

Agenda and General Information

IEEE P802.3ca 100G-EPON

Curtis Knittle
CableLabs

Charlotte, North Carolina
September 12-13, 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

Approve the agenda for 802.3ca September 2017 Task Force meeting as shown in agenda_3ca_1_0917.pdf, with the following changes:

- 1) Start with presentations in this order: Wavelengths, PMD, 50G
- 2) Allow post-deadline presentations powell_3ca_2_0917.pdf and liu_3ca_5_0917.pdf

Moved: Marek Hajduczenia

Seconded: Dekun Liu

Procedural (> 50%)

Motion: Passed by voice without opposition

Motion #2

NGEAPON

Approve the Minutes of 802.3ca Task Force meeting held July 2017, in Berlin, Germany as shown in minutes_unapproved_3ca_0717.pdf and post the approved minutes as minutes_approved_3ca_0717.pdf

Moved: Mark Laubach

Seconded: Bill Powell

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 D0.4

http://www.ieee802.org/3/ca/private/drafts/draft_ver.shtml?D0_4

- 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

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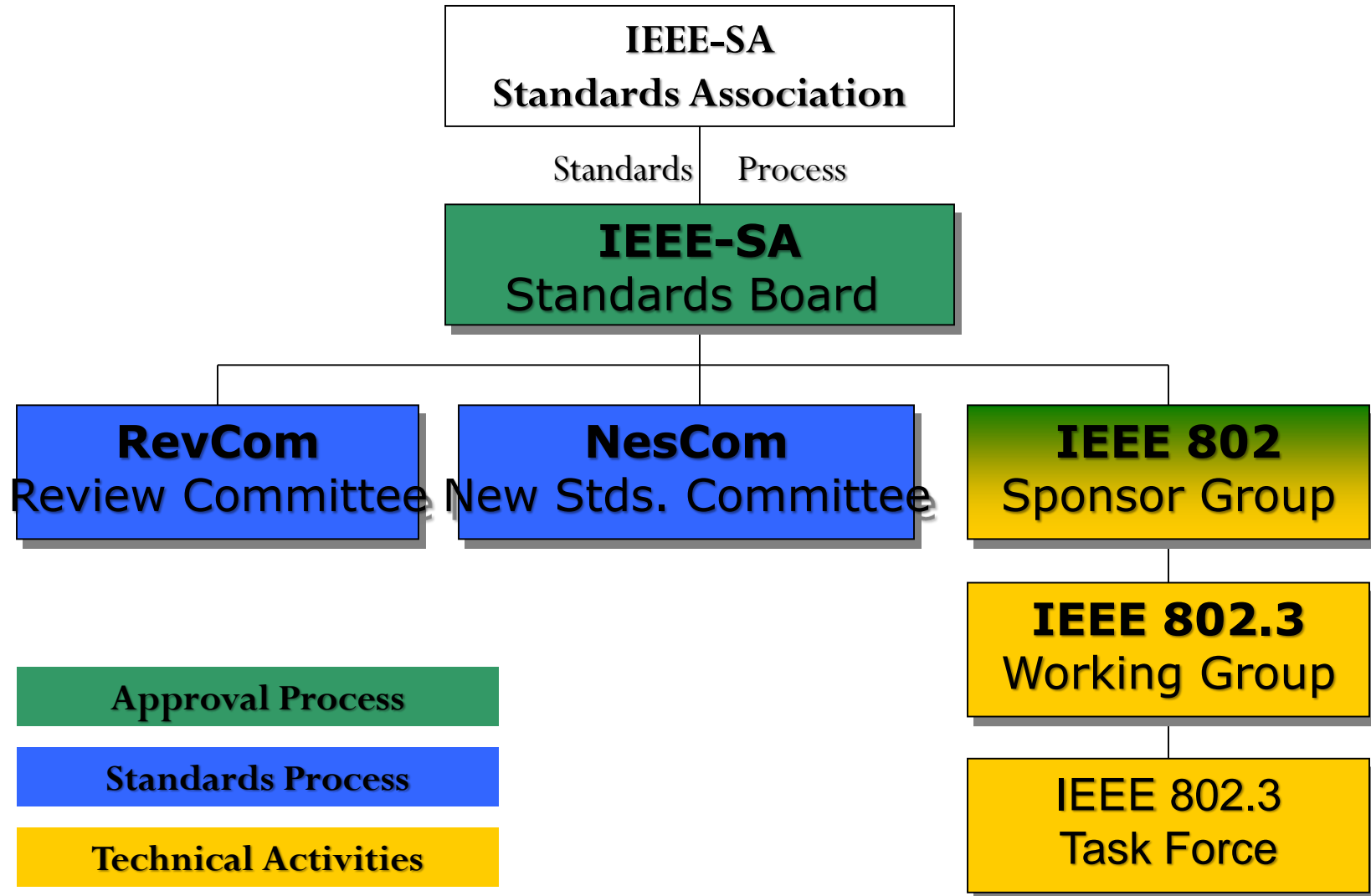
- ❑ Based upon IEEE 802.3 Rules
 - Foundation based upon Robert's Rules of Order
 - Anyone in the room may speak
 - Anyone in the room may vote
- ❑ **RESPECT**... give it, get it
- ❑ NO product pitches
- ❑ NO corporate pitches
- ❑ NO prices!!!
 - This includes costs, ASPs, etc. no matter what the currency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

- Tutorial Material on attendance tool
 - http://ieee802.org/3/minutes/attendance_procedures.pdf

- 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/
- ❑ **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/np/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

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

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- ❑ 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 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.

