

LONG SHELF-LIFE ELECTRICAL INTERFACES

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Inspiration:

Serial Electrical Interface for Serial Optical Interface

10G Electrical Interface

- 10G SFP+ for 10GBASE-SR/LR/ER

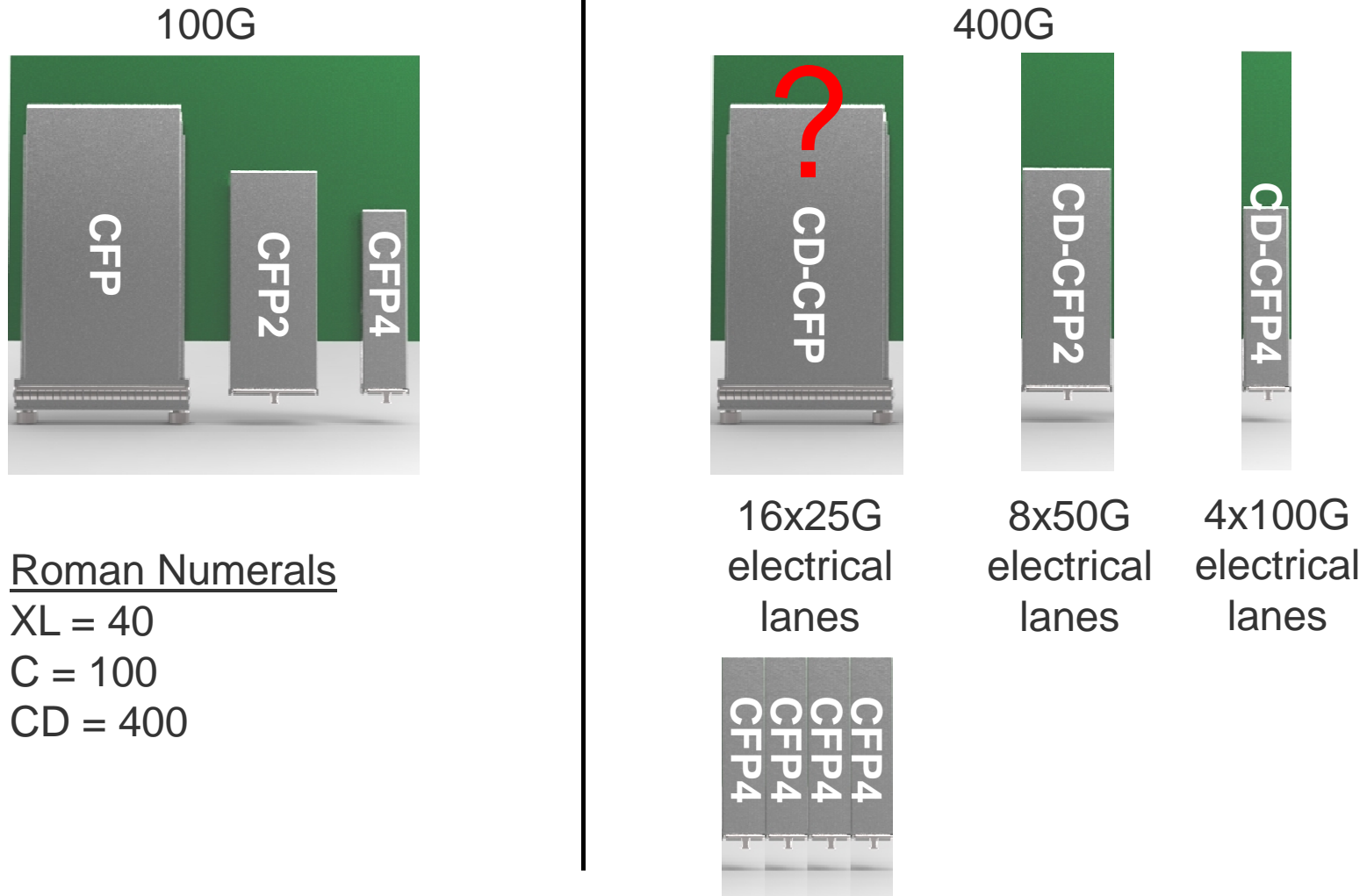
40G Electrical Interface

- 40G SFP+ for 40GBASE-FR

100G Electrical Interface

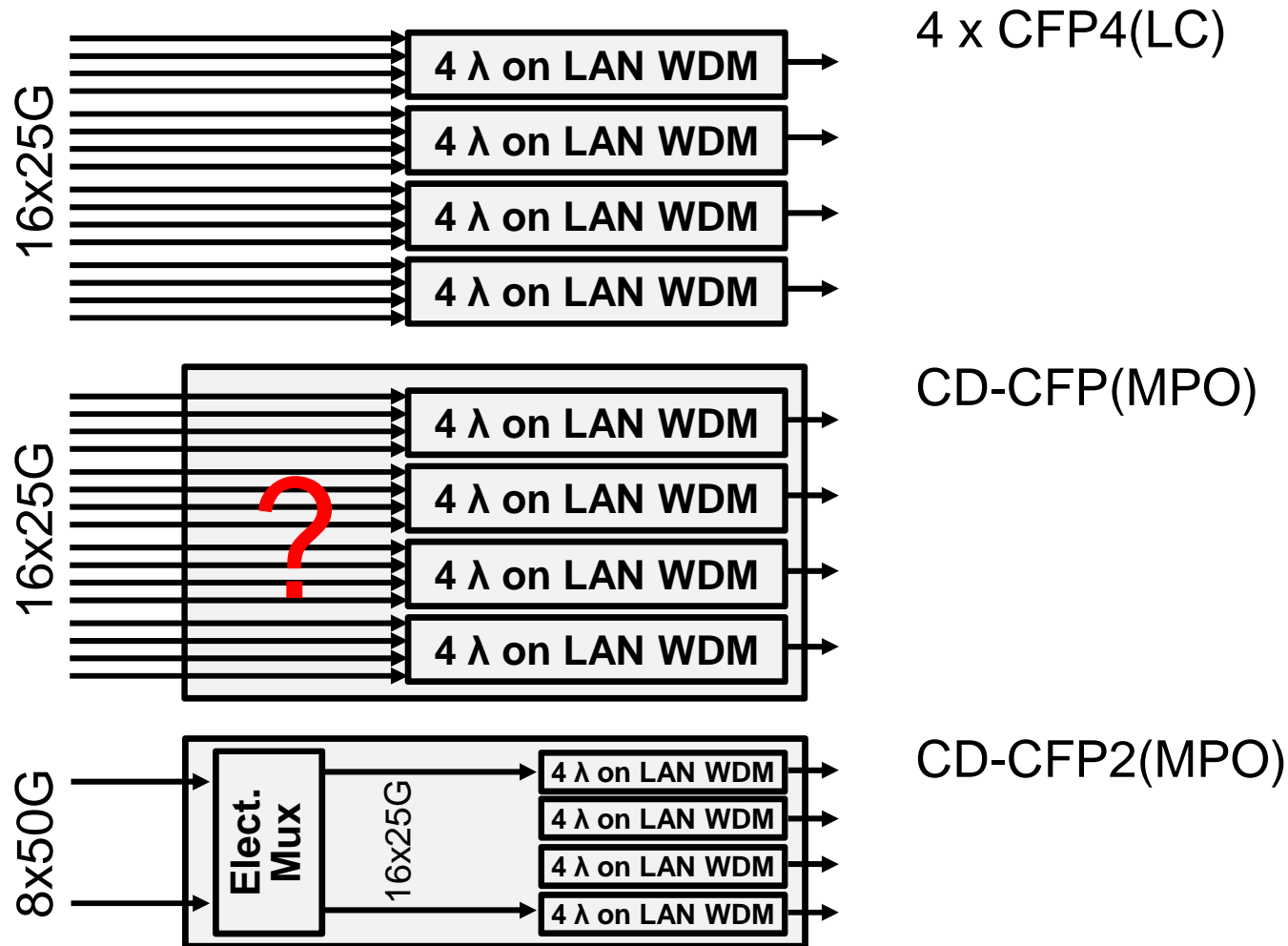
- 100G SFP+ for 100G Serial

Form Factor Evolution to 400G



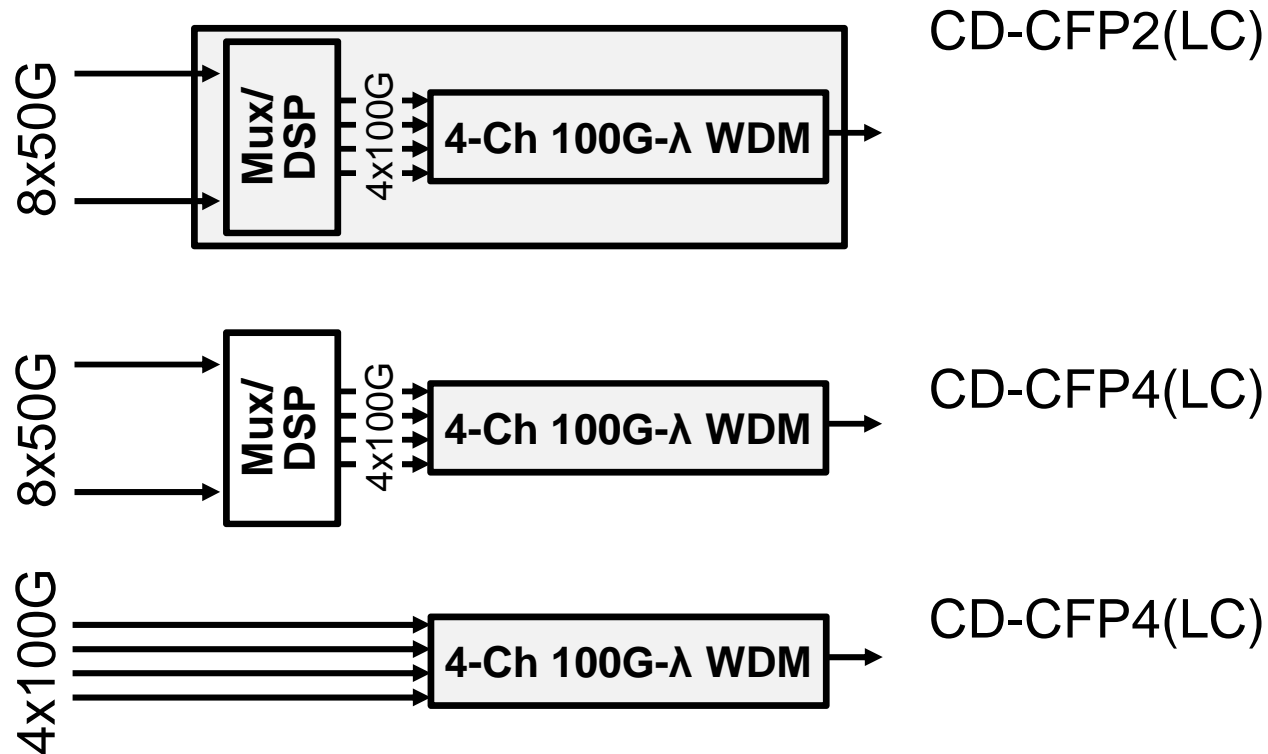
Early Adopter 400G Ethernet—Parallel Single Mode Technology Reuse: 4 x 100GBASE-LR4

Transmit side only depicted.



