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 Chalupsy, 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
- Rui Hirai, Hitachi Ltd.
- Lu Huang, China Mobile
- Mengyuan Huang, Sifotonics
- Jeff Hutchins, Ranovus
- Jonathan Ingham, Foxconn Interconnect Technology
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- 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, Intel
- Samuel Liu, Nokia
- Scott Kipp, Brocade
- Jeff Maki, Juniper
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- Tom McDermott, Fujitsu Network Communications
- Greg McSorley, Amphenol
- Rich Mellitz, Samtec
- 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 Parthasarthathy, Broadcom
- Gerry Pepper, Ixia
- Hideki Isono, Fujitsu Optical Components
- Tom Issenhuth, Issenhuth Consulting / Huawei
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- Earl Parsons, CommScope
- Vasu Parthasarthathy, Broadcom
- Gerry Pepper, Ixia
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?

IEEE defined Ethernet (single 50, 200, or 400 GbE)

ITU-T defined "Core OTN Transport" carrying Ethernet traffic

IEEE defined Ethernet (single 50, 200, or 400 GbE)
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.

IEEE >10km \hspace{2cm} OIF 400ZR: 80km

Note – May be one or more lambdas
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