

IEEE 802.3
Call for Interest
*100 Gb/s Per Lane Optical PHYs for 2 and
10 km for 100 GbE and 400 GbE*
Opening Report

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CFI Request

Ethernet has a successful track record of reusing and leveraging technology in order to enable new cost-optimized solutions for broad market adoption. Recently, both the IEEE 802.3bs and IEEE 802.3cd Ethernet projects defined optical interfaces based on 100 Gb/s PAM4 per lane optics for 500m reaches on single-mode fiber. This technology enables a lower component count implementation that can lead towards a lower cost solution.

The successful industry adoption of 100 Gb/s is resulting in higher volumes and continuing cost pressures on optical interfaces and the hyper-scale data centers, being aggressive adopters of cost-effective solutions, are looking to enable the next generation of lower cost solutions for 400 Gb/s Ethernet interfaces.

At this time, no IEEE 802.3 Ethernet specifications exist for greater than 500m reaches on single-mode fiber using this advanced technology. **This Call For Interest is a request for the formation of a Study Group to explore the potential market requirements and feasibility of extending 100 Gb/s PAM4 per lane optical technology to longer 100 Gb/s and 400 Gb/s Ethernet reaches.**

Overview: Motivation

Significant industry interest and progress has been made towards extending the existing IEEE 802.3 Optical PHYs using 100 Gb/s per lane optical technology to longer reaches.

This proposed study group would look to develop 2 km and 10 km SMF PHYs for both 100 GbE and 400 GbE

The motivation is to leverage technology to address the ongoing cost pressures on optical interconnects for a set of known and identified markets including:

Web-scale data centers

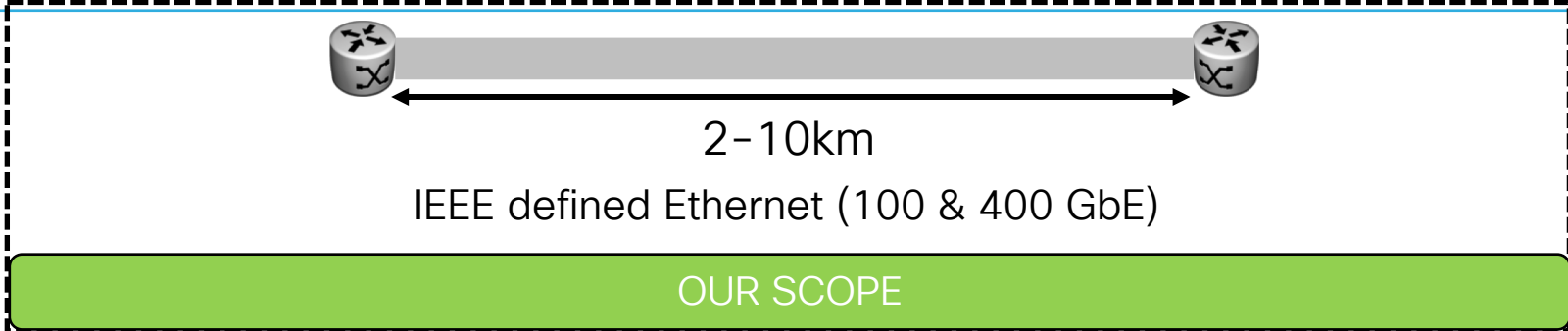
Service Provider

Enterprise data centers

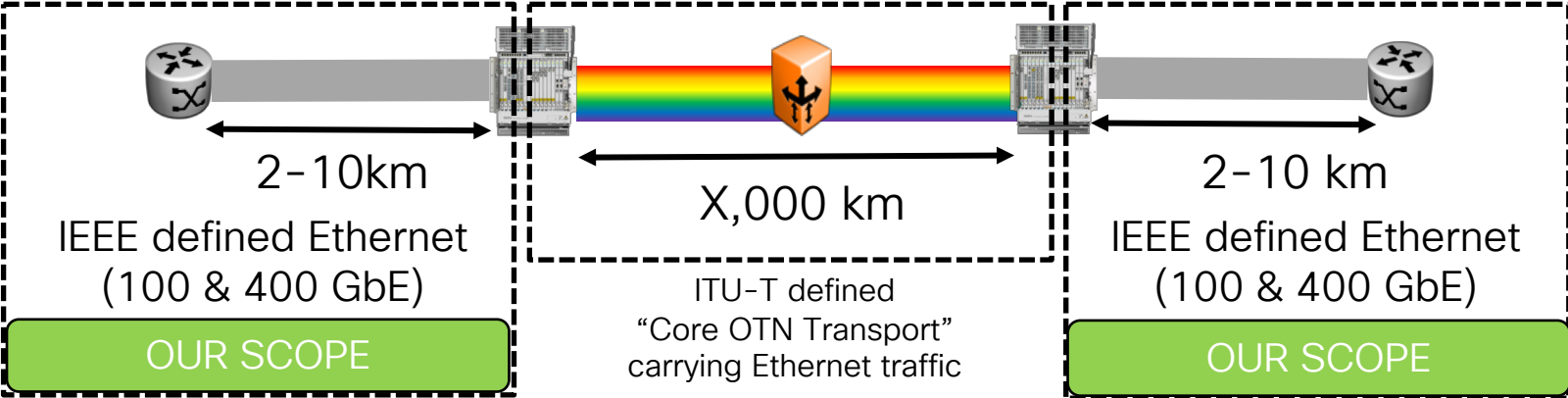
Lower cost solutions occur due to reduced lane/component count or through enabling higher density solutions.

What Are We Talking About?

Scenario #1



Scenario #2



Why Now?

- Technical developments underway already to extend 100 Gb/s per lane technology to longer reaches
- Current IEEE Ethernet solutions are not fully aligned with end user demand,
 - especially Web-scale Data Centers looking for solutions based on 100 Gb/s per lane technology
- Technical feasibility demonstrations happening
- Standardization in IEEE 802.3 brings industry convergence and extends Ethernet's solution breadth
- Target markets are:
 - Moving into high volume and therefore cost sensitive (e.g. 100 GbE)
 - Initiating early adoption that cost reduction will accelerate (e.g. 400 GbE)

Logistics

An overview presentation session will be given to support consensus building:

- Date - Tuesday, Nov 13th
- Time – 6:30 to 7:30pm
- Location – Thai Chitlada 2 - 2nd Floor
- CFI Presentation:

http://www.ieee802.org/3/cfi/request_1118_1.html

Request to form Study Group will occur during closing 802.3 WG Plenary on Thursday

Questions?

Thank you