

# Baseline proposal for 800 GbE and 1.6 TbE Electrical Interfaces and PMDs using 100 Gbps/lane signaling

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# Adopted Physical Layer Objectives

This Presentation's Focus

Technology Reuse

Ethernet Rate	Assumed Signaling Rate	AUI	BP	Cu Cable	MMF 50m	MMF 100m	SMF 500m	SMF 2km	SMF 10km	SMF 40km
200 Gb/s	200 Gb/s	Over 1 lane		Over 1 pair			Over 1 Pair	Over 1 Pair		
400 Gb/s	200 Gb/s	Over 2 lanes		Over 2 pairs			Over 2 Pair			
800 Gb/s	100 Gb/s	Over 8 lanes	Over 8 lanes	Over 8 pairs	Over 8 pairs	Over 8 pairs	Over 8 pairs	Over 8 pairs		
	200 Gb/s	Over 4 lanes		Over 4 pairs			Over 4 pairs	1) Over 4 pairs 2) Over 4 $\lambda$ 's		
	TBD								Over single SMF in each direction	Over single SMF in each direction
1.6 Tb/s	100 Gb/s	Over 16 lanes								
	200 Gb/s	Over 8 lanes		Over 8 pairs			Over 8 pairs	Over 8 pairs		

Leverage existing or work-in-progress 100 Gb/s per lane (e.g. 3cu, 3ck, 3db) to higher lane counts

Develop 200 Gb/s per lane electrical signaling for 1/2/4/8 lane variants of AUIs and electrical PMDs

Develop 200 Gb/s per optical fiber for 1/2/4/8 fiber based optical PMDs and 4 lambda WDM optical PMD

Potential for either direct detect and / or coherent signaling technology

Making it all work together

[https://www.ieee802.org/3/B400G/public/21\\_1028/B400G\\_overview\\_c\\_211028.pdf](https://www.ieee802.org/3/B400G/public/21_1028/B400G_overview_c_211028.pdf)

# Key Assumptions

- #1. No significant architecture, form factor, parametric or use case changes when compared to 3ck electrical interfaces and PMDs
  - Supporting a 200 Gbps/lane FEC structure on 100 Gbps/lane electrical interfaces could impact signaling rate and will be considered later

# 800GbE (8x100) - Backplane

- Backplane
  - Align to IEEE P802.3ck D3.x Clause 163
  - With editorial license, update text, figures and tables to reflect 800GBASE-KR8 (n=8, where applicable)

# 800GbE (8x100) - AUI

- AUI C2M
  - Align to IEEE P802.3ck D3.x Annex 120G
  - With editorial license, update text, figures and tables to reflect 800GAUI-8 C2M (n=8, where applicable)
- AUI C2C
  - Align to IEEE P802.3ck D3.x Annex 120F
  - With editorial license, update text, figures and tables to reflect 800GAUI-8 C2C (n=8, where applicable)

# 800GbE (8x100) – Copper cable

- Copper cable
  - Align to IEEE P802.3ck D3.x Clause 162, Annex 162A, Annex 162B, Annex 162C, Annex 162D
  - With editorial license, update text, figures and tables to reflect 800GBASE-CR8 (n=8, where applicable)

# 1.6TbE (16x100) - AUI

- AUI C2M
  - Align to IEEE P802.3ck D3.x Annex 120G
  - With editorial license, update text, figures and tables to reflect 1.6TAUI-16 C2M (n=16, where applicable)
- AUI C2C
  - Align to IEEE P802.3ck D3.x Annex 120F
  - With editorial license, update text, figures and tables to reflect 1.6TAUI-16 C2C (n=16, where applicable)



# Other

- AN73 changes are TBD
- Updates to PMD control function are TBD

# Proposed Straw Poll

- I support the proposed direction for 800GbE and 1.6TbE electrical interfaces and PMDs using 100 Gbps/lane signaling, per lusted\_3df\_01\_220203.pdf, slides 5-8
- Y, N, A

Thanks!