



# Agenda and General Information

IEEE 802.3cd

**50 Gb/s, 100 Gb/s and 200 Gb/s Ethernet Task  
Force**

Kent Lusted, Intel

Pittsburgh, PA, USA

Week of May 20, 2018

# Agenda

- Welcome and Introductions
- Approve Agenda
- Approve Minutes
- Reflector and Web
- Ground Rules
- IEEE
  - Structure, Bylaws and Rules
  - Call for Patents
  - IEEE Standards Process
- Liaisons and Communications
- Ad hocs
- Task Force documentation
- Schedule
- Goals for this meeting
- Meeting Schedule
- Future Meetings
- Motions and Closing Business

# P802.3cd Task Force organization

- Chair: Mark Nowell, Cisco
- Recording Secretary: Kent Lusted, Intel
- Chief Editor: Matt Brown, Macom
- Ad hoc chair: Kent Lusted, Intel

# Task Force Decorum



- An officer is permitted to make an audio or slideshow recording of this meeting exclusively for the purpose of generating minutes which shall not be copied or distributed. **IEEE 802.3 meetings do not use this option.** Recording of the proceedings by any other participant or observer, in part or in whole, via any means, is prohibited. (December 2017 IEEE-SA Standards Board Ops Manual 5.3.3.2)
- Press (i.e., anyone reporting publicly on this meeting) are to announce their presence (December 2017 IEEE-SA Standards Board Ops Manual 5.3.3.3)
- Cell phone ringers off
- Wear your badges at all times in meeting areas
  - Help the hotel security staff improve the general security of the meeting rooms
  - **PCs HAVE BEEN STOLEN** at previous meetings
  - **DO NOT** assume that meeting areas are secure
- Please observe proper decorum in meetings

# Reflector and Web

- To subscribe to the Task Force's reflector, send an email to:  
**ListServ@ieee.org**  
with the following in the body of the message (do not include "<>"):  
*subscribe stds-802-3-50G <yourfirstname> <yourlastname>*  
*end*
- Send Task Force reflector messages to:  
**stds-802-3-50G@listserv.ieee.org**
- Task Force's web page URL:  
<http://www.ieee802.org/3/cd/index.html>

# Task Force Private Area

- <http://www.ieee802.org/3/cd/private/index.html>
- U: 802.3cd
- P: xxxxxx

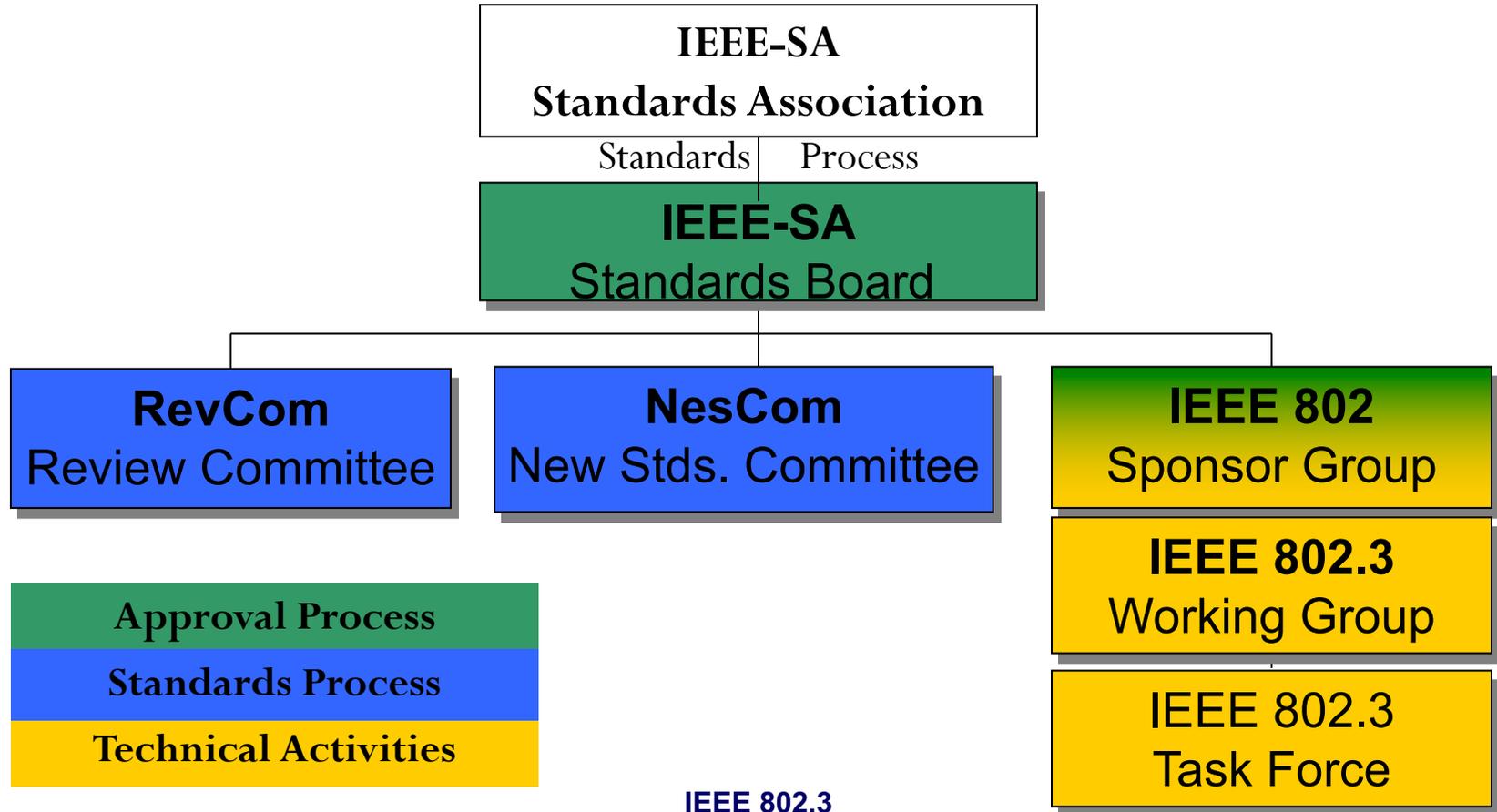
# Ground Rules

- Based upon IEEE 802.3 Rules
  - Foundation based upon Robert's Rules of Order
  - Anyone in the room may speak
  - Anyone in the room may vote
- **RESPECT**... give it, get it
- NO product pitches
- NO corporate pitches
- NO prices!!!
  - This includes costs, ASPs, etc. no matter what the currency
- NO restrictive notices

