

# **Agenda and General Information**

**IEEE P802.3ca 100G-EPON**

Curtis Knittle  
CableLabs  
New Orleans, LA, USA  
May 23-25, 2017

# Agenda

NG-EPON

- ❑ Appoint Recording Secretary
- ❑ Welcome and Introductions
- ❑ Decorum
- ❑ Approve Agenda
- ❑ Approve Minutes
- ❑ Reflector and Web
- ❑ Ground Rules
- ❑ IEEE
  - Structure, Bylaws and Rules
  - Call for Patents
  - IEEE Standards Process
- ❑ Liaisons and Communications
- ❑ Goals for this meeting
- ❑ Presentations
- ❑ Motions and Closing Business
- ❑ Future Meetings

# P802.3ca Task Force Organization

- ❑ Chair: Curtis Knittle, CableLabs
- ❑ Vice Chair: Glen Kramer, Broadcom
- ❑ Chief Editor: Marek Hajduczenia, Charter

# Task Force Decorum

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- Photography or recording by permission only (December 2014 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 2014 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

# Motion #1

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Approve the agenda for Task Force meeting to be held May 23-25, 2017, in New Orleans, LA located in file

[http://www.ieee802.org/3/ca/public/meeting\\_archive/2017/05/agenda\\_3ca\\_1\\_0517.pdf](http://www.ieee802.org/3/ca/public/meeting_archive/2017/05/agenda_3ca_1_0517.pdf)

Moved: Duane Remein

Seconded: Kevin Noll

Procedural (> 50%)

Motion: Passed by voice without opposition

# Motion #2

NG-EPON

Approve the Minutes for Task Force meeting held March 2017, in Vancouver, BC located in file [http://www.ieee802.org/3/ca/public/meeting\\_archive/2017/03/minutes\\_unapproved\\_3ca\\_0317.pdf](http://www.ieee802.org/3/ca/public/meeting_archive/2017/03/minutes_unapproved_3ca_0317.pdf)

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Moved: Duane Remein

Seconded: Glen Kramer

Procedural (> 50%)

Motion: Passed by voice without opposition

# Reflector and Web

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- ❑ To subscribe to the 100G-EPON Task Force reflector, send an email to:

**ListServ@ieee.org**

with the following in the body of the message (do not include "<>"):

**subscribe STDS-802-3-NGEPON** <yourfirstname> <yourlastname>  
**end**

- ❑ Send 100G-EPON reflector messages to:

**STDS-802-3-NGEPON@listserv.ieee.org**

- ❑ Task Force web page URL:

**<http://www.ieee802.org/3/ca/index.shtml>**

# Task Force Private Area

- ❑ Access from 802.3ca home page:

<http://www.ieee802.org/3/ca/index.shtml>

- ❑ Draft D0.3

[http://www.ieee802.org/3/ca/private/drafts/draft\\_ver.shtml?D0\\_3](http://www.ieee802.org/3/ca/private/drafts/draft_ver.shtml?D0_3)

- Username:
- Password:

- ❑ Write it down...

- ❑ Note - The draft, and any other content, is posted for your review only, and neither the content nor access information should be copied or redistributed to others in violation of document copyrights.