Long Shelf-Life 400G Ethernet—Duplex SMF 4-Ch WDM of 100G Serial Optical Lanes (100G-λ)

Transmit side only depicted.



Long Shelf-Life 100G Ethernet—Duplex SMF

100G Serial

Transmit side only depicted.



Electrical Interface Evolution

The ultimate electrical interface for a given Ethernet rate is serial

- 100G (CAUI-1)

The subsequent Ethernet rate can leverage the serial electrical interface of the previous Ethernet rate as lanes for a long shelf-life electrical interface

- 4 x 100G (CDAUI-4)

Proposed Objective

Define a 400 Gb/s MAC and PCS including any FEC that is compatible with electrical interfaces

- 16 x 25G (CDAUI-16)
- 8 x 50G (CDAUI-8)
- 4 x 100G (CDAUI-4)

gear boxes

- 8 x 50G to 16 x 25G
- 8 x 50G to 4 x 100G

and PMDs using 100G optical lanes

Conclusion

Objectives proposed to assure 400 Gb/s duplex single-mode fiber solutions based on 100G optical lanes are not precluded

Covered that any FEC should not preclude duplex single-mode fiber solutions based on 100G optical lanes

Long shelf-life electrical interfaces will be required that are likely not within technical feasibility at this time but should not be precluded by how the 400 Gb/s MAC and PCS is defined