# Attendance

- Tutorial Material on attendance tool
  - [http://ieee802.org/3/minutes/attendance\\_procedures.pdf](http://ieee802.org/3/minutes/attendance_procedures.pdf)
- Access details
  - URL: <http://imat.ieee.org/>
  - Use your imat login
    - (must be on meeting SSID – no VPN)

# IEEE Structure



# Important Bylaws and Rules

- **IEEE-SA Operations Manual**  
[http://standards.ieee.org/develop/policies/sa\\_opman/](http://standards.ieee.org/develop/policies/sa_opman/)
- **IEEE-SA Standards Board Bylaws**  
<http://standards.ieee.org/develop/policies/bylaws/>
- **IEEE-SA Standards Board Operations Manual**  
<http://standards.ieee.org/develop/policies/opman/>
- **IEEE 802 LAN/MAN Standards Committee (LMSC) Policies and Procedures**  
<http://standards.ieee.org/about/sasb/audcom/pnp/LMSC.pdf>
- **IEEE 802 LAN/MAN Standards Committee (LMSC) Operations Manual**  
<http://www.ieee802.org/devdocs.shtml>
- **IEEE 802 LAN/MAN Standards Committee (LMSC) Working Group (WG) Policies and Procedures**  
<http://www.ieee802.org/devdocs.shtml>
- **IEEE 802.3 Working Group Operating Rules**  
[http://ieee802.org/3/rules/P802\\_3\\_rules.pdf](http://ieee802.org/3/rules/P802_3_rules.pdf)

# Participation in IEEE 802 Meetings

Participation in any IEEE 802 meeting (Sponsor, Sponsor subgroup, Working Group, Working Group subgroup, etc.) is on an individual basis

- Participants in the IEEE standards development individual process shall act based on their qualifications and experience. ([https://standards.ieee.org/develop/policies/bylaws/sb\\_bylaws.pdf](https://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf) section 5.2.1)
- IEEE 802 Working Group membership is by individual; “Working Group members shall participate in the consensus process in a manner consistent with their professional expert opinion as individuals, and not as organizational representatives”. (subclause 4.2.1 “Establishment”, of the IEEE 802 LMSC Working Group Policies and Procedures)
- Participants have an obligation to act and vote as an individual and not under the direction of any other individual or group. A Participant’s obligation to act and vote as an individual applies in all cases, regardless of any external commitments, agreements, contracts, or orders.
- Participants shall not direct the actions or votes of any other member of an IEEE 802 Working Group or retaliate against any other member for their actions or votes within IEEE 802 Working Group meetings, see [https://standards.ieee.org/develop/policies/bylaws/sb\\_bylaws.pdf](https://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf) section 5.2.1.3 and the IEEE 802 LMSC Working Group Policies and Procedures, subclause 3.4.1 “Chair”, list item x.

**By participating in IEEE 802 meetings, you accept these requirements. If you do not agree to these policies then you shall not participate.**

(Latest revision of IEEE 802 LMSC Working Group Policies and Procedures: <http://www.ieee802.org/devdocs.shtml>)

## Participants have a duty to inform the IEEE

- Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
- Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims

**Early identification of holders of potential Essential Patent Claims is encouraged**

# Ways to inform IEEE

- Cause an LOA to be submitted to the IEEE-SA (patcom@ieee.org); or
- Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or

- **Speak up now and respond to this Call for Potentially Essential Patents**

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair

# Other guidelines for IEEE WG meetings

- All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.
  - Don't discuss the interpretation, validity, or essentiality of patents/patent claims.
  - Don't discuss specific license rates, terms, or conditions.
    - Relative costs of different technical approaches that include relative costs of patent licensing terms may be discussed in standards development meetings.
      - **Technical considerations remain the primary focus**
  - Don't discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.
  - Don't discuss the status or substance of ongoing or threatened litigation.
  - Don't be silent if inappropriate topics are discussed ... do formally object.

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For more details, see *IEEE-SA Standards Board Operations Manual*, clause 5.3.10 and  
*Antitrust and Competition Policy: What You Need to Know* at  
<http://standards.ieee.org/develop/policies/antitrust.pdf>

