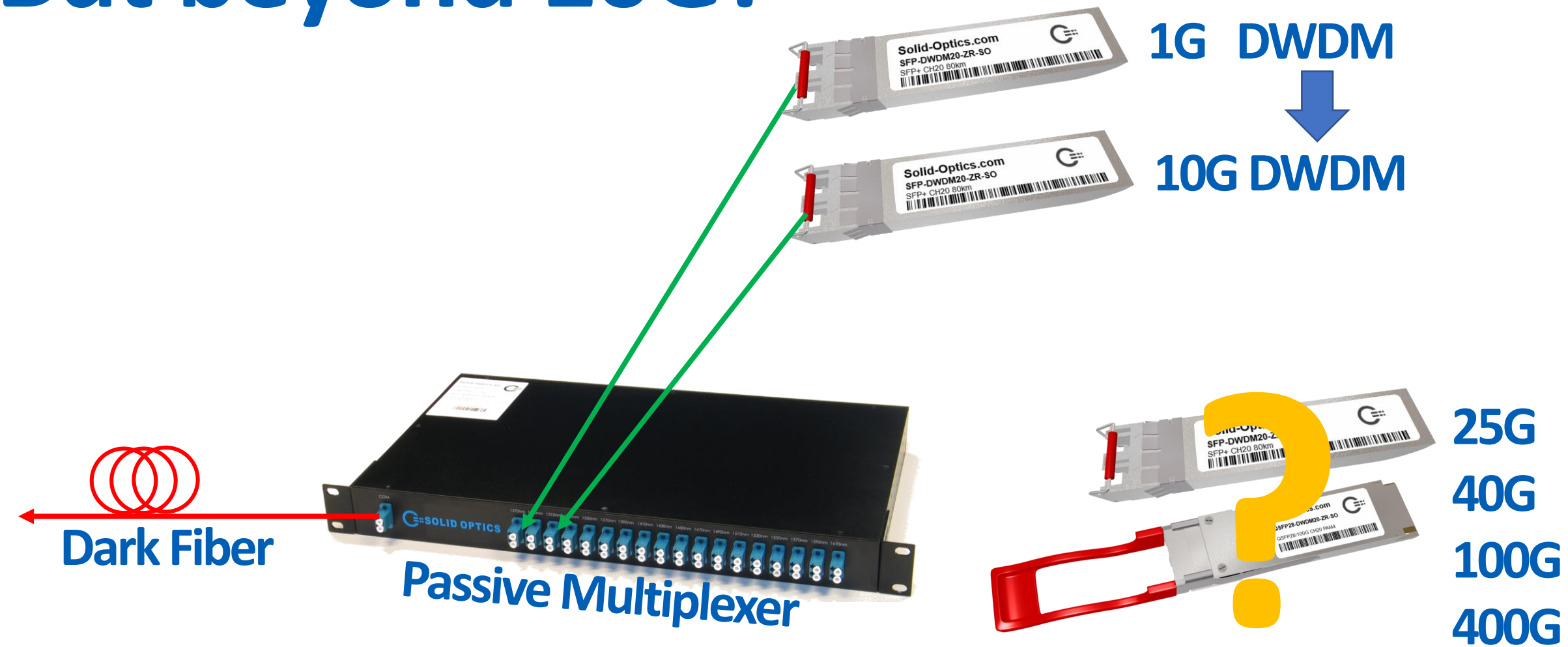
SOLID OPTICS
FIBER OPTIC MODULES

Future of passive multiplexing
&
Multiplexing beyond 10G

From 1G to 10G was easy
But beyond 10G?

