

# IEEE P802.3cd 50 Gb/s, 100 Gb/s and 200 Gb/s Ethernet Task Force Closing Report

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July 25<sup>th</sup>-28<sup>th</sup>

# IEEE P802.3cd Task Force

## Project information

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### Task Force Organization

Mark Nowell, Cisco, TF Chair

Kent Lusted, Intel, TF Recording Secretary

Matt Brown, APM, Editor-in-Chief

### Task force web and reflector information

Reflector information: <http://www.ieee802.org/3/50G/reflector.html>

Home page: <http://www.ieee802.org/3/cd/index.html>

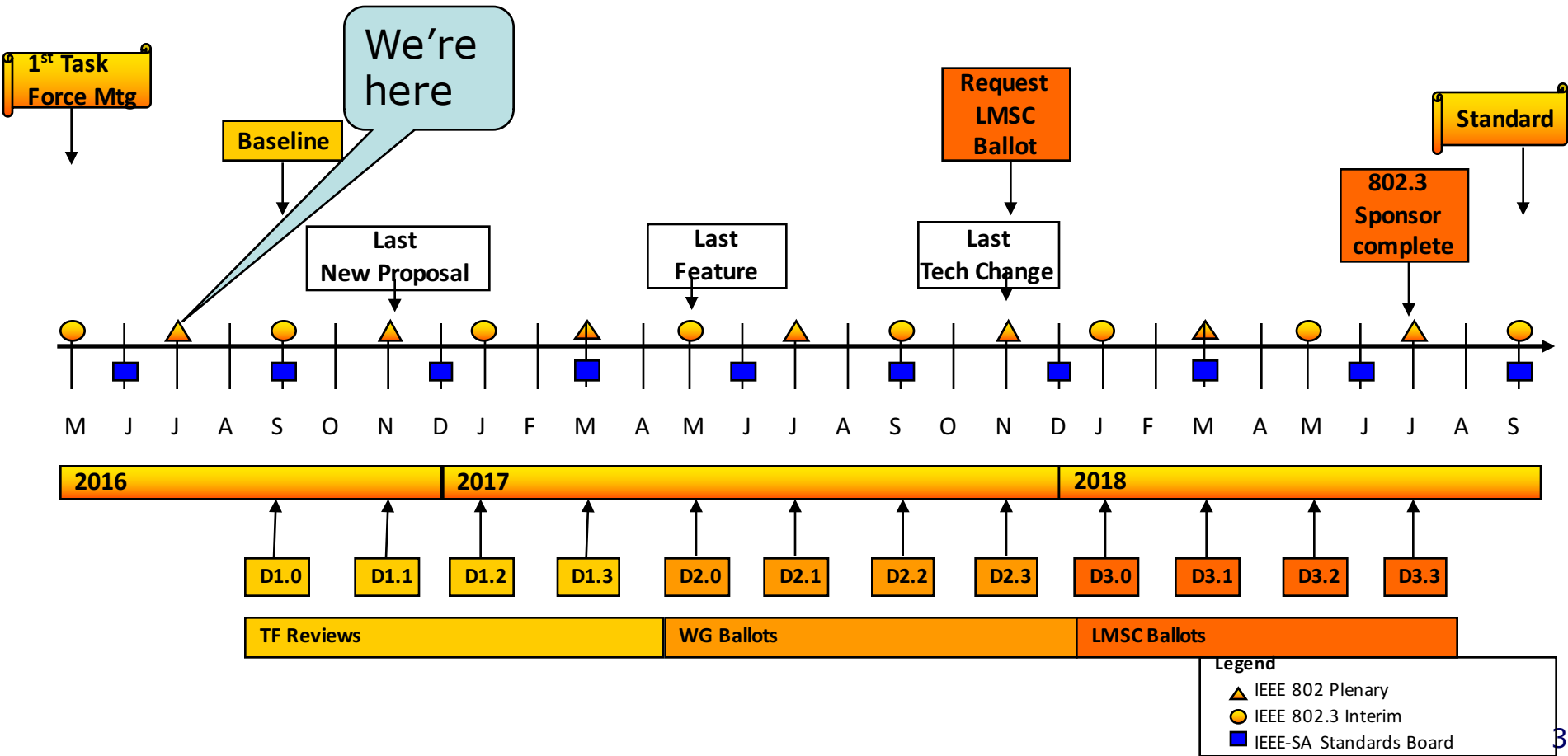
### Project Documentation

PAR: <http://www.ieee802.org/3/cd/P802.3cd.pdf>

CSD: <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0060-00-ACSD-802-3cd.pdf>

