse these subclauses for 100G BiDi
- Following slides show content reuse and suggested minor changes
  - Black text: reused content from 140.9/160.9
  - Blue text: difference between 140.9 and 160.9
  - Red text: discussion point

# Proposed subclause 999.9 (references: subclause 140.9 and 160.9)

## 999.9 Fiber optic cabling model

The fiber optic cabling model is shown in Figure 999–8.



**Figure 999–8—Fiber optic cabling model**

The channel insertion loss is given in Table 999–12. A channel may contain additional connectors as long as the optical characteristics of the channel, such as attenuation, dispersion, reflections, and polarization mode dispersion meet the specifications. [Insertion loss measurements of installed fiber cables are made in accordance with ANSI/TIA/EIA-526-7/method A-1.](#) The fiber optic cabling model (channel) defined here is the same as a simplex fiber optic link segment. The term channel is used here for consistency with generic cabling standards.

Reference: Clause 160

# Proposed subclause 999.9 (references: subclause 160.9)

**Table 999–12—Fiber optic cabling (channel) characteristics**

	<b>100GBASE-BR10</b>	<b>100GBASE-BR20</b>	<b>100GBASE-BR40</b>	<b>Unit</b>
Operating distance (max)	10			km
Channel insertion loss <sup>a, b</sup> (max)	6.3			dB
Channel insertion loss (min)	0			dB
Positive dispersion <sup>b</sup> (max)	TBD/3.3			ps/nm
Negative dispersion <sup>b</sup> (min)	TBD/-12.1			ps/nm
DGD_max <sup>c</sup>	5			ps
Optical return loss (min)	22			dB

<sup>a</sup> These channel insertion loss values include cable, connectors, and splices.

<sup>b</sup> Over the wavelength range 1260 nm to 1340 nm for 100GBASE-BR10 and 1281 nm to 1322 nm for 100GBASE-BR20 and 100GBASE-BR40.

<sup>c</sup> Differential Group Delay (DGD) is the time difference at reception between the fractions of a pulse that were transmitted in the two principal states of polarization of an optical signal. DGD\_max is the maximum differential group delay that the system must tolerate.

# Thank you

Any questions?