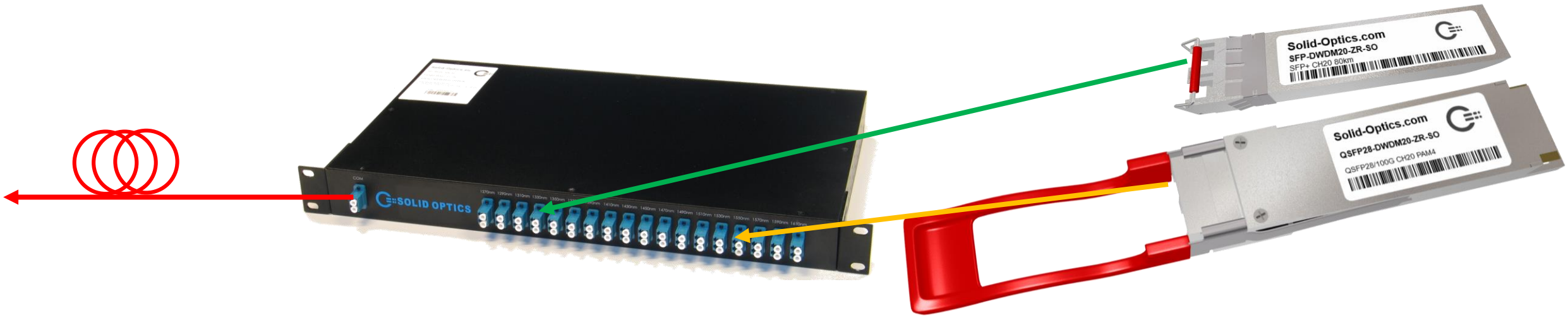


Ingredients for Multiplexing

1 Dark Fiber

2 Multiplexer

3 Light + Transceiver



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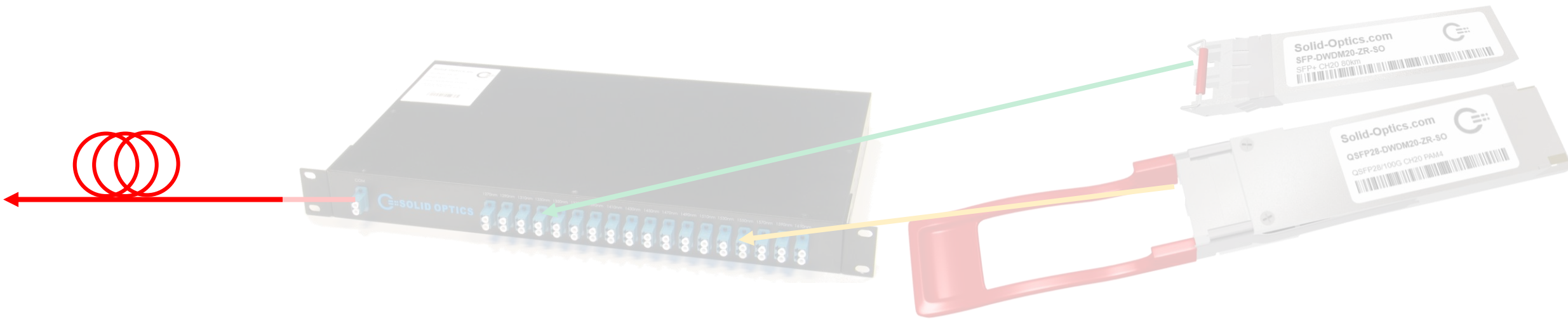
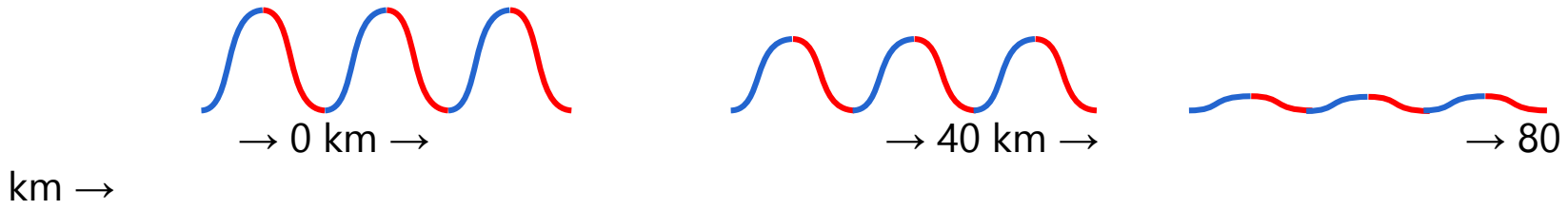
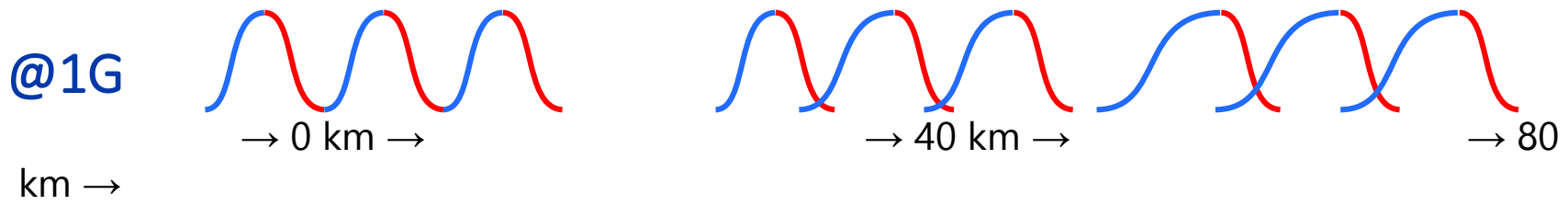