# Patent-related information

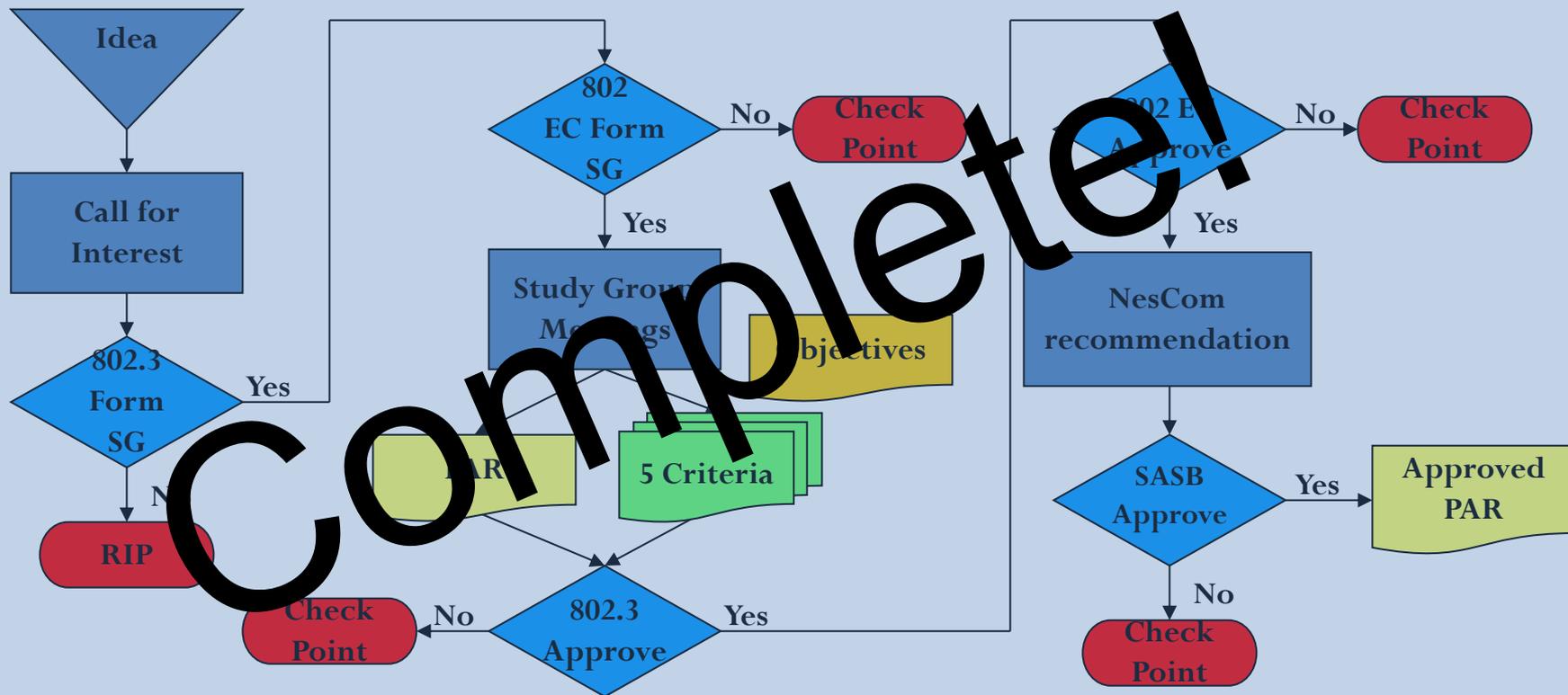
The patent policy and the procedures used to execute that policy are documented in the:

- *IEEE-SA Standards Board Bylaws*  
(<http://standards.ieee.org/develop/policies/bylaws/sect6-7.html#6>)
- *IEEE-SA Standards Board Operations Manual*  
(<http://standards.ieee.org/develop/policies/opman/sect6.html#6.3>)

Material about the patent policy is available at  
<http://standards.ieee.org/about/sasb/patcom/materials.html>

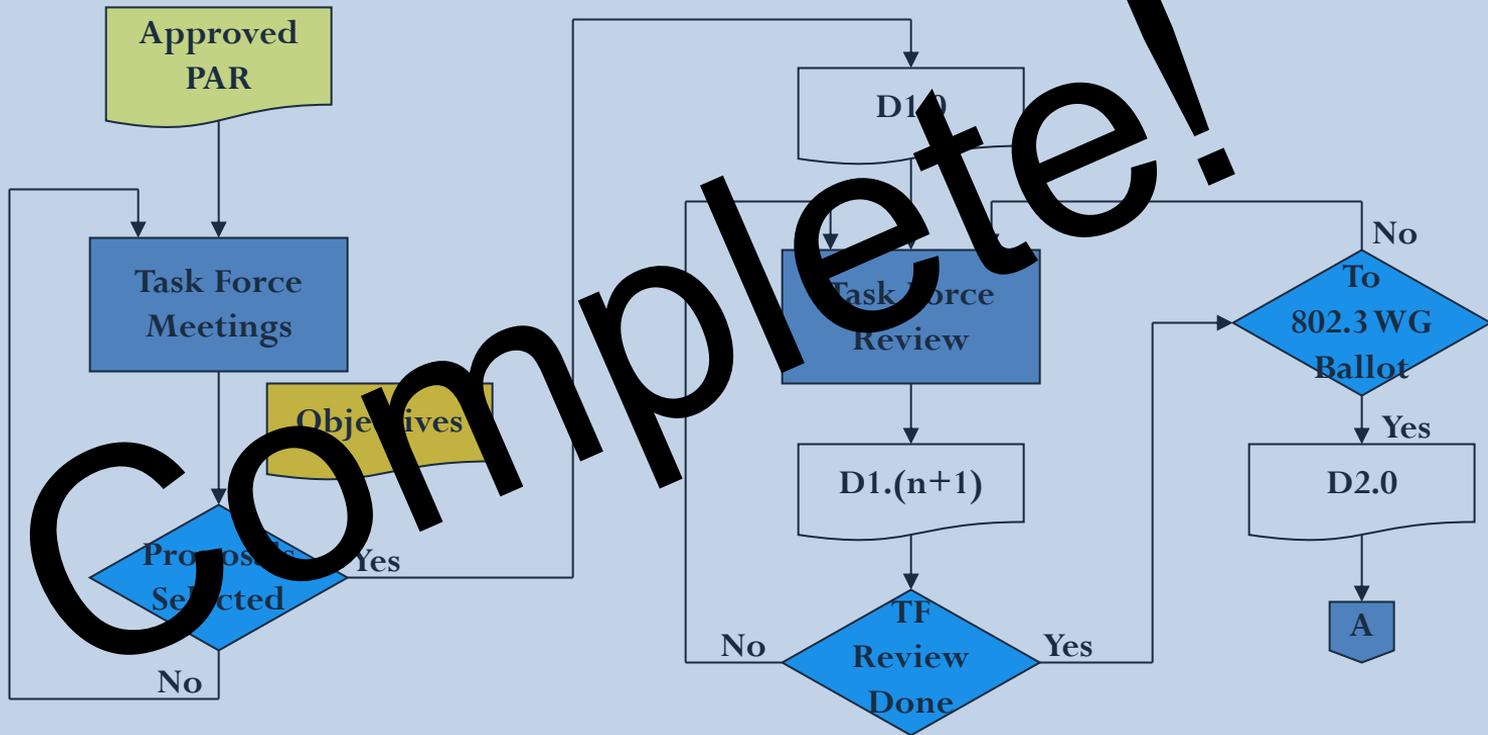
**If you have questions, contact the IEEE-SA  
Standards Board Patent Committee  
Administrator at [patcom@ieee.org](mailto:patcom@ieee.org)**