Objectives: [http://www.ieee802.org/3/cd/P802d3cd\\_objectives\\_v2.pdf](http://www.ieee802.org/3/cd/P802d3cd_objectives_v2.pdf)

# IEEE P802.3cd Task Force Adopted Timeline



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# IEEE P802.3cd Progress this week

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158 attendees

32 technical contributions were made

More Baselines were adopted:

- Updated AUI

- 50 Gb/s and 100 Gb/s RS/MII, PCS, FEC and PMA

- EEE

- Auto-Negotiation

- Copper twin-axial cable, MDI, TX/RX PCB IL, and test fixture

- PAM4 training

10 Motions and 6 Straw Polls were taken

- Timeline

- (more details later)

# Adopted Objectives (1 of 2)

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- Support full-duplex operation only
- Preserve the Ethernet frame format utilizing the Ethernet MAC
- Preserve minimum and maximum FrameSize of current IEEE 802.3 standard
- Support optional Energy-Efficient Ethernet operation
- Provide appropriate support for OTN
- Support a MAC data rate of 50 Gb/s and 100 Gb/s
- Support a BER of better than or equal to  $10^{-12}$  at the MAC/PLS service interface (or the frame loss ratio equivalent) for 50 Gb/s and 100 Gb/s operation
- Support a MAC data rate of 200 Gb/s
- Support a BER of better than or equal to  $10^{-13}$  at the MAC/PLS service interface (or the frame loss ratio equivalent) for 200 Gb/s operation

# Adopted Objectives (2 of 2)

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## 50 Gb/s Ethernet PHYs

**\*\* new in May 2016**

Define single-lane 50 Gb/s PHYs for operation over  
copper twin-axial cables with lengths up to at least 3m.  
printed circuit board backplane with a total channel insertion loss of  $\leq 30$ dB at 13.28125 GHz.  
MMF with lengths up to at least 100m  
SMF with lengths up to at least 2km  
SMF with lengths up to at least 10km

## 100 Gb/s Ethernet PHYs

Define a two-lane 100 Gb/s PHY for operation over  
copper twin-axial cables with lengths up to at least 3m.  
printed circuit board backplane with a total channel insertion loss of  $\leq 30$ dB at 13.28125 GHz.  
MMF with lengths up to at least 100m  
**SMF with lengths up to at least 500m \*\***

**Define a 100 Gb/s PHY for operation over SMF with lengths up to at least 2 km \*\***

## 200 Gb/s Ethernet PHYs

Define four-lane 200 Gb/s PHYs for operation over  
copper twin-axial cables with lengths up to at least 3m.  
printed circuit board backplane with a total channel insertion loss of  $\leq 30$ dB at 13.28125 GHz.  
Define 200 Gb/s PHYs for operation over MMF with lengths up to at least 100m

# P802.3cd Project Documentation heads up

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Recently added objective: 100G SMF over 2km (May 2016)

Contributed baselines proposals:

- $2\lambda$  x 50 Gb/s (cole\_3cd\_01\_0716, stassar\_3cd\_01\_0716)
- $1\lambda$  x 100 Gb/s (lewis\_3cd\_01\_0716, traverso\_3cd\_01\_0716, palkert\_3cd\_01\_0716, maki\_3cd\_01\_0716)

Concerns raised that currently adopted CSD language assumes only 50 Gb/s lane rates for optical and electrical.

- CSD was adopted and approved in March 2016 when no 100 Gb/s SMF objectives existed
- Adoption of a baseline including the  $1\lambda$  x 100 Gb/s would result in a CSD that does not align with the baseline

# P802.3cd Project Documentation heads up (2)

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A Straw Poll was conducted to gauge the support around the different 100G 2km SMF proposals

*For the 100 Gb/s 2km SMF baseline:*

*A) I support the 1x100G proposal per lewis\_3cd\_01a\_0716.pdf*

*B) I support the 2x50G proposal per cole\_3cd\_01a\_0716.pdf*

*C) I want more information*

*A: 34 , B: 25 , C: 36*

## **Task Force Plan:**

- Request WG approval of currently adopted TF Objectives (next slide)
- Wait for the TF's baseline adoption and then address any changes to documentation with approval @ WG, EC etc. as necessary
  - Adoption of a 1 $\lambda$  x 100 Gb/s baseline in Task Force requires an updated CSD response to be adopted at the same time



# IEEE P802.3cd Updated Objectives Approval

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Move that the IEEE 802.3 Working Group approve the IEEE P802.3cd 50 Gb/s, 100 Gb/s and 200 Gb/s Ethernet Task Force objectives, as per 0716\_cd\_close\_report.pdf

M: Mark Nowell

S: Kent Lusted

Technical ( $\geq 75\%$ )

Y/N/A:

Questions?

Thank you!