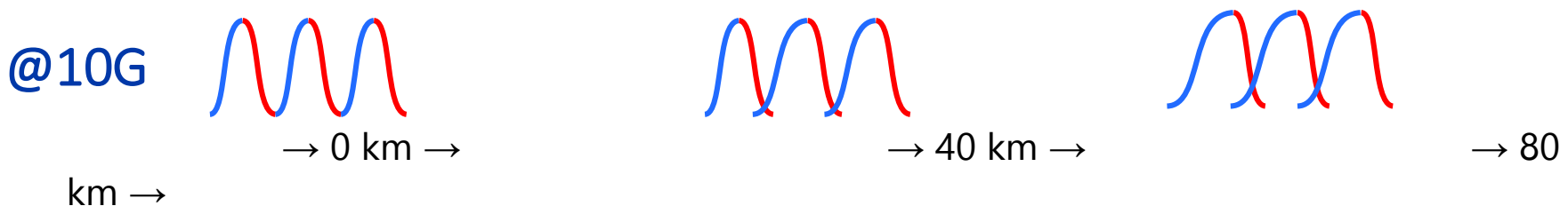
Dark Fiber

Attenuation



Dispersion

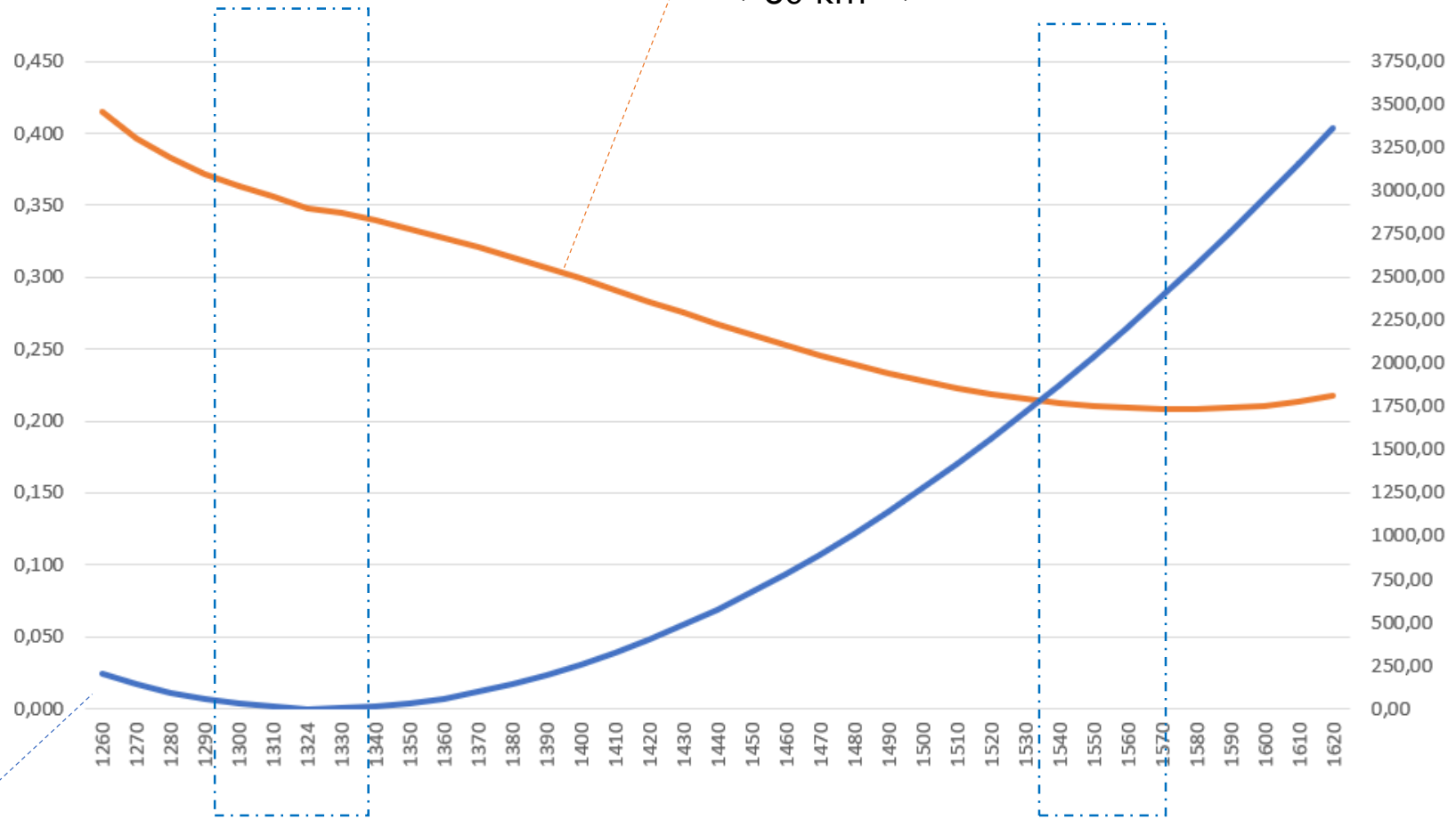




Dark Fiber

Attenuation

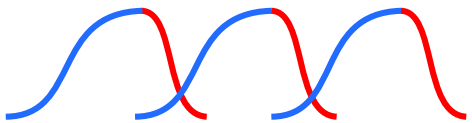
→ 80 km →



1310nm window