# Overview of IEEE 802.3 Standards Process (1/5)- Study Group Phase

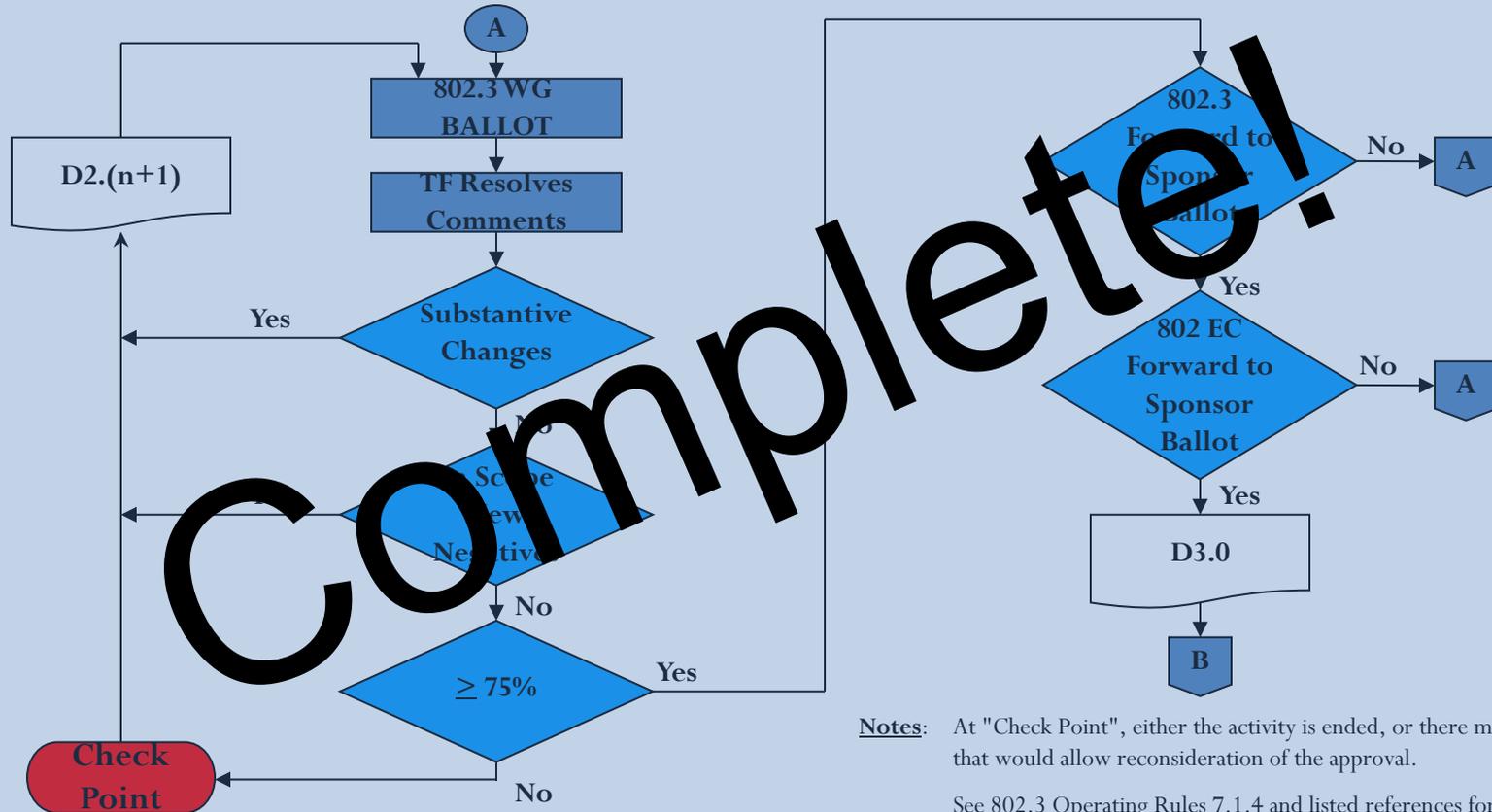


Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

# Overview of IEEE 802.3 Standards Process (2/5) – Task Force Comment Phase



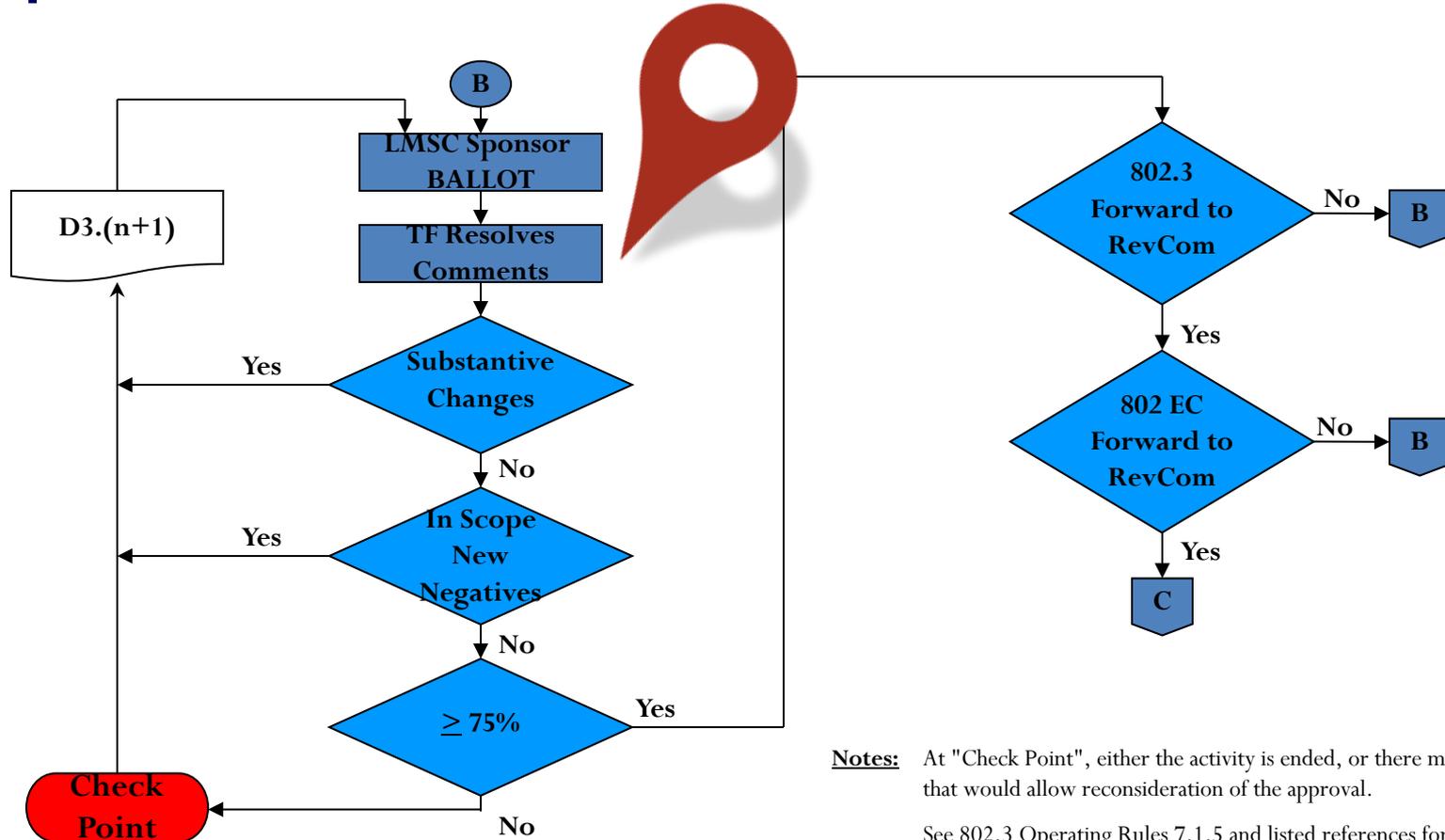
# Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase



**Notes:** At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

See 802.3 Operating Rules 7.1.4 and listed references for complete description

