Baseline Proposal for Optical Link Training "OLT"

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Scope of OLT Proposal

❑ **Baseline proposal to to use CL176A AUI link training for optical link training OLT**

❑ **OLT baseline provides following function:**

  – Use the same training frame as CL176A structure

  – OLT baseline is based on CL176A but with some of fields changed to reserved

  – OLT uses relevant state diagram from CL176A (one not related to coefficient update)

    • For example, we don't need coefficient update state diagram

  – Propagating RTS (Ready to Send) status from PCS-AUI-optical-AUI-PCS

  – Precoder enable/disable

    • Transmitter pre-coder is mandatory to implement but optional to enable using OLT

❑ **Follow Control Function of Clause 179.8.9 PMD for optical clauses implementation**

  – Applies to all FECo and FECi relevant PMD clauses: CL 180, CL 181, CL 182, CL 183.

Use CL176A Control/Status Field Structure for OLT

❑ **Use Table 176A-2 and 176A-3 with number of fields changed to reserved**

  – Highlighted rows indicated items changed to reserved.

Table 176A-2 Control field structure with modification highlighted

Bit(s)	Name	Description
15:14	Reserved	Transmit as 0, ignore on receipt
13:11	Reserved	Transmit as 0, ignore on receipt
10	Reserved	Transmit as 0, ignore on receipt
9:7	Modulation and precoding request	9 8 7 1 1 1 = PAM4 free-running PRBS31 with precoding 1 0 1 = Reserved 1 1 0 = PAM4 free-running PRBS13 with precoding 1 0 0 = PAM4 PRBS13 0 1 1 = PAM4 free-running PRBS31 0 1 0 = PAM4 free-running PRBS13 0 0 1 = PAM2 free-running PRBS31 0 0 0 = PAM2 PRBS13
6:5	Reserved	Transmit as 0, ignore on receipt
4:2	Reserved	Transmit as 0, ignore on receipt
1:0	Reserved	Transmit as 0, ignore on receipt

Table 176A-3 Status field structure with modification highlighted

Bit(s)	Name	Description
15	Receiver ready	1 = Training is complete and the receiver is ready for data 0 = Request for training to continue
14	One	Transmit as 1
13	Reserved	Transmit as 0, ignore on receipt
12:10	Modulation and precoding status	9 8 7 1 1 1 = PAM4 free-running PRBS31 with precoding 1 0 1 = Reserved 1 1 0 = PAM4 free-running PRBS13 with precoding 1 0 0 = PAM4 PRBS13 0 1 1 = PAM4 free-running PRBS31 0 1 0 = PAM4 free-running PRBS13 0 0 1 = PAM2 free-running PRBS31 0 0 0 = PAM2 PRBS13
9	Receiver frame lock	1 = Frame boundaries identified 0 = Frame boundaries not identified
8	Reserved	Transmit as 0, ignore on receipt
7	Parity	Even parity bit
6	Extended Training (RTS)	1 = No data is available, continue training 0 = Switch to data when training is completed
5:3	Reserved	Transmit as 0, ignore on receipt
2:0	Reserved	Transmit as 0, ignore on receipt