1550nm/DWDM

Dispersion



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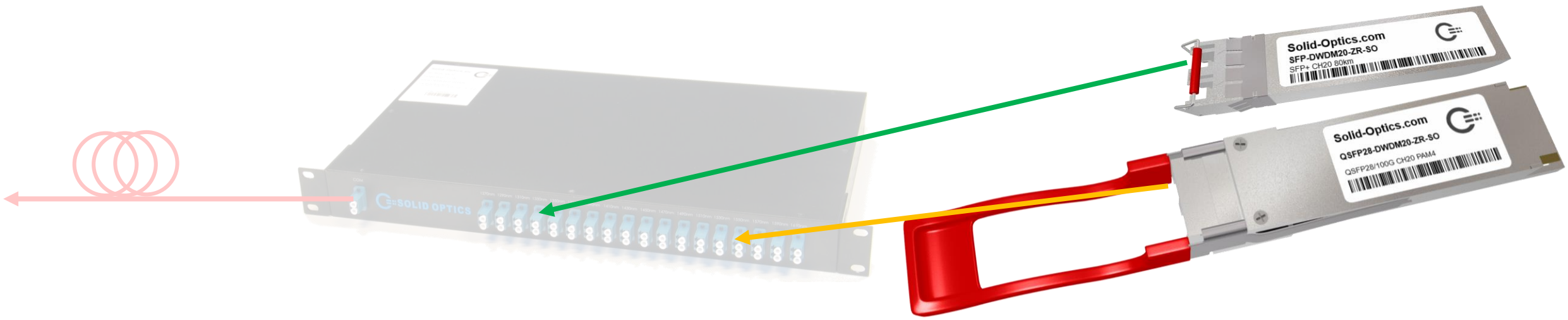
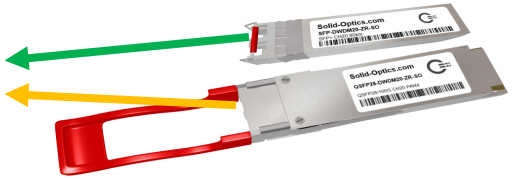
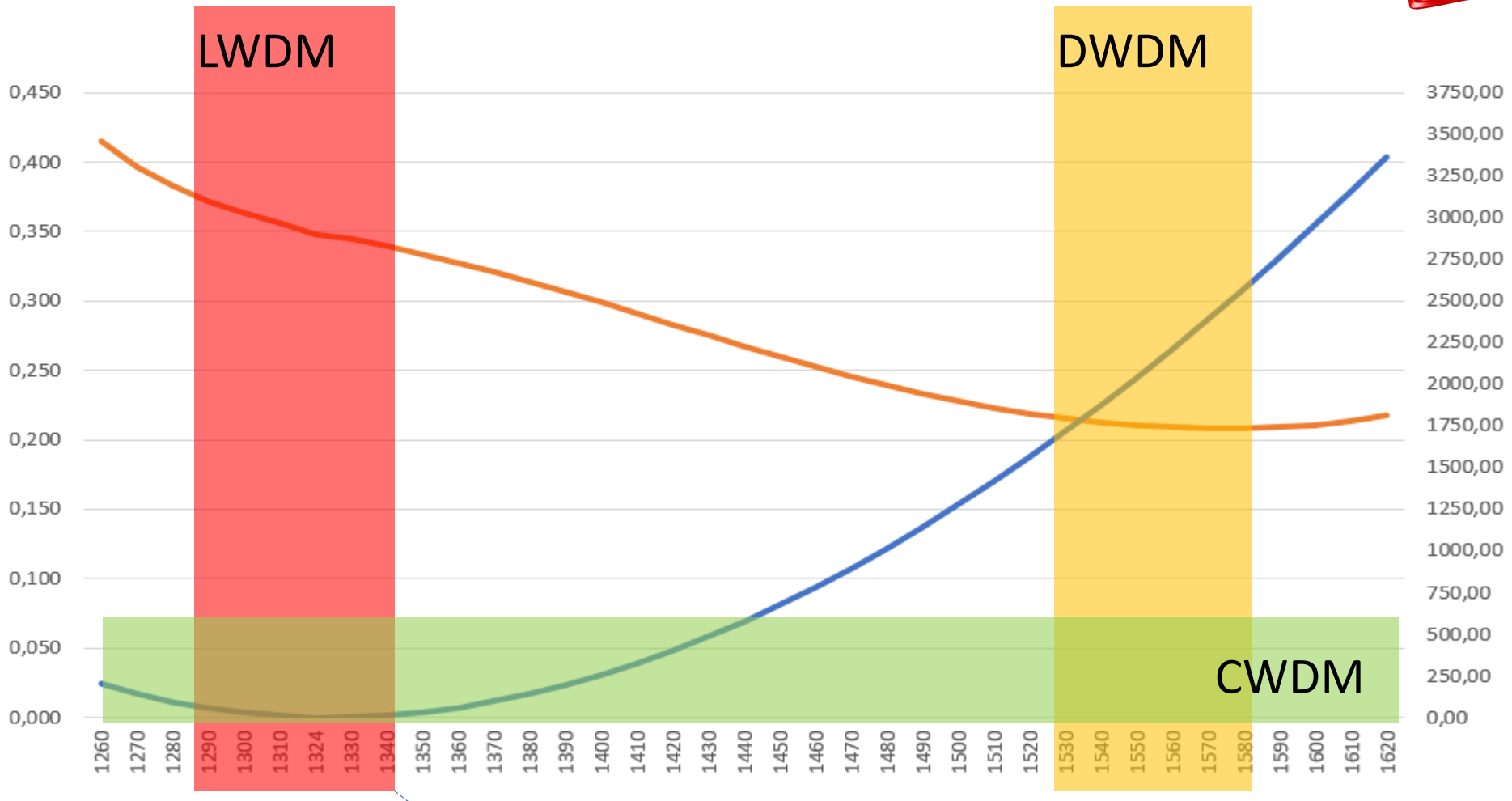


