IEEE 802.3 Closing Report
IEEE 802 July 2017 Plenary

Call-for-Interest
Beyond 10km Optical PHYs

John D'Ambrosia

Futurewei, Subsidiary of Huawei

CFI Consensus Meeting Summary

- 103 Attendees
- Presentations
  - Addressing Reaches Beyond 10km
    - John D'Ambrosia, Futurewei, Subsidiary of Huawei
  - The Technical Aspect- Beyond 10km Optical PHYs
    - David Lewis, Lumentum
    - Tom Williams, Acacia
  - Why Now?
    - John D'Ambrosia, Futurewei, Subsidiary of Huawei
- Straw Polls

Contributors

John D'Ambrosia, Futurewei, Subsidiary of Huawei

Thanks to the following individuals for their input or slides -

- Pete Anslow, Ciena
- Andrew Bach, Independent
- Steve Carlson, High Speed Design
- Frank Chang, Inphi
- Weiqiang Cheng, China Mobile
- Lu Huang, China Mobile
- Alexander Ilin, MSK-IX
- Kenneth Jackson, Sumitomo Electric Device Innovations, USA
- David Lewis, Lumentum
- Dale Murray, LightCounting
- Gary Nicholl, Cisco
- Yoshiaki Sone, NTT
- Xinyuan Wang Huawei
- Tom Williams, Acacia
- Alexander Umnov, Corning
- Xu Yu, Huawei
- Wenyu Zhao, CAICT