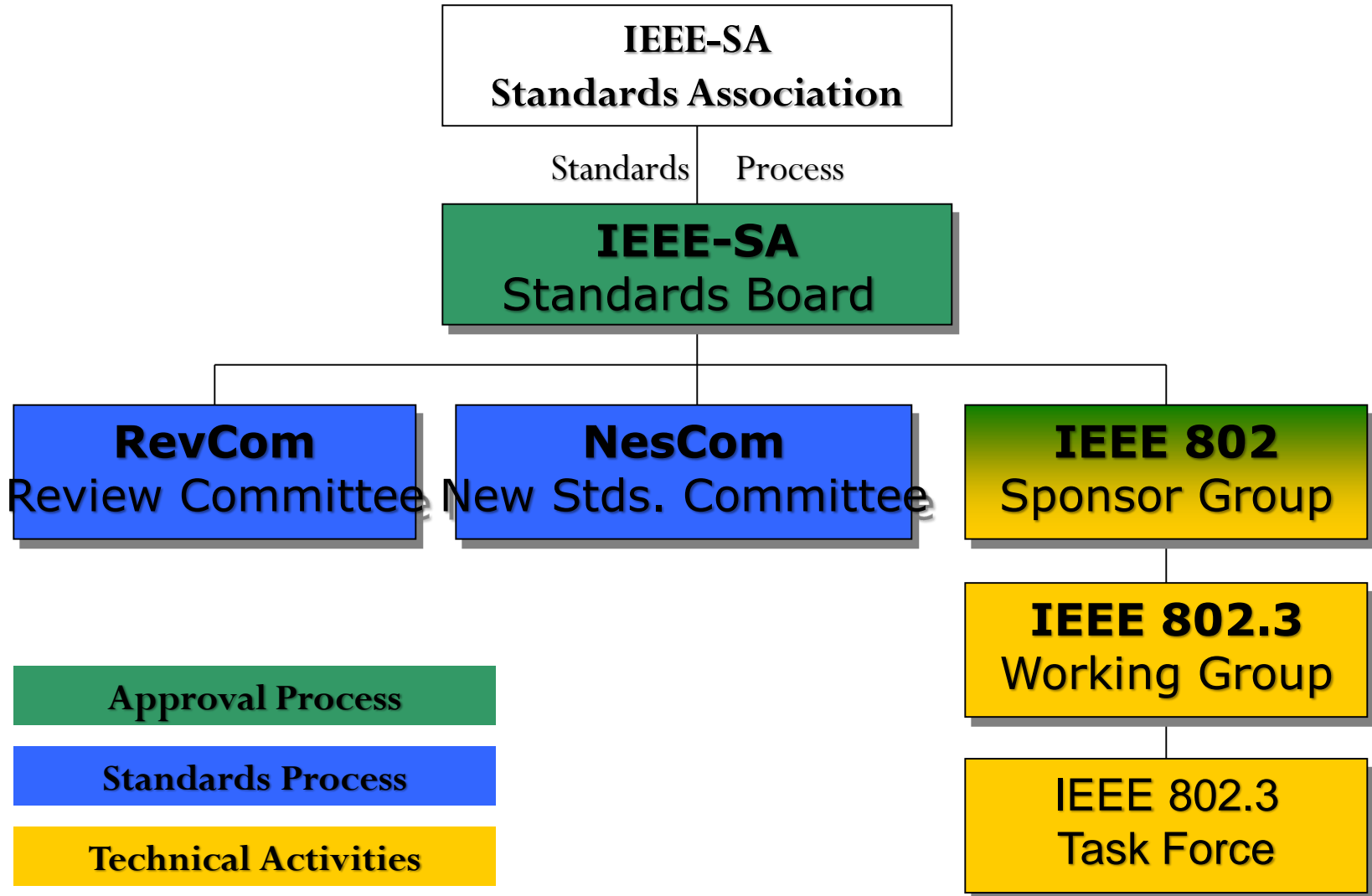
# Ground Rules

- ❑ 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

- 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/>
  - (For interim) Password will be provided

# IEEE Structure

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# 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)

# Participants, Patents, and Duty to Inform

All participants in this meeting have certain obligations under the IEEE-SA Patent Policy.

- ❑ Participants [Note: Quoted text excerpted from IEEE-SA Standards Board Bylaws subclause 6.2]:
  - “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
  - “Should inform the IEEE (or cause the IEEE to be informed)” of the identity of “any other holders of potential Essential Patent Claims” (that is, third parties that are not affiliated with the participant, with the participant’s employer, or with anyone else that the participant is from or otherwise represents)
- ❑ The above does not apply if the patent claim is already the subject of an Accepted Letter of Assurance that applies to the proposed standard(s) under consideration by this group
- ❑ Early identification of holders of potential Essential Patent Claims is strongly encouraged
- ❑ No duty to perform a patent search

# Patent Related Links

NG-EPON

- ❑ All participants should be familiar with their obligations under the IEEE-SA Policies & Procedures for standards development.
  
- ❑ Patent Policy is stated in these sources:
  - IEEE-SA Standards Boards 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) or visit <http://standards.ieee.org/about/sasb/patcom/index.html>**

**This slide set is available at <https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.ppt>**

# 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:
  - Either speak up now 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
  - Cause an LOA to be submitted

# 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, including licensing costs of essential patent claims, of different technical approaches may be discussed in standards development meetings.
      - » Technical considerations remain 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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See IEEE-SA Standards Board Operations Manual, clause 5.3.10 and "Promoting Competition and Innovation: What You Need to Know about the IEEE Standards Association's Antitrust and Competition Policy" for more details.



