

# MDI Considerations for 802.3db Comment against Draft 0.1

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IEEE P802.3db 100 Gb/s, 200 Gb/s, and 400 Gb/s Short Reach Fiber Task Force

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# Supporters and their affiliation

- Tiger Ninomiya, Senko
- Steve Swanson, Corning
- John Abbott, Corning
- Mabud Choudhury, OFS

# Overview

- Comment: Clause 167.10.3 in Draft 0.1 is incomplete
- Need to define MDIs for one pair, two pairs, and four pairs
  - Propose using the same MDI for 50 m and 100 m reach
- Build on 802.3cd (Clause 138)
- Include option for APC for two and four pairs

# Optical lane assignments for 200GBASE-VR2 and 200GBASE-SR2

- Same as in Clause 138 for 100G-SR2

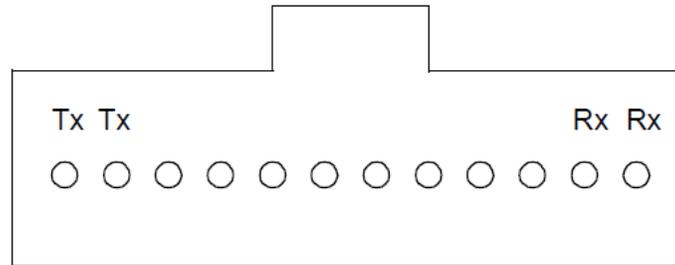


Figure 167-6—Optical lane assignments for 200GBASE-VR2 or 200GBASE-SR2

# Optical lane assignments for 400GBASE-VR4 and 400GBASE-SR4

- Same as in Clause 138 for 200G-SR4

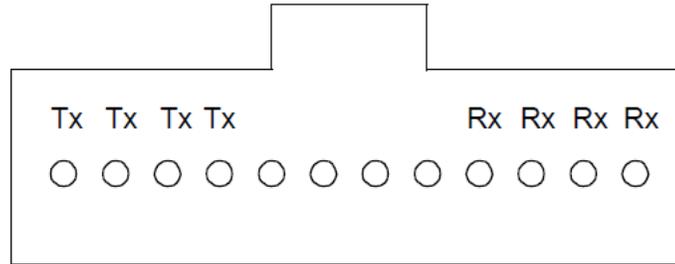


Figure 167-7—Optical lane assignments for 400GBASE-VR4 or 400GBASE-SR4

# Same as Clause 138 for duplex fiber

- Call out category C environment
- Black text is same as Clause 138, red text is new to Clause 167

## **MDI requirements for 100GBASE-VR and 100GBASE-SR**

The MDI shall optically mate with the compatible plug on the optical fiber cabling. For 100GBASE-VR and 100GBASE-SR, when the MDI is a connector plug and receptacle connection, it shall meet the performance specifications of IEC 61753-1 and IEC 61753-022-2 (for category C environment) for performance grade Bm/2m.

# For two pair and four pair add option for APC

- List two options for MDI
- Option A is for APC
- Option B is PC

## **MDI requirements for 200GBASE-VR2, 400GBASE-VR4, 200GBASE-SR2 and 200GBASE-SR4**

The MDI shall optically mate with the compatible plug on the optical fiber cabling. For 200GBASE-VR2, 400GBASE-VR4, 200GBASE-SR2 and 200GBASE-SR4 **there are two options: Option A for angled physical contact fiber interface or Option B for physical contact (i.e. flat or non-angled) fiber interface.**

# For two pair and four pair add option for APC

- Option A is for angled connectors
- Reference grade Bm/1m for APC performance

**For Option A**, the MDI adapter or receptacle shall meet the dimensional specifications for interface 7-1-3: *MPO adapter interface - Opposed keyway configuration*, or interface **7-1-9: MPO active device receptacle, angled interface**, as defined in IEC 61754-7-1. The plug terminating the optical fiber cabling shall meet the dimensional specifications of interface **7-1-1: MPO female plug connector, down-angled interface for 2 to 12 fibres**, as defined in IEC 61754-7-1. The MDI connection shall meet the interface performance specifications of IEC 61753-1 and IEC 61753-022-2 (**for category C environment**) for performance grade Bm/1m.

# For two pair and four pair add option for APC

- Option B is for flat connectors, same as in Clause 138

**For Option B**, the MDI adapter or receptacle shall meet the dimensional specifications for interface 7-1-3: *MPO adapter interface - Opposed keyway configuration*, or interface 7-1-10: *MPO active device receptacle, flat interface*, as defined in IEC 61754-7-1. The plug terminating the optical fiber cabling shall meet the dimensional specifications of interface 7-1-4: *MPO female plug connector, flat interface for 2 to 12 fibres*, as defined in IEC 61754-7-1. Figure 160–8 shows an MPO female plug connector with flat interface, and an MDI. The MDI connection shall meet the interface performance specifications of IEC 61753-1 and IEC 61753-022-2 (**for category C environment**) for performance grade Bm/2m.

# Conclusion

- Build on Clause 138 for MDI definition
- Same lane assignments
- 100G-VR and 100G-SR same MDI as 50G-SR
- 2 pair and 4 pair allow APC and PC options