Thanks to IEEE 802.3 New Ethernet Applications Ad hoc for feedback

Supporters – 105 Total

- Justin Abbott, Lumentum
- Thananya Baldwin, Ixia
- Vipul Bhatt, Finisar
- Martin Bouda, Fujitsu Laboratories of America
- Patricia Bower, Socionext Europe GmbH
- Ralf-Peter Braun, DT
- Paul Brooks, Viavi Solutions
- Matt Brown, MACOM
- Li Cao, Accelink
- Steve Carlson, High Speed Design
- Derek Cassidy, ICRG
- David Chalupsky, Intel
- Frank Chang, Inphi
- Xin Chang, Huawei
- David Chen, AOI
- James Chien, ZTE
- Chris Cole, Finisar
- Doug Coleman, Corning
- John D'Ambrosia, Futurewei, Subsidiary of Huawei
- Curtis Donahue, UNH-IOL
- Mike Dudek, Cavium
- David Estes, Spirent
- Kazuhisa Furusawa, NTT
- Ali Ghiasi, Ghiasi Quantum
- Zhigang Gong, O-Net Communications
- Mark Gustlin, Xilinx
- Ruibo Han, China Mobile
- Akinori Hayakawa, Fujitsu Laboratories
- Riu Hirai, Hitachi Ltd.
- Lu Huang, China Mobile
- Mengyuan Huang, Sifotonics
- Jeff Hutchins, Ranovus
- Jonathan Ingham, Foxconn Interconnect Technology
- Kazuhiko Ishibe Anritsu
- Hideki Isono, Fujitsu Optical Components
- Tom Issenhuth, Issenhuth Consulting / Huawei
- Ken Jackson, Sumitomo Electric Device Innovators, USA
- John Johnson, Broadcom
- Yasuaki Kawatsu Appresia systems
- Nobuhiko Kikuchi, Hitachi Ltd.
- Mark Kimber, Semtech
- Jonathan King, Finisar
- Curtis Knittle, Cable Labs
- Jeff Lapak, UNH-IOL
- Greg Lecheminant, KeySight
- Hanan Leizerovich, MultiPhy
- David Lewis, Lumentum
- Jon Lewis, Dell EMC
- Junjie Li, China Telecom
- Mike Li, Intel
- Robert Lingle, OFS
- Hai-Feng Liu, Jntel
- Samuel Liu, Nokia
- Scott Kipp, Brocade
- Jeff Maki, Juniper
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- Tom McDermott, Fujitsu Network Communications
- Greg McSorley, Amphenol
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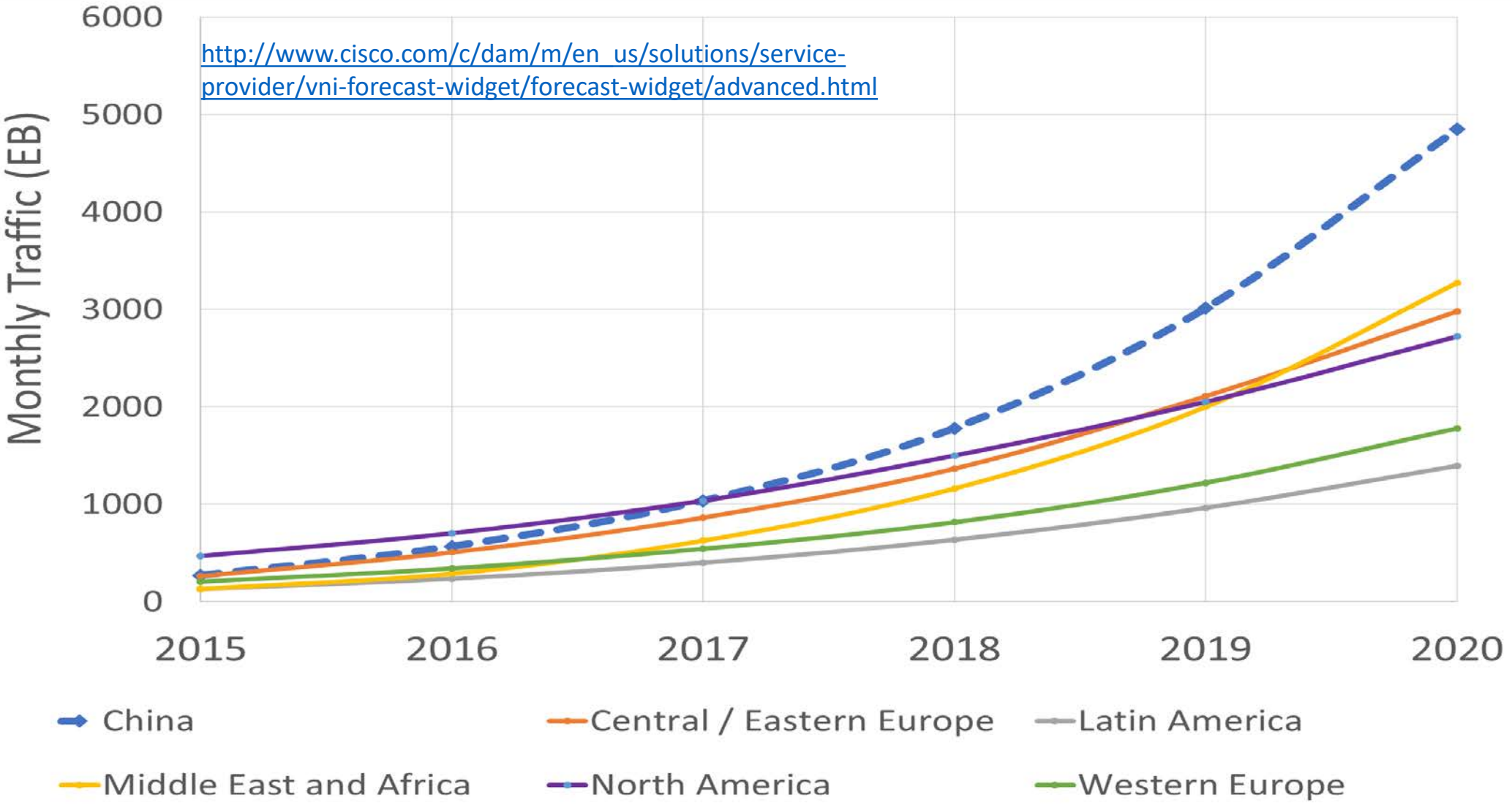
- Christophe Metivier, Arista
- Dale Murray, LightCounting
- Gary Nicholl, Cisco
- Paul Nikolich, Independent
- Mark Nowell, Cisco
- David Ofelt, Juniper
- Tom Palkert, Molex
- Earl Parsons, Commscope
- Vasu Parthasarathy, Broadcom
- Gerry Pepper, Ixia
- David Piehler, Dell EMC
- Dino Pozzebon, Microsemi
- Rick Rabinovich, IXIA
- Stefan Rochus, Broadcom
- Salvatore Rotolo, ST Microelectronics
- Ed Sayre, Teraspeed, a Division of Samtec
- Mizuki Shirao, Mitsubishi
- Kapil Shrikhande, Innovium
- Scott Sommers, Molex
- Yoshiaki Sone, NTT
- Ted Sprague, Infinera
- Rob Stone, Broadcom
- Phil Sun, Credo Semiconductor
- Steve Swanson, Corning
- Akio Tajima NEC
- Tomoo Takahara, Fujitsu Laboratories
- Kohichi Tamura, Oclaro
- Brian Teipen, ADVA Optical
- Nathan Tracy, TE Connectivity
- Matt Traverso, Cisco
- David Tremblay, HPE
- Ed Ulrichs, Source Photonics
- Alexander Umnov, Corning
- Haijun Wang, China Unicom
- Xinyuan Wang, Huawei
- Winston Way, NeoPhotonics
- Markus Weber, Acacia
- Brian Welch, Luxtera
- Tom Williams, Acacia
- Qing Xu, Belden
- Yu Xu, Huawei
- Ryan Yu, Oplink Communication
- Wenyu Zhao, CAICT
- Huanlin Zhang, AOI
- George Zimmerman, CME Consulting
- Pavel Zivny Tektronix