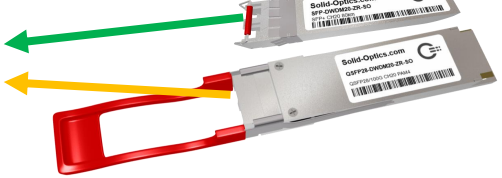
ITU grids





New ITU band

LWDM multiplexing



New ITU band

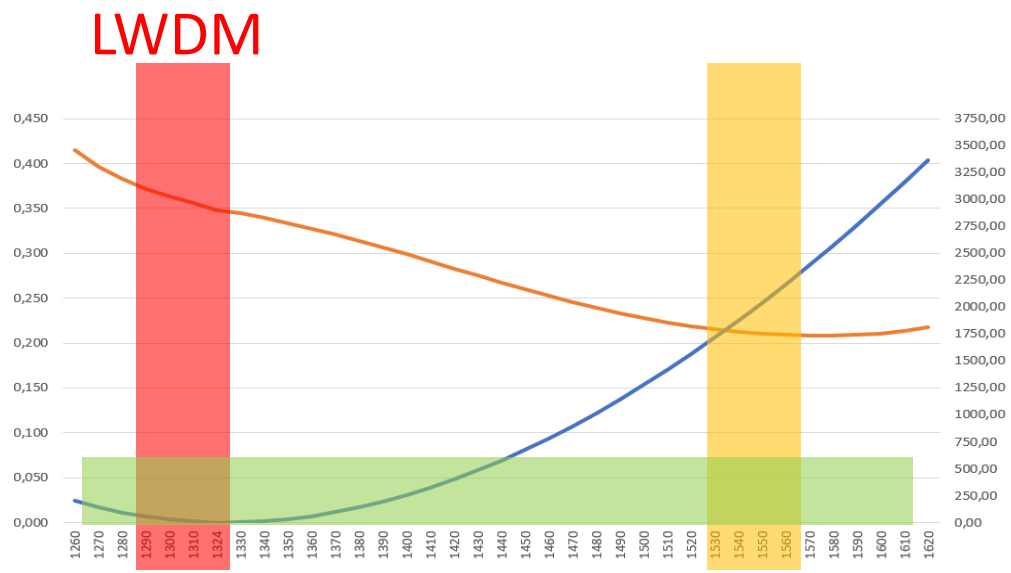
-8 channels

-8 x 25G up to 40km

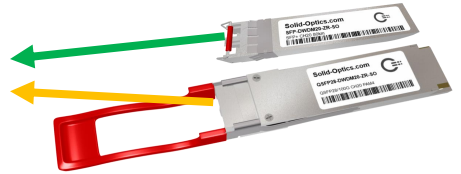
-regular optics and regular passive muxes

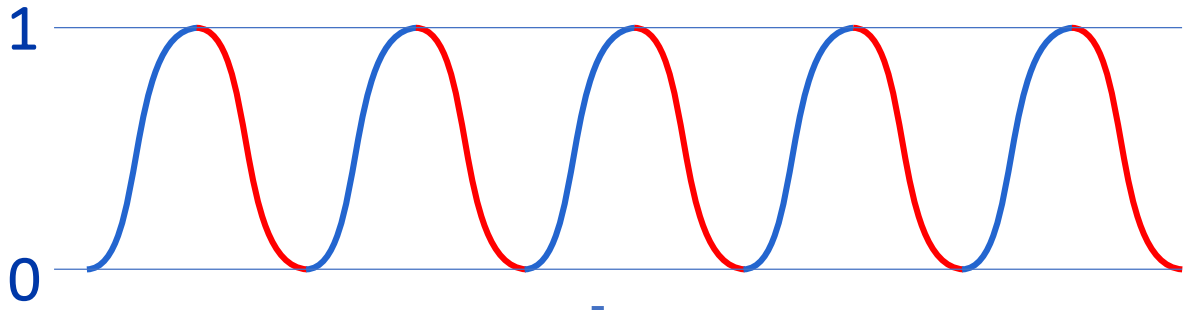
-8x 100G up to 15km(future)