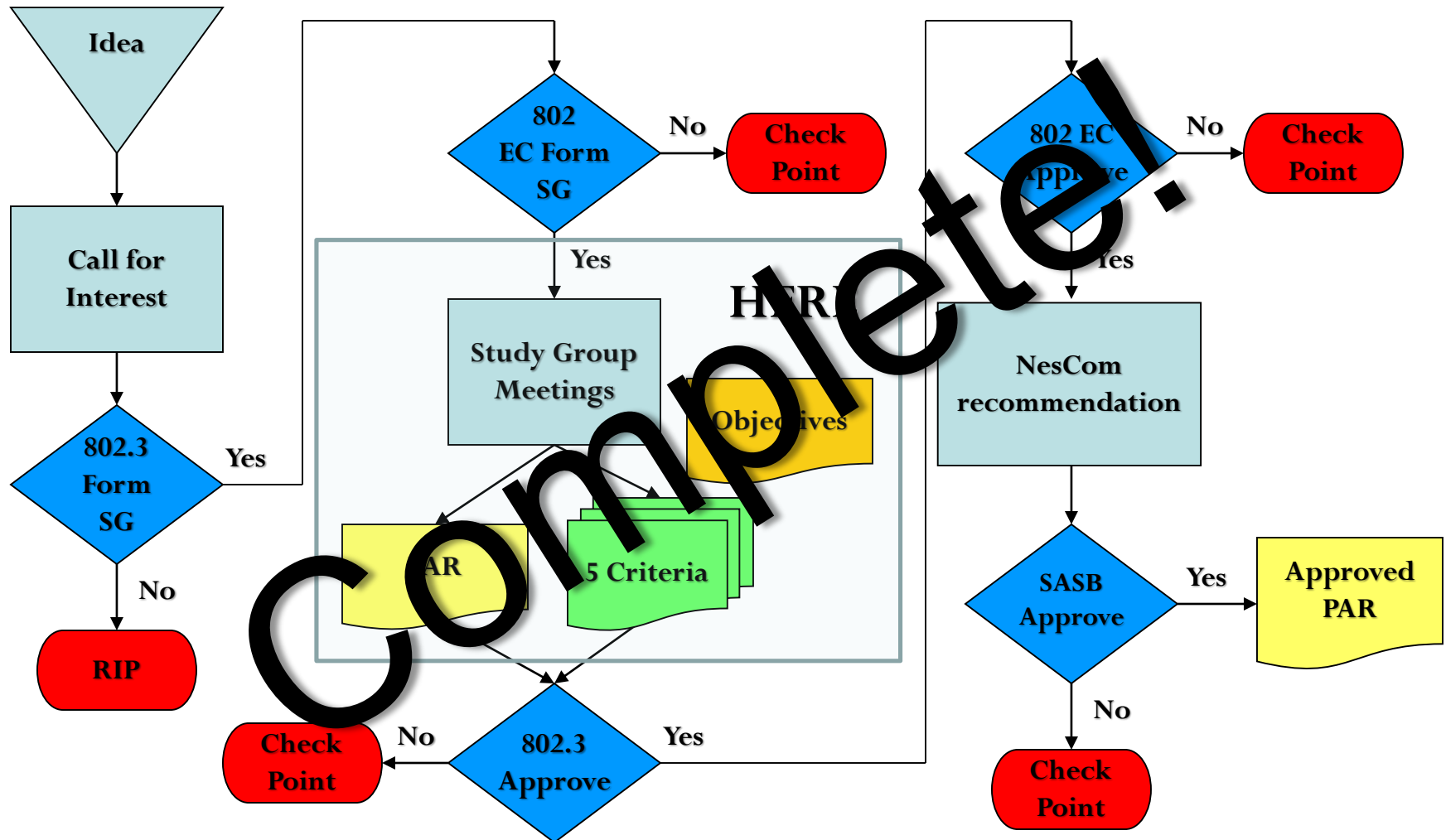
# Participation in IEEE 802 Meetings

All participation in IEEE 802 Working Group meetings 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”. ([http://ieee802.org/PNP/approved/IEEE\\_802\\_WG\\_PandP\\_v19.pdf](http://ieee802.org/PNP/approved/IEEE_802_WG_PandP_v19.pdf) section 4.2.1)*
- ❑ **You have an obligation to act and vote as an individual and not under the direction of any other individual or group. Your obligation to act and vote as an individual applies in all cases, regardless of any external commitments, agreements, contracts, or orders.**
- ❑ **You 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 [http://ieee802.org/PNP/approved/IEEE\\_802\\_WG\\_PandP\\_v19.pdf](http://ieee802.org/PNP/approved/IEEE_802_WG_PandP_v19.pdf) section 3.4.1, list item x**

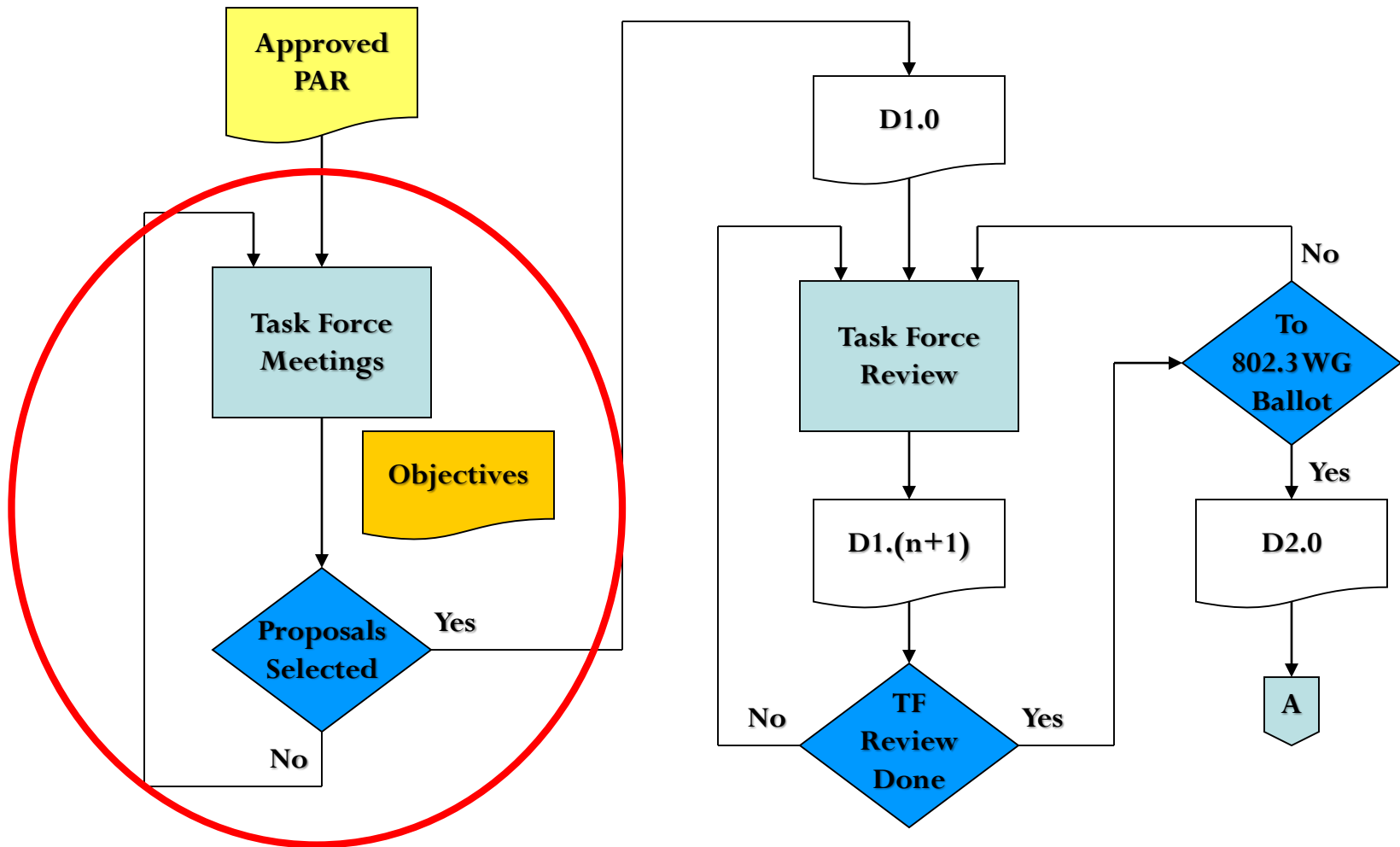
**By participating in IEEE 802 meetings, you accept these requirements. If you do not agree to these policies then you shall not participate.**