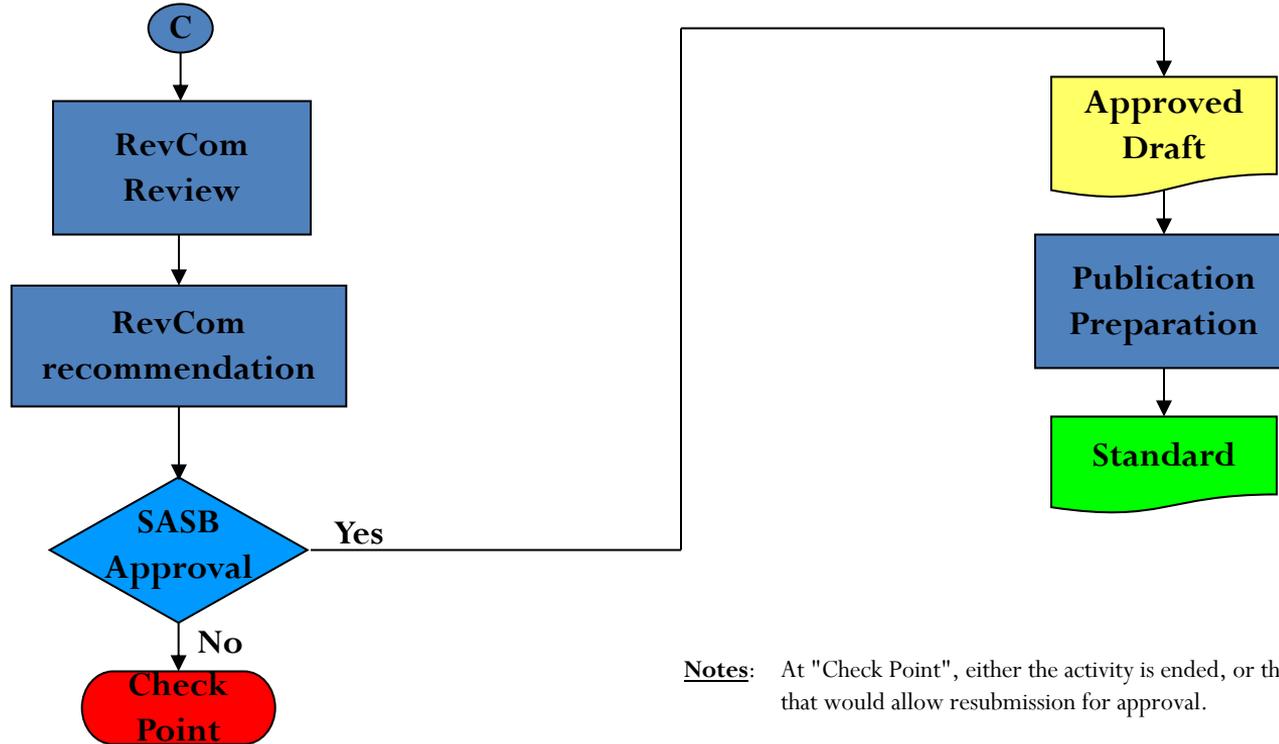
# Overview of IEEE 802.3 Standards Process (4/5)- Sponsor Ballot Phase



**Notes:** At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

See 802.3 Operating Rules 7.1.5 and listed references for complete description

# Overview of IEEE 802.3 Standards Process (5/5) – Final Approvals / Standard Release



**Notes:** At "Check Point", either the activity is ended, or there may be various options that would allow resubmission for approval.