Mobile Networks - Consumer Video



Why Now?

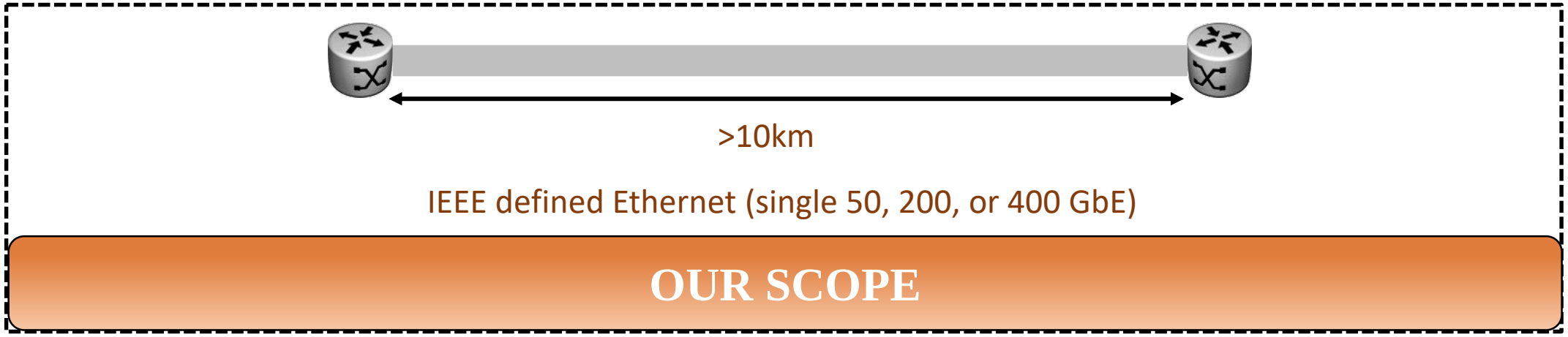
- Applications for Beyond 10km Optical PHYs
  - Everywhere - ≈3M units shipped annually addressing 40+km
  - Example application spaces –
    - Mobile Networks in China illustrate the impact of consumer video
    - Other “geographically challenged” reaches highlighted– Financial, Metro
    - Emerging future bandwidth growth driver- Automotive
- Traffic is growing everywhere
  - More users
  - More ways to access the internet faster
  - Higher bandwidth content
  - New applications enabled
  - And it goes on
- No optical Ethernet solutions for Beyond 10km for 50GbE, 200GbE, and 400GbE