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

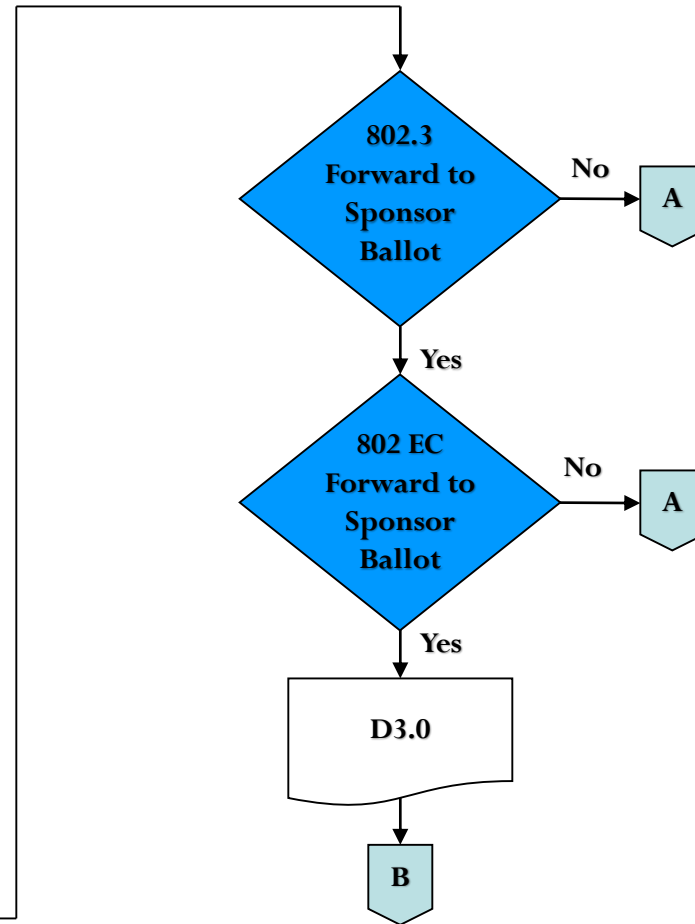
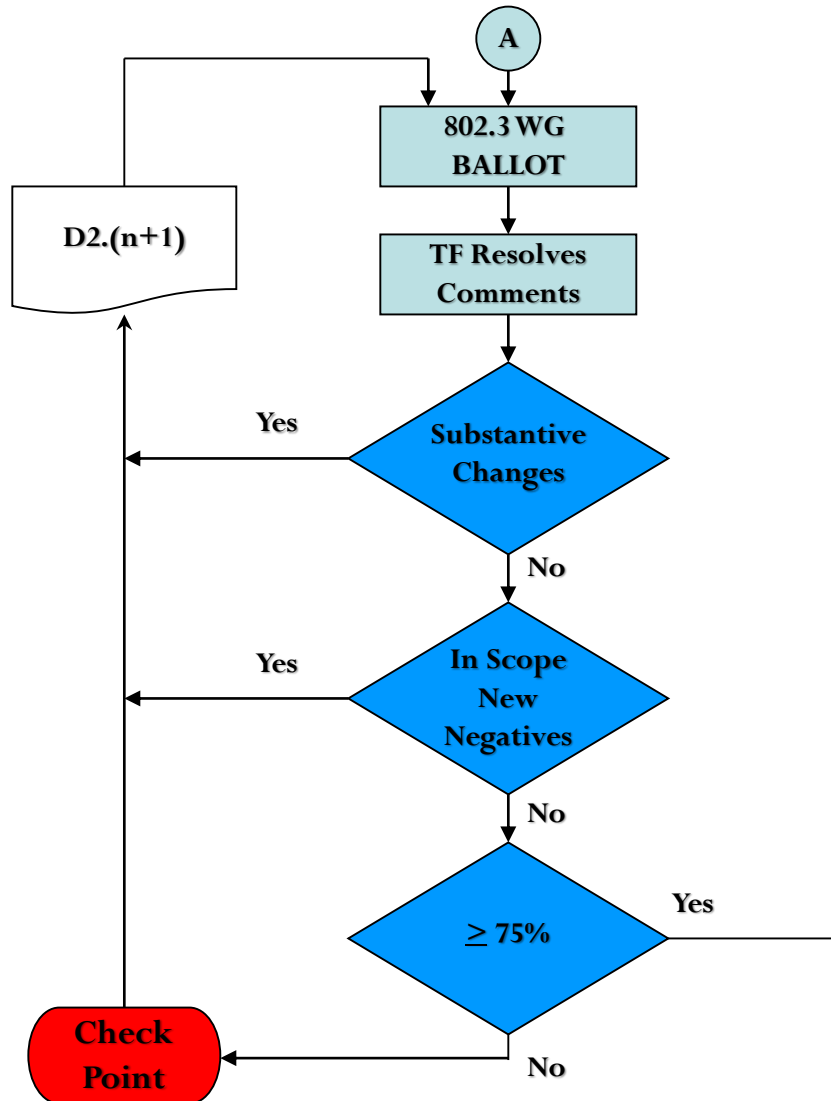


Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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



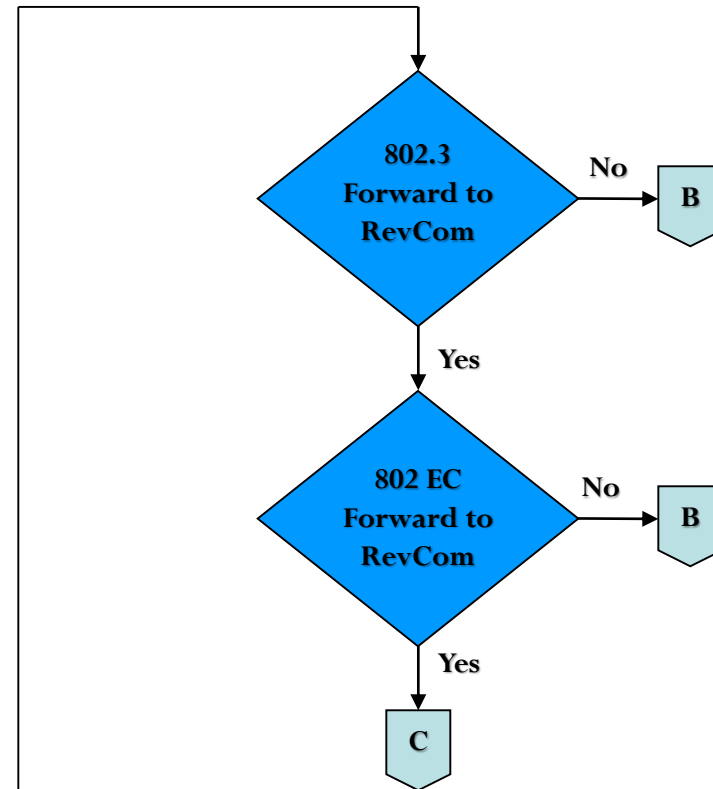
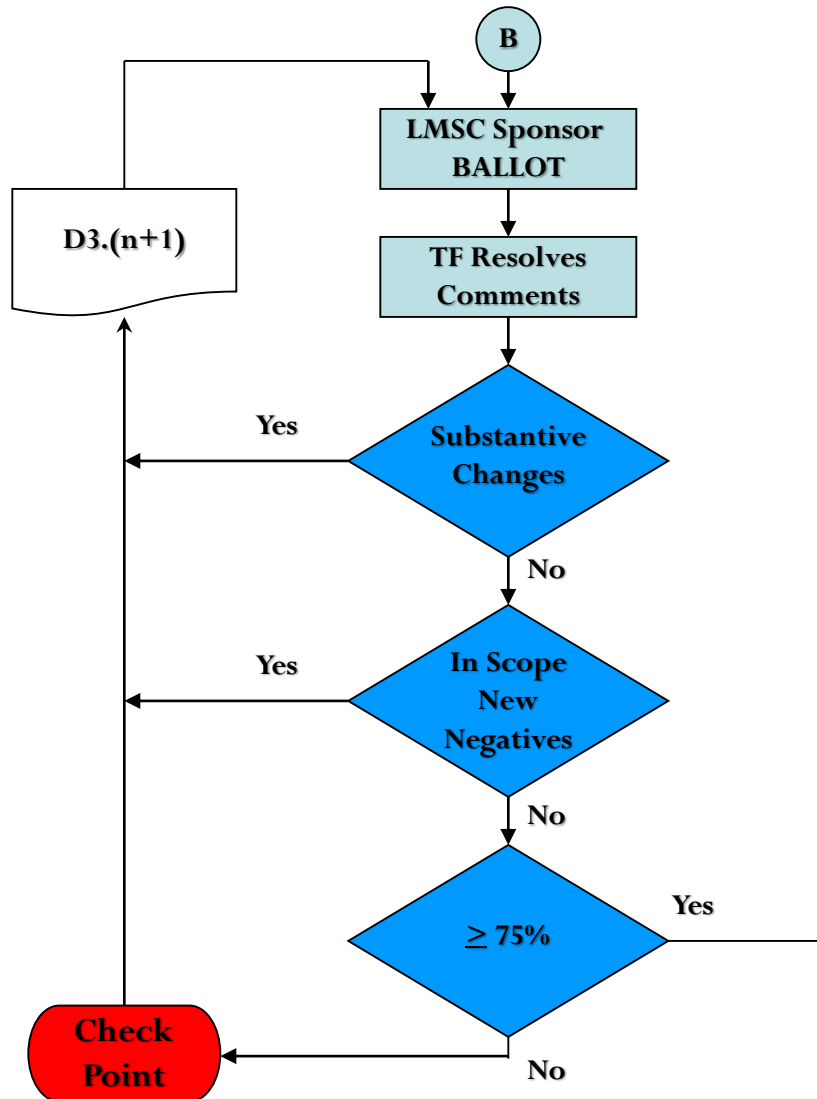
# Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase



**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

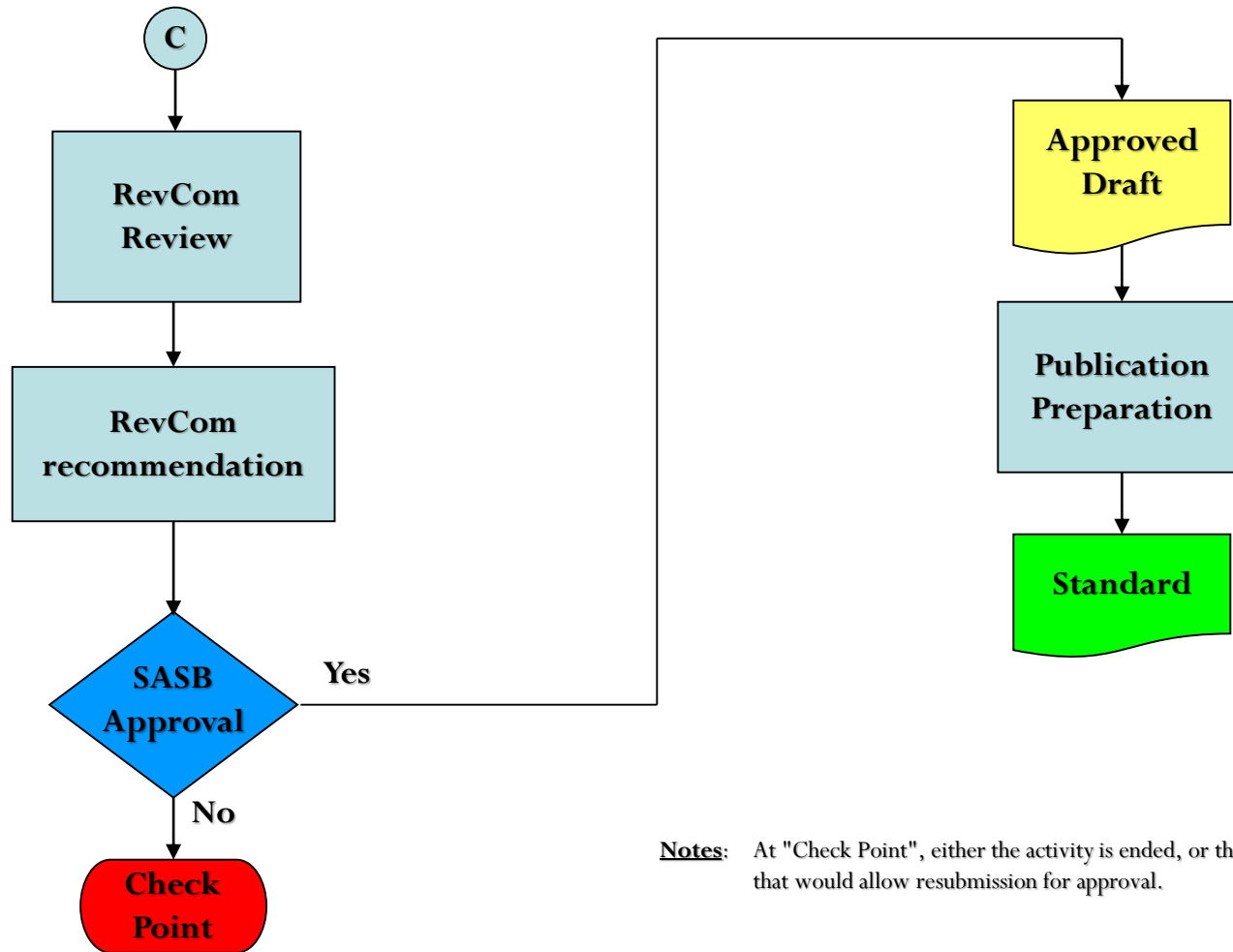
# Overview of IEEE 802.3 Standards Process (4/5)- Sponsor Ballot Phase



**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

# Goals for this Meeting

- ❑ Hear technical contributions
- ❑ Adopt baseline proposals for wavelength plan, MPCP, FEC, ...
- ❑ Revisit timeline
- ❑ Identify steps moving forward