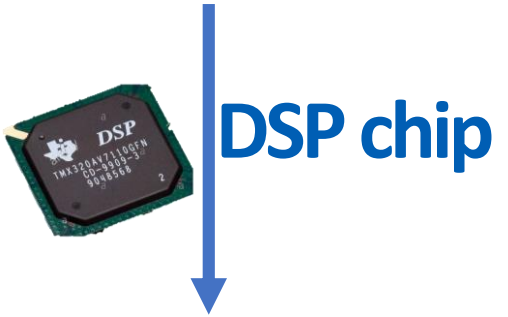
-used in Korea a lot for 5G deployment

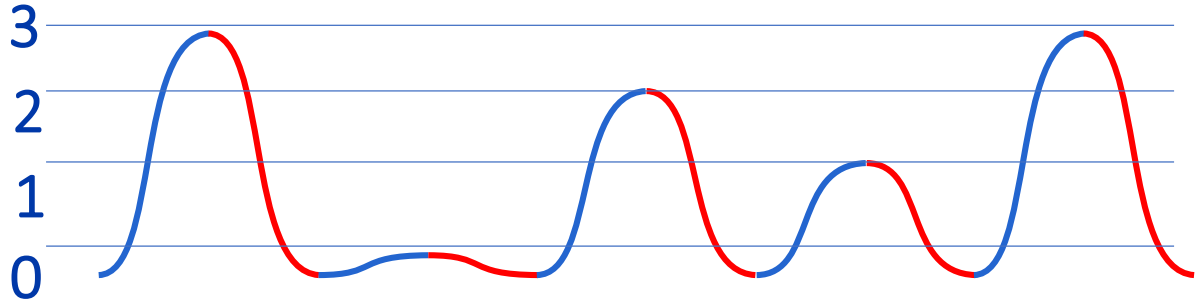


Modulation & Coherent 100G



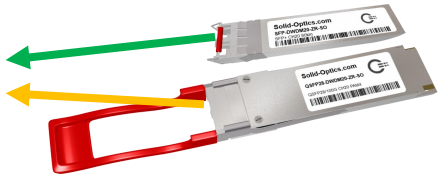






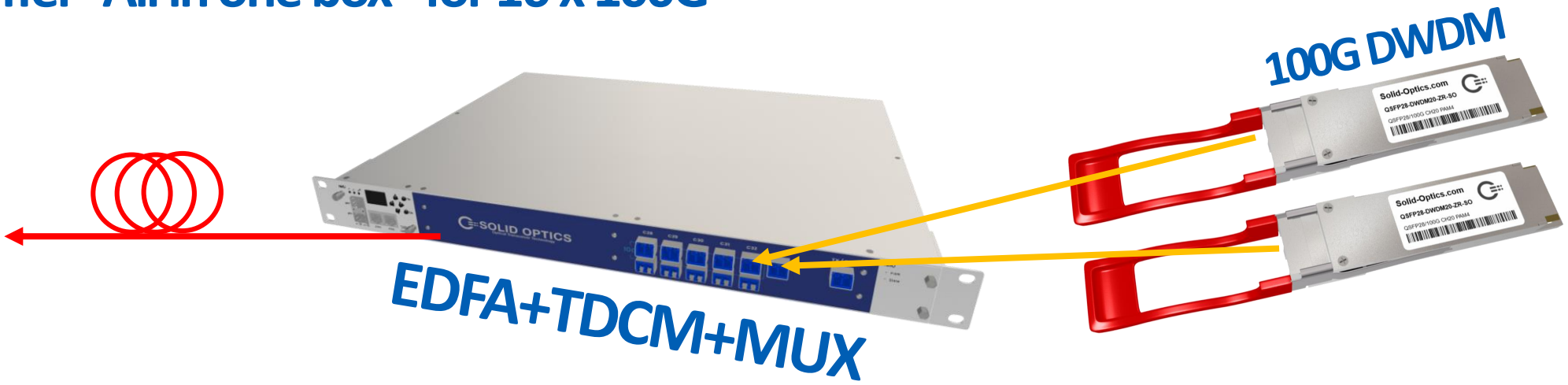
- More info per “pulse”
- Needs a lot of processing power = Watts
- Example CFP2-DCO = 20 Watts
- QSFP28 is 4,5W so cannot work
- Extra “active box” for the CFP2-DCO

QSFP28 DWDM



