Supporting Material for Comment #188

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Introduction

- **Comment #188**
  - **The annex is not written in an ethernet standards approach, where it addresses the breakout implementation, and doesn't address the MDI choices of the DRx / DRx-2. Additionally, Clauses 180 and 182 are making normative statements regarding the MDIs, despite the annex then providing additional MDI Connector choices**
  - **Proposed Remedy**
    - **Update Annex 180A using the approach for CR MDIs used in Clause 179 and Annex 179C.**
    - **Supporting presentation to be provided**

Overview of –CRx Approach

Clause 179.12 MDI specifications

The MDI couples the PMD (specified in 179.14 and 179.8) to the cable characteristics (specified in 179.11).

Annex 179C specifies the MDIs for 200GBASE-CR1, 400GBASE-CR2, 800GBASE-CR4, and 1.6TBASE-CR8.

- 200GBASE-CR1 has five specified MDI connectors: SFP224, SFP-DD224, QSFP224, QSFP-DD1600, and OSFP1600.
- 400GBASE-CR2 has four specified MDI connectors: SFP-DD224, QSFP224, QSFP-DD1600, and OSFP1600.
- 800GBASE-CR4 has three specified MDI connectors: QSFP224, QSFP-DD1600, and OSFP1600.
- 1.6TBASE-CR8 has two specified MDI connectors: QSFP-DD1600 and OSFP1600.

Annex 179C (normative) "MDIs for 200GBASE-CR1, 400GBASE-CR2, 800GBASE-CR4, and 1.6TBASE-CR8"

- Normative specifications –
    - Data signal and ground contact assignments
    - PICs
- A "MDI Connector" can support multiple PMDs / MDI connector types are informatively specified

Table 179C–1—Number of PMDs supportable for each connector type

MDI types	200GBASE-CR1	400GBASE-CR2	800GBASE-CR4	1.6TBASE-CR8	Reference
SFP224	1	—	—	—	179C.2.1
SFP-DD224	1,2	1	—	—	179C.2.2
QSFP224	1, 2, 4	1, 2	1	—	179C.2.3
QSFP-DD1600	1, 2, 4, 8	1, 2, 4	1, 2	1	179C.2.4
OSFP1600	1, 2, 4, 8	1, 2, 4	1, 2	1	179C.2.5

Suggested Remedy

- In Clauses 180 / 182, reflect Clause 179.12 MDI specifications only
- Replace

Clause 18x.xx MDI specifications

> The MDI couples the PMD (specified in 18x.xx and 18x.x) to the cable characteristics (specified in 18x.8.1).

> Annex 180A specifies the MDIs for 200GBASE-DR1, 400GBASE-DR2, 800GBASE-DR4, and 1.6TBASE-DR8.
> - 200GBASE-DR1 has two specified MDI connectors: MPO female plug connector, down-angled interface for single-row 12-fiber interface; MPO-16 female plug connector, angled interface for single-row 16-fiber interface
> - 400GBASE-DR2 has two specified MDI connectors: MPO female plug connector, down-angled interface for single-row 12-fiber interface; MPO-16 female plug connector, angled interface for single-row 16-fiber interface
> - 800GBASE-DR4 has one specified MDI connectors: MPO-16 female plug connector, angled interface for single-row 16-fiber interface
> - 1.6TBASE-DR8 has one specified MDI connectors: MPO-16 female plug connector, angled interface for single-row 16-fiber interface

- **Move optical lane assignments from Clauses 180 and 182 to Annex 180A**

Annex 180A Recommendations

- **Change Annex 180A Title –**
  - Annex 180A (informative) – "Support of breakout and mapping to lower rate optical PMDs"

    to

  - Annex 180A (normative) - "MDIs for 200GBASE-DR1, 400GBASE-DR2, 800GBASE-DR4, and 1.6TBASE-DR8"
- **Re-write Annex 180A to mirror 179C**
- **As part of overview include following table:**

MDI Type	200GBASE-DR1	400GBASE-DR2	800GBASE-DR4	1.6TBASE-DR8	Reference
Single 12-row	1, 2, 4	1, 2	1		180A.x.x
Single 16-row	1, 2, 4, 8	1, 2, 4	1, 2	1	180A.x.x

- **Move MDI connector details from Clauses 180 and 182 for all PMDS into Annex 180A (leave only MDI specification from prior page in clauses)**

Recommendation

- Major rewrites of Clause 180, 182, and Annex 180A (See presentation)
- Editorial license to implement this presentation, as necessary