# IEEE P802.3ca 100G-EPON Approved Project Documents

## □ PAR

- [http://www.ieee802.org/3/ca/documents/P802\\_3ca\\_par\\_approved.pdf](http://www.ieee802.org/3/ca/documents/P802_3ca_par_approved.pdf)

## □ CSD

- <https://mentor.ieee.org/802-ec/dcn/15/ec-15-0100-00-ACSD-802-3ca.pdf>

## □ Objectives

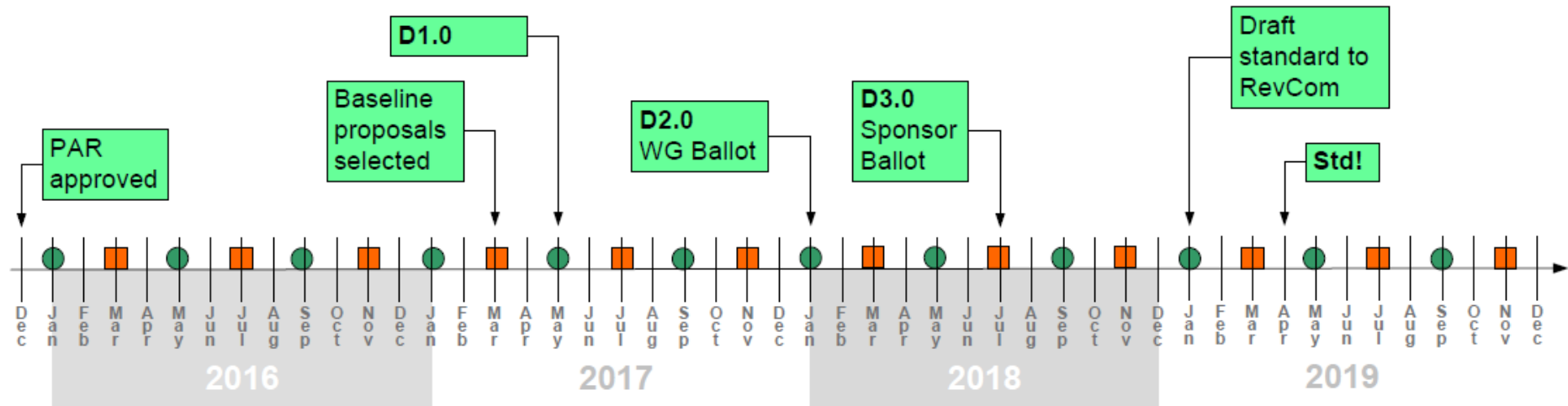
- [http://www.ieee802.org/3/ca/documents/P802\\_3ca\\_objectives.pdf](http://www.ieee802.org/3/ca/documents/P802_3ca_objectives.pdf)

# IEEE P802.3ca 100G-EPON Objectives

- ❑ Support subscriber access networks using point to multipoint topologies on optical fiber
- ❑ Provide specifications for physical layers operating over a single SMF strand and supporting symmetric and/or asymmetric the MAC data rates of:
  - 25 Gb/s in downstream and less than or equal to 25 Gb/s in upstream
  - 50 Gb/s in downstream and less than or equal to 50 Gb/s in upstream
  - 100 Gb/s in downstream and less than or equal to 100 Gb/s in upstream
- ❑ PHY(s) to have a BER better than or equal to  $10^{-12}$  at the MAC/PLS service interface (or the frame loss ratio equivalent)
- ❑ Support coexistence with 10G-EPON
  - Optical power budgets to accommodate channel insertion losses equivalent to those supported by the 10G-EPON standard
  - Wavelength allocation allowing concurrent operation with 10G-EPON PHYs