# Liaisons and Communications

none

# Ad hocs

Charter: to discuss topics towards supporting the developed objectives, PAR and CSD or for providing the Task Force with contributions to help it prepare for future decisions.

Chair: Kent Lusted, Intel

<http://www.ieee802.org/3/cd/public/adhoc/index.html>

- Expected to continue the regular cadence.
- Wednesdays @ 8am PT

# IEEE P802.3cd Task Force Approved Project Documents

- PAR
  - <http://www.ieee802.org/3/cd/P802.3cd.pdf>
- CSD
  - <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0060-02-ACSD-802-3cd.pdf>
- Objectives
  - [http://www.ieee802.org/3/cd/P802d3cd\\_objectives\\_v4.pdf](http://www.ieee802.org/3/cd/P802d3cd_objectives_v4.pdf)
- Timeline
  - [http://www.ieee802.org/3/cd/P802d3cd\\_timeline.pdf](http://www.ieee802.org/3/cd/P802d3cd_timeline.pdf)

# Objectives 1 of 2

- 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

# Objectives 2 of 2

## 50 Gb/s Ethernet PHYs

- 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

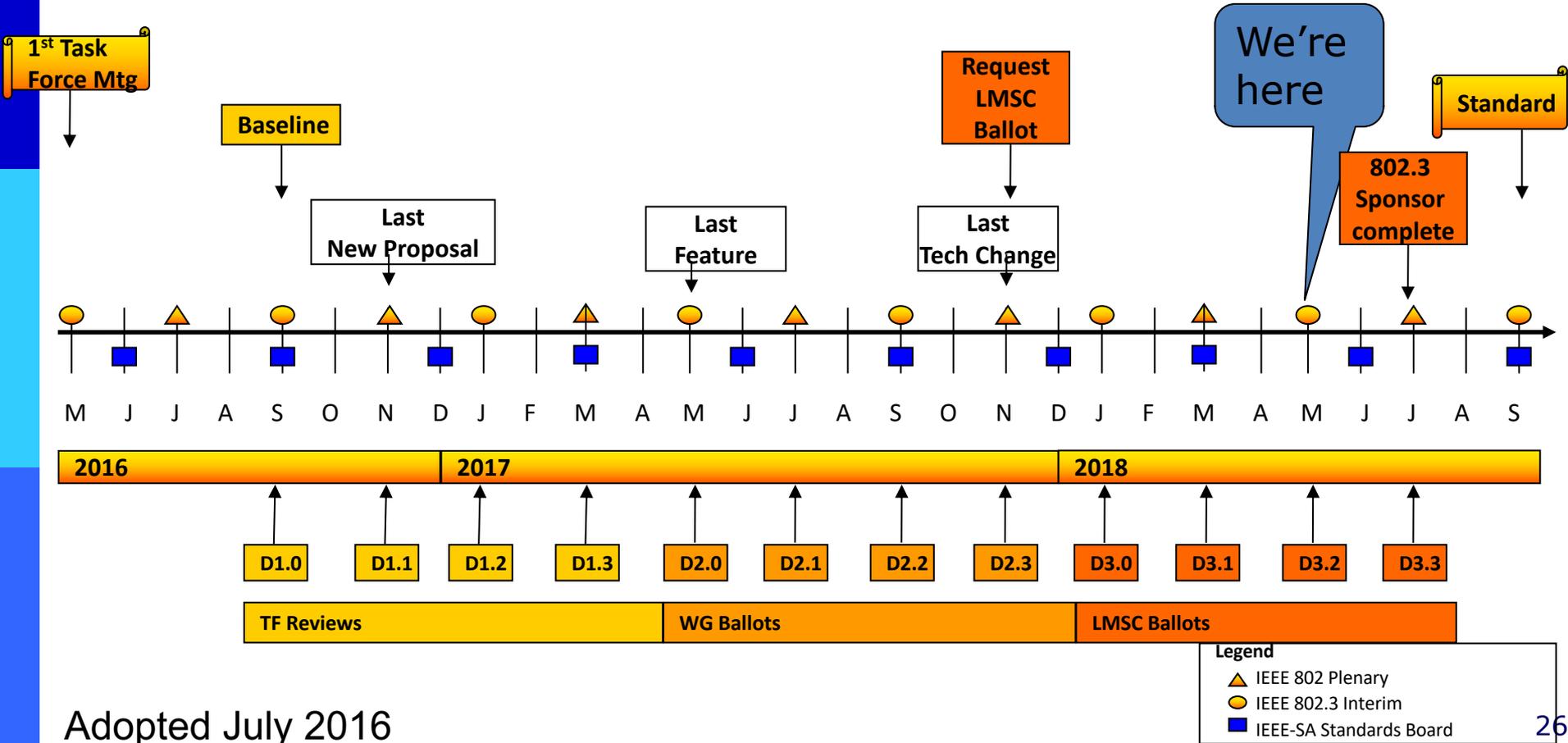
## 100 Gb/s Ethernet PHYs

- 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
- Define a single lane 100 Gb/s PHY for operation over duplex SMF with lengths up to at least 500 m, consistent with IEEE P802.3bs Clause 124

