

100G BiDi Wavelength Plan Discussion

Yuanqiu Luo
Futurewei Technologies

P802.3dk meeting, April 2023

Wavelength plan contributions

- Jan 2023 meeting
 - #1 [https://www.ieee802.org/3/dk/public/2301/3dk Johnson 2301 1.pdf](https://www.ieee802.org/3/dk/public/2301/3dk%20Johnson%202301%201.pdf)
 - #2 [https://www.ieee802.org/3/dk/public/2301/3dk Effenberger 2301 1.pdf](https://www.ieee802.org/3/dk/public/2301/3dk%20Effenberger%202301%201.pdf)
 - #3 [https://www.ieee802.org/3/dk/public/2301/3dk Mi 2301 1r1.pdf](https://www.ieee802.org/3/dk/public/2301/3dk%20Mi%202301%201r1.pdf)
- Feb 2023 meeting
 - #4 [https://www.ieee802.org/3/dk/public/2302/3dk Wey 2302 1.pdf](https://www.ieee802.org/3/dk/public/2302/3dk%20Wey%202302%201.pdf)
 - #5 [https://www.ieee802.org/3/dk/public/2302/3dk Effenberger 2302 1.pdf](https://www.ieee802.org/3/dk/public/2302/3dk%20Effenberger%202302%201.pdf)
- Mar 2023 meeting
 - #6 [https://www.ieee802.org/3/dk/public/2303/3dk Wey 2303 1r1.pdf](https://www.ieee802.org/3/dk/public/2303/3dk%20Wey%202303%201r1.pdf)
 - #7 [https://www.ieee802.org/3/dk/public/2303/3dk Jackson 2303 1.pdf](https://www.ieee802.org/3/dk/public/2303/3dk%20Jackson%202303%201.pdf)
 - #8 [https://www.ieee802.org/3/dk/public/2303/3dk Mi 2303 1.pdf](https://www.ieee802.org/3/dk/public/2303/3dk%20Mi%202303%201.pdf)
 - #9 [https://www.ieee802.org/3/dk/public/2303/3dk Effenberger 2303 1.pdf](https://www.ieee802.org/3/dk/public/2303/3dk%20Effenberger%202303%201.pdf)

Wavelength plan proposals

- There are contributions proposing single channel 800 GHz wavelength plan for 100G BiDi
 - #1, #2, #4, #6, #7, #9
- CWDM is also discussed especially for 10 km 100G BiDi
 - #8, #2

800 GHz wavelength plan

- 1304.6 nm and 1309.1 nm are in the 802.3 wavelength division multiplex lane assignment spec, references are:
 - 100GBASE-LR4 and 100GBASE-ER4 (802.3 Clause 88)
 - 200GBASE-LR4 (802.3 Clause 122)
 - 400GBASE-FR8 and 400GBASE-LR8 (802.3 Clause 122)
- 50 GBd PAM4 supports 100 Gb/s transmission

Wavelength plan straw polls

- Jan 2023

- Straw poll: I support specification of 100 Gb/s per wavelength for 10 km and 20 km objectives (1304.6 and 1309.1 nm). (13 attendees)

- Y: 4 N: 0 Need more info: 6

- Feb 2023

- Straw poll: I support specification of 100 Gb/s per wavelength for 10 km and 20 km objectives (1304.6 and 1309.1 nm). (17 attendees)

- Y: 13 N: 0 Need more info: 0

- Mar 2023

- Straw poll: I support specification of 100 Gb/s PAM4 modulation using wavelengths 1304.6 and 1309.1 for 10 km and 20 km objectives. (18 attendees)

- Y: 7 N: 3 Need more info: 4

CWDM wavelength plan

- CWDM wavelength plan for 10 km in the 802.3 spec
 - 1271 nm, 1291 nm, 1311nm, 1331 nm
 - Reference: 400GBASE-FR4 and 400GBASE-LR4-6 (802.3 Clause 151)
- 50 GBd PAM4 supports 100 Gb/s transmission
- “10km 100G BiDi could use CWDM wavelengths, 20 km 100G BiDi will need to narrow down to low dispersion wavelengths” (See Page 8 in Presentation #8)

April meeting goal

- In the past meetings, we reviewed 9 technical presentations on 100G BiDi wavelength plan
- The P802.3dk timeline is to start working on an initial draft in 2nd half of 2023
- Main topic of our April meeting is wavelength plan
- Attendees are encouraged to focus on this important topic and reach consensus