# IEEE P802.3ca 100G-EPON Timeline

## IEEE P802.3ca Timeline



- - 802.3 Interim Meeting
- - 802.3 Plenary Meeting

# Presentations (1/2)

## IEEE 100G-EPON Task Force (802.3ca)

### Meeting Agenda

23-25 May 2017

New Orleans, LA

DAY 1: Tuesday 23 May 2017 (times listed are subject to change)					
Item	Presenter	Title	Duration	Start time	Stop time
1	C. Knittle	Opening, General Information	0:25	9:00 AM	9:25 AM
2	M. Hajduczenia	Comments against draft	0:30	9:25 AM	9:55 AM
3	G. Kramer	The challenges of supporting 25G/10G operation (kramer_3ca_2_0517)	0:25	9:55 AM	10:20 AM
4		Morning Break	0:25	10:20 AM	10:45 AM
5	D. Zhao	10Gbps US option for 25G asymmetric PON (zhao_3ca_2_0517)	0:25	10:45 AM	11:10 AM
6	D. Remein	MPCP+ messages (remein_3ca_1b_0517)	0:20	11:10 AM	11:30 AM
7	D. Remein	MPCP Messages (remein_3ca_2_0517)	0:20	11:30 AM	11:50 AM
8	G. Kramer	/S/ Character Alignment (kramer_3ca_1_0517)	0:25	11:50 AM	12:15 PM
9		Lunch	1:15	12:15 PM	1:30 PM
10	D. Zhao	LDPC for 100G EPON (zhao_3ca_1_0517)	0:25	1:30 PM	1:55 PM
11	M. Laubach	FEC proposal for NGEAPON (laubach_3ca_1_0517)	0:30	1:55 PM	2:25 PM
12	V. Houtsma	High gain FEC and CDR locking for 25G NRZ (houtsma_3ca_1_0517)	0:30	2:25 PM	2:55 PM
13		Afternoon Break	0:20	2:55 PM	3:15 PM
14	D. Umeda	Evaluation Results on Lock Performance of 10G and 25G CDRs (umeda_3ca_1_0517)	0:25	3:15 PM	3:40 PM
15	D. Liu	Analysis of Multi-channel Crosstalk with SOA as Pre-amplifier in 100G EPON (liu_3ca_1_0517)	0:35	3:40 PM	4:15 PM
16	F. Effenberger	Tilted Power Budgets (effenberger_3ca_1_0517)	0:25	4:15 PM	4:40 PM
17	H. Lee	SOA pre-amplified upstream signal power in 100G EPON (lee_3ca_1_0517)	0:20	4:40 PM	5:00 PM
18	K. Jackson	PR30 Link Budget Considerations from a Component Perspective(jackson_3ca_1_0517)	0:20	5:00 PM	5:20 PM
19	Y. Guo	100G-EPON power budget suggestions (guo_3ca_2_0517)	0:20	5:20 PM	5:40 PM
20	M. Park	Are Uncooled Optical Transceivers for 25 Gbps US/DS Practical? (park_3ca_1_0517)	0:20	5:40 PM	6:00 PM
21	D. Liu	Optical vendors input on 25G transmitters (liu_3ca_4_0517)	0:20	6:00 PM	6:20 PM
22		Recess		6:20 PM	

Note –Times listed are subject to change.

# Presentations (2/2)

NGLEPON

DAY 2: Wednesday 24 May 2017 (times listed are subject to change)					
Item	Presenter	Title	Duration	Start time	Stop time
23	C. Knittle	Opening comments	0:05	9:00 AM	9:05 AM
24	P. Miguelez	PON ONU Requirements in Broadband Networks (miguelez_3ca_1_0517)	0:25	9:05 AM	9:30 AM
25	D. Liu	Feasibility analysis of DML with 7nm Pass band (Chen_3ca_01_0517)	0:35	9:30 AM	10:05 AM
26	M. Park	Required Spectral Mask for 25 Gb/s Burst Mode Signal (park_3ca_2_0517)	0:25	10:05 AM	10:30 AM
27		Morning Break	0:25	10:30 AM	10:55 AM
28	V. Houtsma	25G/10G/1G triple-rate upstream receiver based on single 10G APD/TIA (vanveen_3ca_1a_0517)	0:20	10:55 AM	11:15 AM
29	H. Zhang	25G DML Wavelength Shift Measurement for 25G EPON ONU Wavelength Shift Estimate with Burst Mode (zhang_3ca_1_0517)	0:20	11:15 AM	11:35 AM
30	D. Liu	A new compromise wavelength plan for 100G EPON (liu_3ca_2_0517)	0:25	11:35 AM	12:00 PM
31	D. Liu	100G EPON Wavelength plan comparison (liu_3ca_3_0517)	0:20	12:00 PM	12:20 PM
32		Lunch	1:25	12:20 PM	1:45 PM
33	F. Effenberger	Wavelength Plan Z (effenberger_3ca_2_0517)	0:15	1:45 PM	2:00 PM
34	X. Liu	Suppression of Four-Wave-Mixing (FWM) for 100G-EPON (liuxiang_3ca_1_0517)	0:20	2:00 PM	2:20 PM
35	X. Liu	Unified Wavelength Grid and Plan for 100G-EPON Submission (liuxiang_3ca_2_0517)	0:25	2:20 PM	2:45 PM
36	Y. Guo	Selection of 100G-EPON wavelength plan (guo_3ca_1_0517)	0:20	2:45 PM	3:05 PM
37		Afternoon Break	0:25	3:05 PM	3:30 PM
38	E. Dai	100G EPON resilience requirements for network transport applications (dai_3ca_1_0517) PDS	0:30	3:30 PM	4:00 PM
39	C. Knittle	Discussion/Motions	2:00	4:00 PM	6:00 PM
40		Recess		6:00 PM	

DAY 3: Thursday 25 May 2017 (times listed are subject to change)					
Item	Presenter	Title	Duration	Start time	Stop time
41	C. Knittle	Opening comments	0:05	9:00 AM	9:05 AM
42	C. Knittle	Discussion/Motions	1:55	9:05 AM	11:00 AM
43	C. Knittle	Timeline discussion	1:00	11:00 AM	12:00 PM
44		Adjourn		12:00 PM	

Note –Times listed are subject to change.

# Future Meetings

NG-EPON

- ❑ See: <http://www.ieee802.org/3/interims/index.html>
  
- ❑ July Plenary
  - Berlin, Germany
  - Week of July 10, 2017
  
- ❑ September Interim
  - Charlotte, NC
  - Week of September 11, 2017
  
- ❑ Anyone interested in hosting a interim meeting contact me or the IEEE 802.3 Executive Secretary [Steve Carlson](#).

# Attendance at BerlinTF Meeting

- I plan to attend IEEE 802.3 interim in Berlin: 24
- I probably will attend the interim in Berlin : 5
- I probably won't attend the interim in Berlin : 12
- I definitely won't attend the interim in Berlin : 2
  
- Total in the room: 45

**Thank you!**