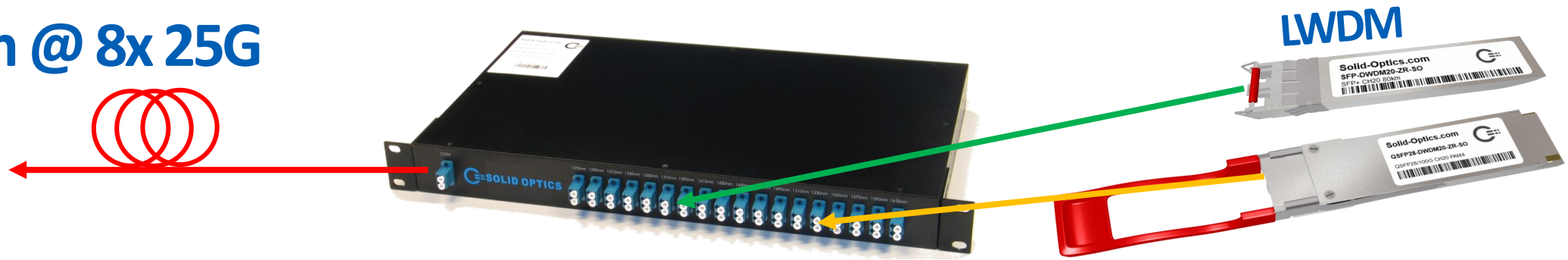
- 100G DWDM in QSFP28
- PAM4 modulation
- Need Amplification and Dispersion Comp
- Cheapest and easiest 100G Multiplexing method
- Microsoft pushed this product

Solid Optics offer “All in one box” for 16 x 100G



Summery

LWDM / 40km @ 8x 25G



QSFP28 / 80km @ 100G

CFP2-DCO / 120km @100G

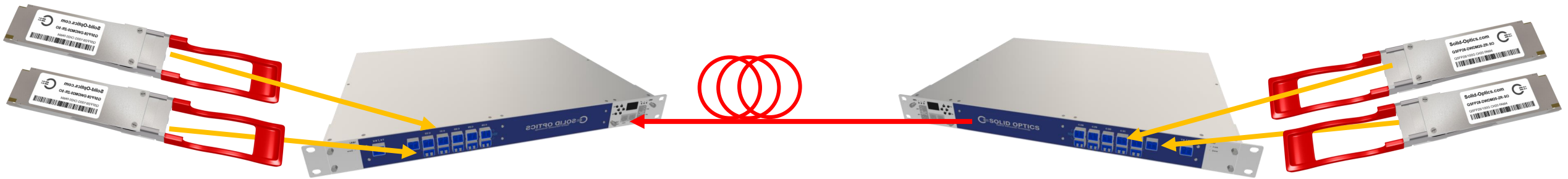
RIPE 79
Rotterdam, Netherlands
14 - 18 October, 2019