Straw Poll Results

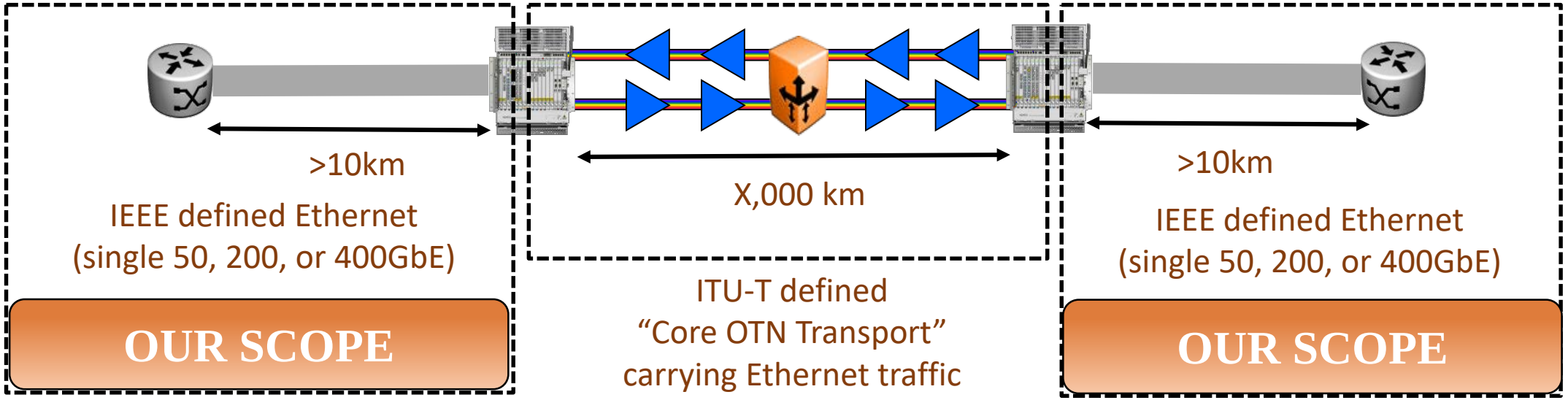
- Room Count – 103
- Should a Study Group be formed to consider Beyond 10km Optical PHYs for 50GbE, 200GbE, and 400GbE?
  - **Results: Y: 82 N: 0 A: 16**
- I would participate in the “Beyond 10km Optical PHYs” Study Group in IEEE 802.3.
  - **Results: 57**
- My company would support participation in the “Beyond 10km Optical PHYs” Study Group in IEEE 802.3
  - **Results: 39**

What Are We Talking About?

