



Next steps towards the PHY specification

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1. Characterization report of VCSEL vendor E
2. Link budget analysis (≤ 25 Gb/s):
 - Based on information theory
 - Assumed a XGMII encoding, frame structure, modulation scheme, FEC, optical channel, and O/E receiver model
 - Link budget for different VCSEL devices as function of **temperature**, bias **current** and **RIN**
 - Insertion loss allocation for connectors and bending directly extracted from link budget
3. Reliability assessment — “reliability constrained link budget”
 - Different VCSEL bias current results in different link budgets:
 - higher current results in higher optical power at TP2
 - higher current results in better sensitivity due higher TX bandwidths
 - higher current results in lower RIN (required max levels of RIN might not be achievable in lower currents)
 - However, higher currents will speed up the aging and will make less reliable the device
 - Contributions about reliability by VCSEL vendors are needed
4. More contributions by optical connector makers
 - EBO vs. PC comparison on relative cost (# elements, manufacturing, materials, in field reparation, manipulation, assembly constraints, etc)
 - EBO vs. PC performance: IL (Insertion Loss), RL (Return Loss), MN (Modal Noise), ...
5. Consensus on optical channel: ILs, RL, MN, min OMA @TP2, ER, RIN, OMA sens @TP3, etc
6. Baseline proposals and consensus