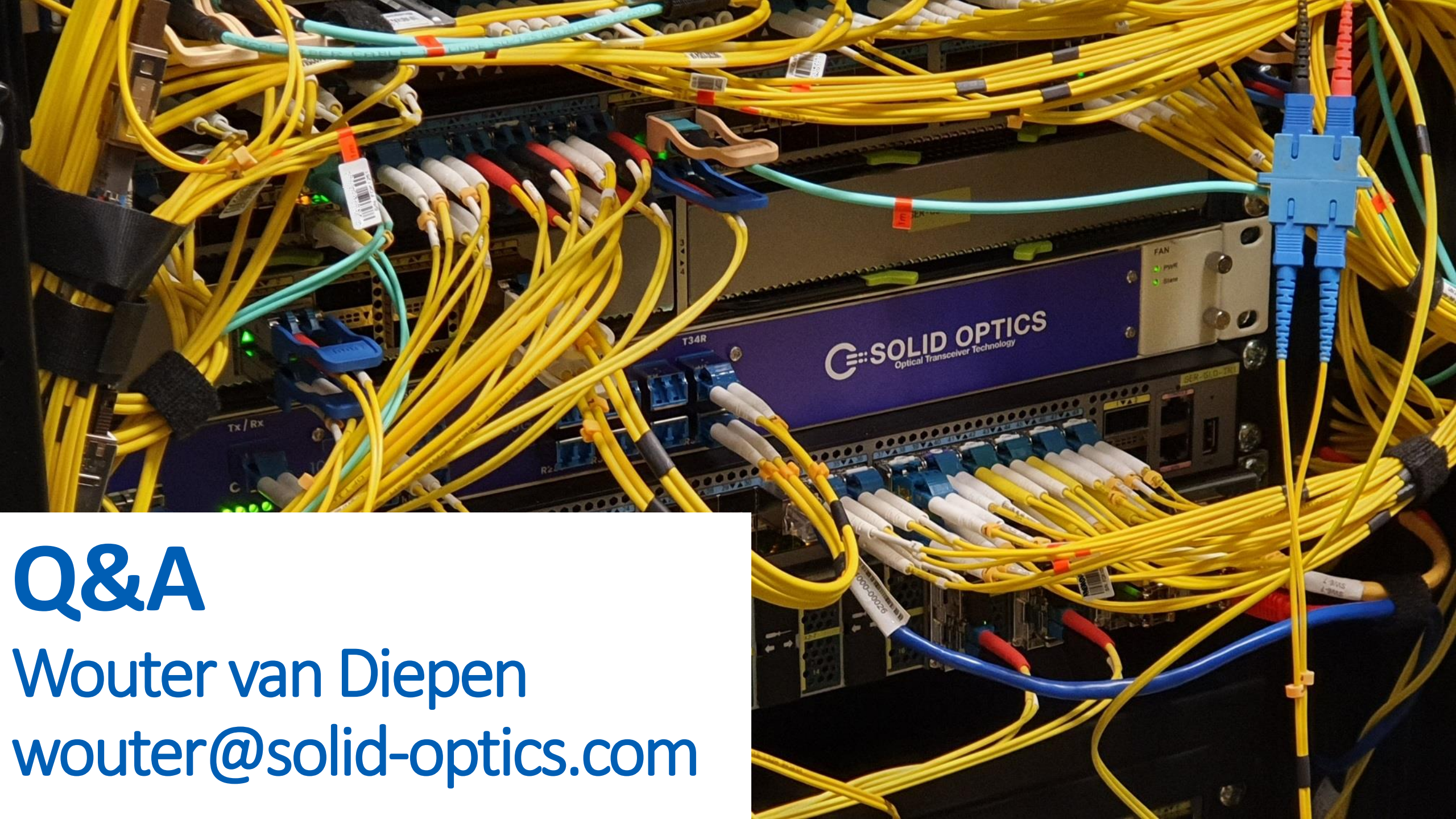
Workshop

Thursday, 17 October 18:00 - 19:00

Build 8 x 100G dark 70km fiber connection

Wouter van Diepen, Solid Optics





Q&A

Wouter van Diepen
wouter@solid-optics.com