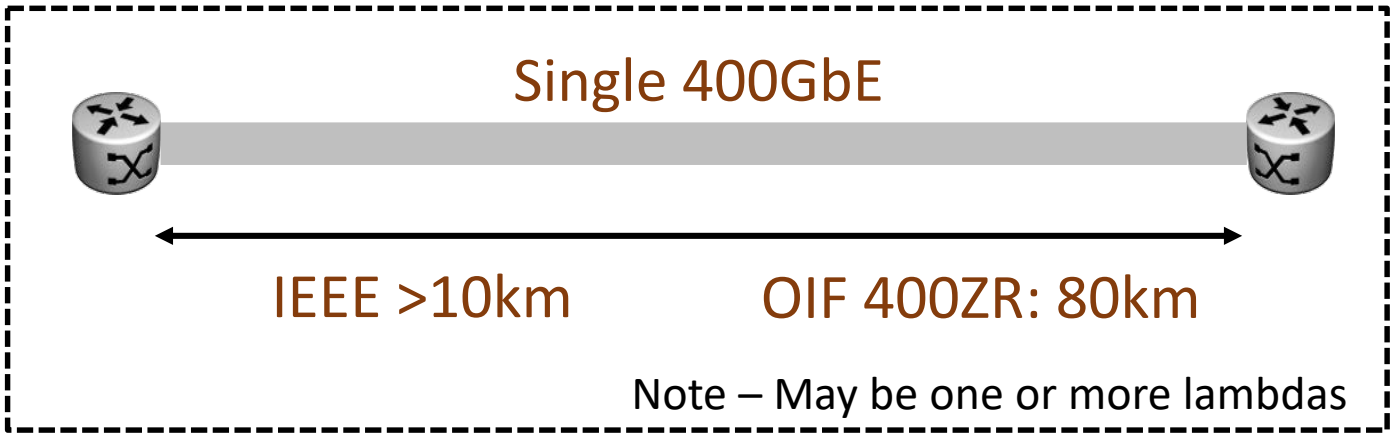
Scenario #1

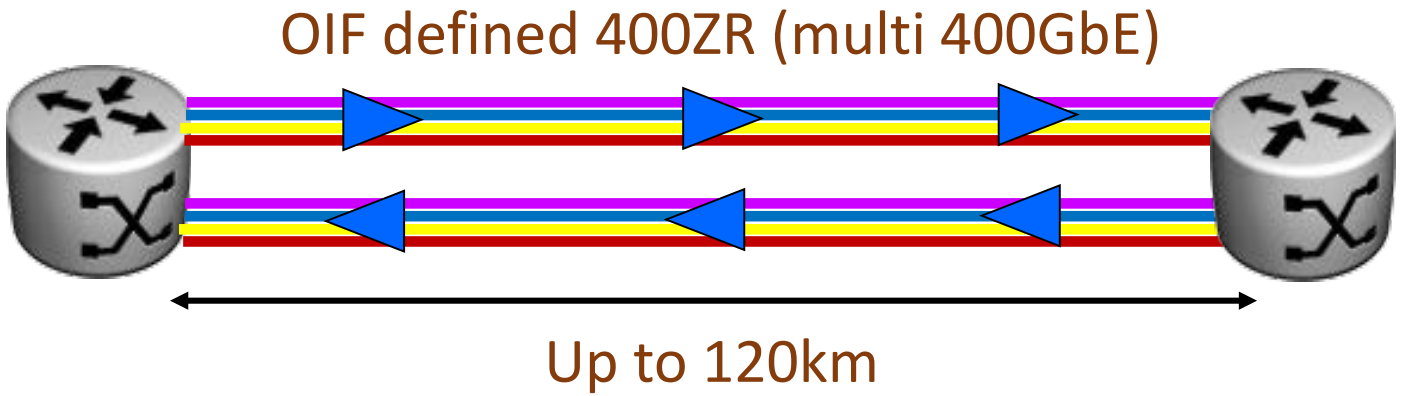


Scenario #2



400GbE and Potential Relationship to OIF 400ZR Data Center Interconnect (DCI) Solution





- **Coherent Optics is one potential solution to achieving reaches beyond 10km for 400GbE.**
- **It is not within the proposed scope of this effort to do a multi 400GbE coherent optical solution.**
- **It is recognized that a coherent solution developed by either organization could be leveraged for both application spaces.**

WG Motion

- Move that the IEEE 802.3 Ethernet Working Group authorizes the formation of a study group to develop a Project Authorization Request (PAR) and Criteria for Standards Development (CSD) responses for "Beyond 10km Optical PHYs for 50 Gb/s, 200 Gb/s, and 400 Gb/s Ethernet"

- M: John D'Ambrosia
- S: Mark Nowell
- >50%
- 802.3 Voters: Y: N: A:
- Motion

WG Motion

- Move that the IEEE 802.3 Working Group approve:
  - IEEE_802d3_to_OIF_B10k_0717_draft
  - IEEE_802d3_to_SG15_B10k_0717_draft
  - with editorial license granted to the Chair (or his appointed agent) as liaison communications from the IEEE 802.3 Working Group to OIF and ITU-T Study Group 15 subject to approval of the formation of the “Beyond 10km Optical PHYs for 50 Gb/s, 200 Gb/s, and 400 Gb/s Ethernet” Study Group by the IEEE 802 EC.

- Moved by: John D’Ambrosia
- Second by: Pete Anslow
- Procedural (>50%)
- Results y/n/a