## 200 Gb/s Ethernet PHYs

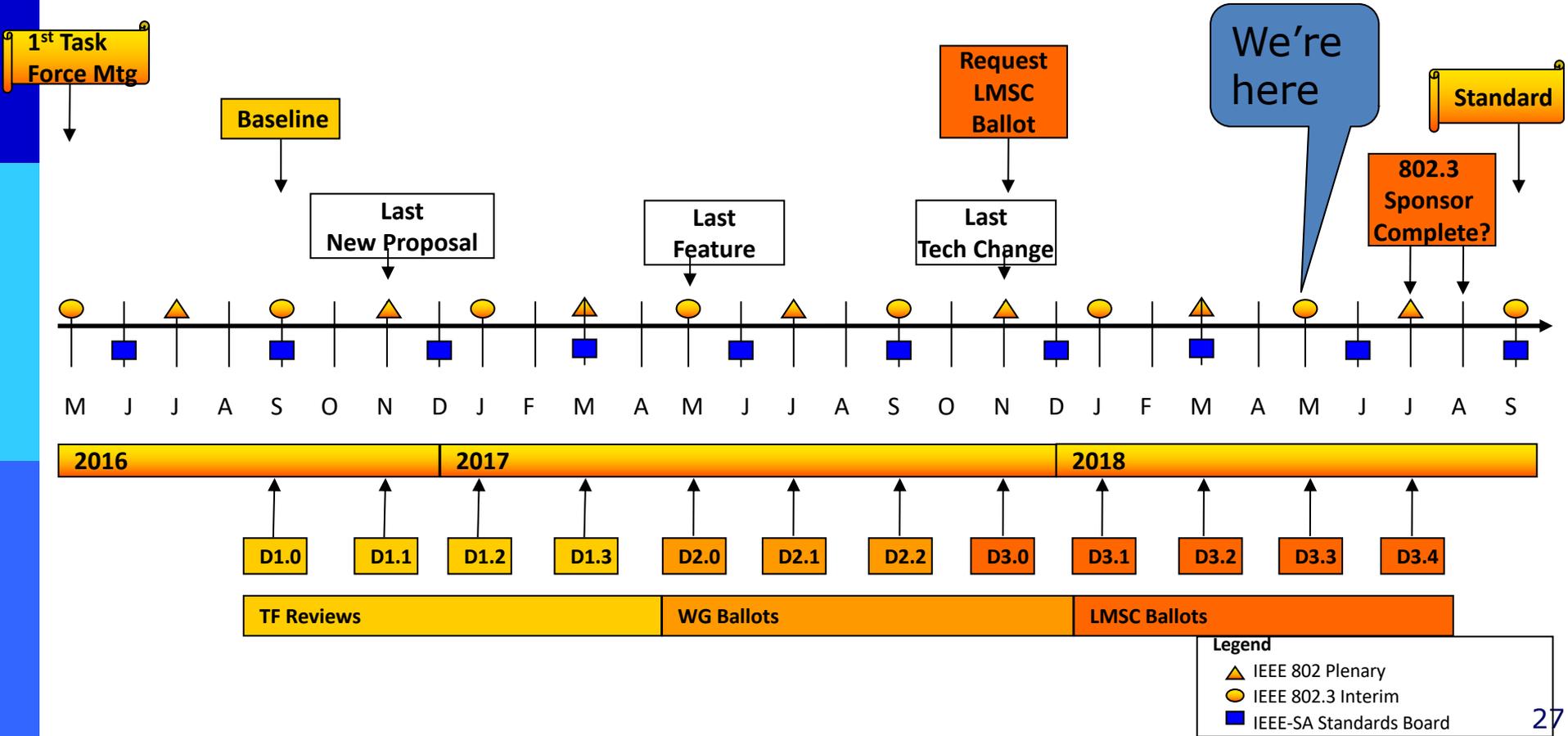
- Define four-lane 200 Gb/s PHYs for operation over
  - copper twin-axial cables with lengths up to at least 3m.
  - printed circuit board backplane with a total channel insertion loss of  $\leq 30$ dB at 13.28125 GHz.
- Define 200 Gb/s PHYs for operation over MMF with lengths up to at least 100m

# IEEE P802.3cd Task Force Adopted Timeline



Adopted July 2016

# IEEE P802.3cd Task Force Current Timeline





# IEEE-SA Sponsor Ballot Process

## 5.4.3.5 Completion of the standards balloting process and submittal to RevCom

- A minimum of 75% of those voting Approve or Do Not Approve (Negative with comment) must approve the draft in order to submit the ballot result to the IEEE-SA Standards Board. In the event that 30% or more of the returned ballots are Abstentions, the standards balloting process shall be considered invalid.
- In the event that a 75% return cannot be obtained, the standards balloting process is considered to have failed and further disposition of the proposed standard shall be the responsibility of the Sponsor.
- Once all required recirculations have been completed and 75% approval has been achieved, the IEEE requirements for consensus have been met. Efforts to resolve Do Not Approve votes may continue for a brief period; however, if such resolution is not possible in a timely manner, the Sponsor should forward the submittal to RevCom because the IEEE has an obligation to the majority to review and publish the proposed standard quickly.
- Copies of all unresolved Do Not Approve votes, together with the reasons given by the Do Not Approve voters and the responses by the Sponsor, shall be included with the ballot results submitted to RevCom.
- The Sponsor shall, if not included in a recirculation package, provide to the Do Not Approve voter and to RevCom an explanation why any comments associated with a Do Not Approve vote were not required to be recirculated. In order for a Do Not Approve vote to be changed to an Approve or Abstain vote, the Sponsor shall obtain and provide to RevCom written confirmation from each voter (by letter, fax, or electronic mail) that indicates concurrence with any change of his or her vote. Any Do Not Approve vote with comment that RevCom is ask

[http://standards.ieee.org/develop/policies/opman/sb\\_om.pdf](http://standards.ieee.org/develop/policies/opman/sb_om.pdf)

# RevCom – Acceptable Responses for Rejection

Disposition status is “Rejected” when one or more of these applies:

- The CRG disagrees with the comment
- The comment is out of scope
- The proposed change in the comment does not contain sufficient detail so that the CRG can understand the specific changes that satisfy the commenter
- The CRG cannot come to a consensus to make changes necessary to address the comment
- The comment is in support of an unsatisfied previous comment associated with a disapprove vote and does not provide substantive additional rationale
- The comment includes an attachment that does not meet the criteria indicated by the myBallot system; that the CRG cannot address as a single issue; or that does not relate to a specific line, paragraph, figure, or equation in the balloted draft
- The commenter has indicated to the CRG chair that they wish to withdraw the comment

