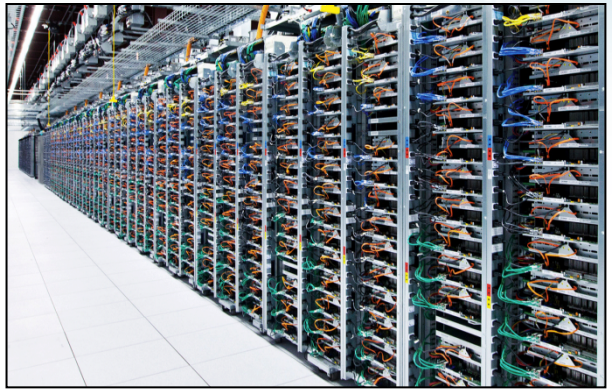
Proposed change to 400GBASE-SR4.2 specification



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Background

- Breakout from 400GBASE-SR4.2 to 100G BiDi is an important consideration due to the very large and growing installed base of 100G BiDi
- Theoretical analysis of interoperation between the current 400GBASE-SR4.2 specification (Clause 150 D2.0) and the 100G BiDi specification indicates that:
  - 100G BiDi Tx connected to 400GBASE-SR4.2 Rx: interoperation is guaranteed
  - 400GBASE-SR4.2 Tx connected to 100G BiDi Rx: budget shortfall of 0.3 dB
- The explanation for this is that the 400GBASE-SR4.2 specification (Clause 150 D2.0) is based on Clause 138, whereas the 100G BiDi specification was finalized during the early stages of P802.3cd. Various changes occurred in Clause 138 towards the end of P802.3cd that resulted in a small specification discrepancy

Proposal

- A comment is planned on Clause 150 D2.0 to this effect:
  - In Table 150-7, change “Average launch power, each lane (min)” from –6.5 dBm to –6.2 dBm
  - In Table 150-7, change “Outer Optical Modulation Amplitude (OMA_{outer}), each lane (min)” from –4.5 dBm to –4.2 dBm
  - In Table 150-7, change “OMA_{outer} – TDECQ, each lane (min)” from –5.9 dBm to –5.6 dBm
  - In Table 150-8, change “Average receive power, each lane (min)” from –8.5 dBm to –8.2 dBm
  - In Table 150-9, change “Power budget (for max TDECQ)” from 6.6 dB to 6.9 dB
  - In Table 150-9, add a row “Unallocated power budget” with a value of 0.3 dB for all cable types*

*From the perspective of a point-to-point link, which is the primary purpose of the clause, the 0.3 dB is unallocated

Comments

- The proposal is a Tx change only; no change to the Rx requirements is proposed
- No impact is expected to yield or cost. The proposal results in a Tx OMA (min) at TDECQ (max) of –1.1 dBm, which is less demanding than the equivalent 100G BiDi specification of –1 dBm
- The proposal has been adopted by the 400G BiDi MSA Group