<http://standards.ieee.org/about/sasb/revcom/guidelines.pdf>

# RevCom – Disposition for Rejection

The disposition detail field should explain why the comment is being rejected using one or more of these reasons:

- An explanation of why the CRG disagrees with the comment,
- A statement that the comment is out of scope, and the rationale,
- A statement that the proposed change in the comment does not contain sufficient detail so that the CRG can understand the specific changes that satisfy the commenter
- A statement that the CRG could not reach consensus on the changes necessary to address the comment, along with the reason
- A statement that the CRG has previously considered the comment (or a substantively similar comment), along with identification (by reference or copy) of the original comment and its disposition detail and status
- A statement of why the CRG considers the attachment does not meet the criteria indicated by the myBallot system; or cannot be addressed as a single issue; or does not relate to a specific line, paragraph, figure, or equation in the balloted draft
- A statement that the commenter has withdrawn the comment

<http://standards.ieee.org/about/sasb/revcom/guidelines.pdf>

# Goals for the meeting

- Comment Resolution on D3.2 comments
- Review technical presentations
- Generate D3.3 for Sponsor Ballot recirculation

# Meeting Logistics

- Main Meeting room is Grand Ballroom 17<sup>th</sup> floor
  - 2nd track room Allegheny (**if needed**)
- 8am start on Wednesday

<https://518interim.sched.com/>

	Tues	Wed	
AM	Grand Ballroom 17th floor	Grand Ballroom 17th floor	Optical Track Allegheny (if needed)
	Lunch	Lunch	
PM	Grand Ballroom 17th floor	Grand Ballroom 17th floor	Optical Track Allegheny (if needed)
		Merge Back at some point	

# Meeting Schedule – Tues/Wed

Note –Times listed are subject to change.  
Updated versions will be captured with new filename versions

Tuesday  
22-May-18

<u>Time</u>	<u>Presenter</u>	<u>Affiliation</u>	<u>Title</u>	<u>File Name</u>	Dur.
8:00 AM	Kent Lusted	Intel	Agenda and General Information	agenda_3cd_01_0518.pdf	0:45
8:45 AM	Kent Lusted	Intel	802.3cd Task Force Ad-hoc report	lusted_3cd_01_0518.pdf	0:10
8:55 AM	Matt Brown	Macom	802.3cd Chief Editor's Report	brown_3cd_01_0518.pdf	0:15
9:10 AM	Matt Brown	Macom	Comment agenda	brown_3cd_02_0518.pdf	0:20
9:30 AM	Comment Resolution (presentations as needed)				0:30
10:00 AM	<b>Break</b>				3:00
	Comment Resolution (presentations as needed)				
12:00 AM	<b>Lunch</b>				1:00
1:00 PM	Comment Resolution in each track (presentations as needed)				2:30
3:30 PM	<b>Break</b>				0:20
3:50 PM	Comment Resolution in each track (presentations as needed)				2:10
6:00 PM	<b>Break</b>				

Wednesday  
23-May-18

<u>Time</u>	<u>Presenter</u>	<u>Affiliation</u>	<u>Title</u>	<u>File Name</u>	Dur.
	<b>Track 1 (Grand Ballroom 17th floor) - Electrical Track</b>		<b>Track 2 (Allegheny) - Optical Track if needed</b>		
8:00 AM	Comment Resolution in each track (presentations as needed)				2:30
10:30 AM	<b>Break</b>				0:20
10:50 AM	Comment Resolution in each track (presentations as needed)				1:10
12:00 PM	<b>Lunch</b>				1:00
1:00 PM	Comment Resolution in each track (presentations as needed)				2:00
3:00 PM	<b>Break</b>				0:20
3:20 PM	Comment Resolution in each track (presentations as needed) Return to single group In Grand Ballroom 17th floor for final business				2:40
6:00 PM	<b>Adjourn</b>				

# Contributed Presentations

Contributed Presentations			
<a href="#">ERL Change Proposal Overview</a>	16-May-2018	Rich Mellitz	Samtec
<a href="#">ERL and system performance for 50GBASE-CR</a>	16-May-2018	Mike Dudek Tao Hu	Cavium Cavium
<a href="#">TDECQ Reference Receiver Precursor Constraint</a>	16-May-2018	Phil Sun	Credo
<a href="#">TDECQ and SRS</a>	16-May-2018	Piers Dawe	Mellanox
<a href="#">ERL measured results for 50G-KR Device (update)</a>	16-May-2018	Toshiaki Sakai	Socionext
<a href="#">SECQ and its sensitivity to measurement bandwidth</a>	16-May-2018	Pavel Zivny	Tektronix
<a href="#">ERL effect on COM (in support of r02-30)</a>	16-May-2018	Adee Ran	Intel
<a href="#">Changes to other optical specs when TDECQ spec limit is adjusted</a>	16-May-2018	Jonathan King Marco Mazzini	Finisar Cisco
Additional PAM4 transmitter constraints	16-May-2018	Jonathan King	Finisar
<a href="#">VCSEL transmitter performance update</a>	16-May-2018	Jonathan King	Finisar
<a href="#">100GBASE-DR: GoldenEye SSPRQ and PRBS13Q eye diagrams (.csv - large!!)</a>	16-May-2018	Marco Mazzini	Cisco

# Future Meetings & Ad hocs

- Ad-hoc meeting plans
  - On-going quasi-weekly meetings, all topics (will cycle) – agendas will be published.
  - Starting @ Wed 8am Pacific
- See: <http://www.ieee802.org/meeting/index.html>
- July 2018 Plenary
  - Week of July 18-23<sup>rd</sup>, 2018, San Diego, CA, USA \*\* reminder – early deadline this week! \*\*
- Sept 2018 Interim
  - Week of Sept 10<sup>th</sup>, 2018 Location: Spokane, WA, USA
- November 2018 Plenary
  - Week of Nov 11, 2018. Bangkok, Thailand
- Anyone interested in hosting an interim meeting contact me or the IEEE 802.3 Executive Secretary Steve Carlson.



# Thank You!