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.

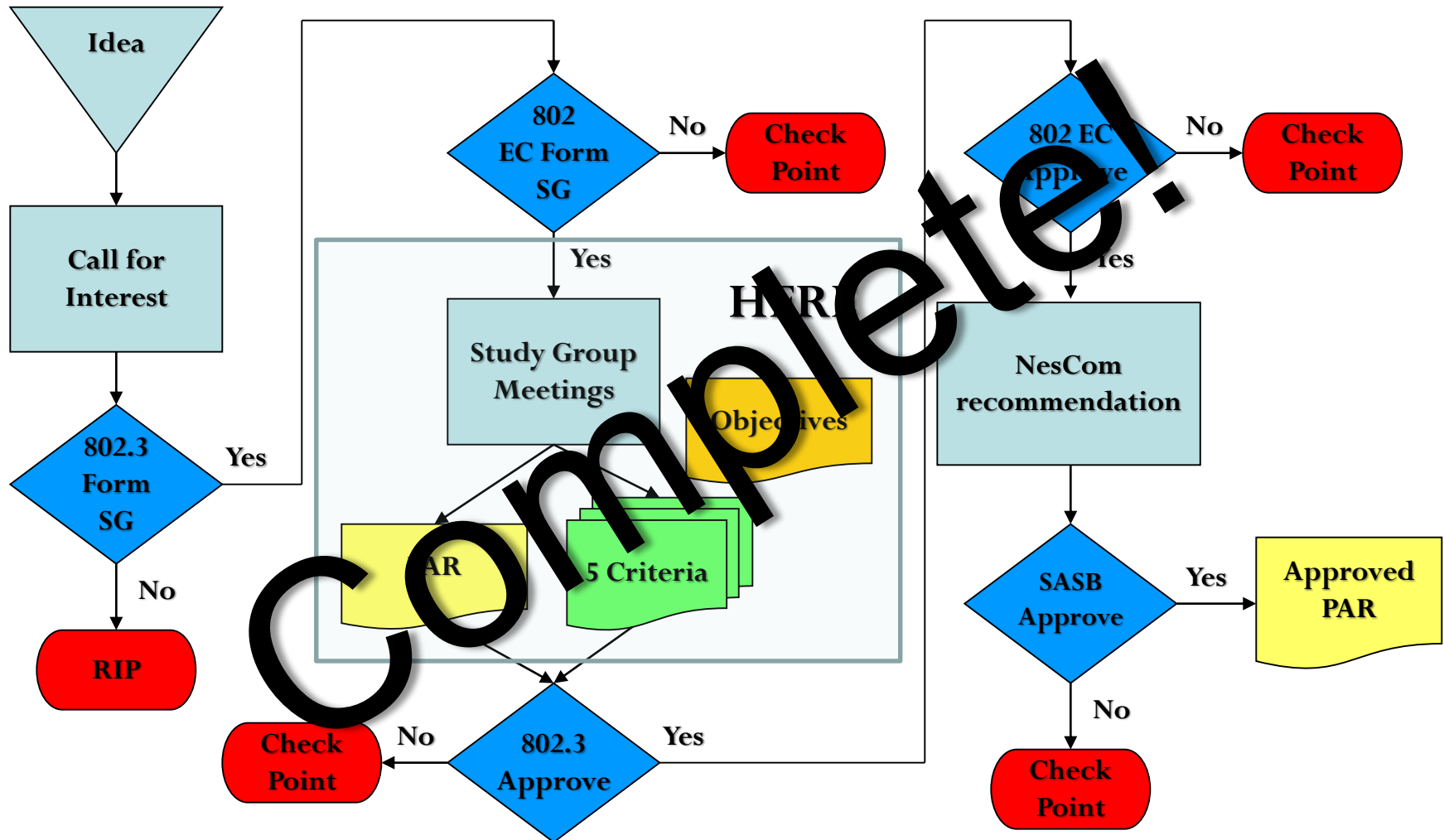
Participation in IEEE 802 Meetings

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 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 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 section 5.2.1.3 and http://ieee802.org/PNP/approved/IEEE_802_WG_PandP_v19.pdf section 3.4.1, list item x**

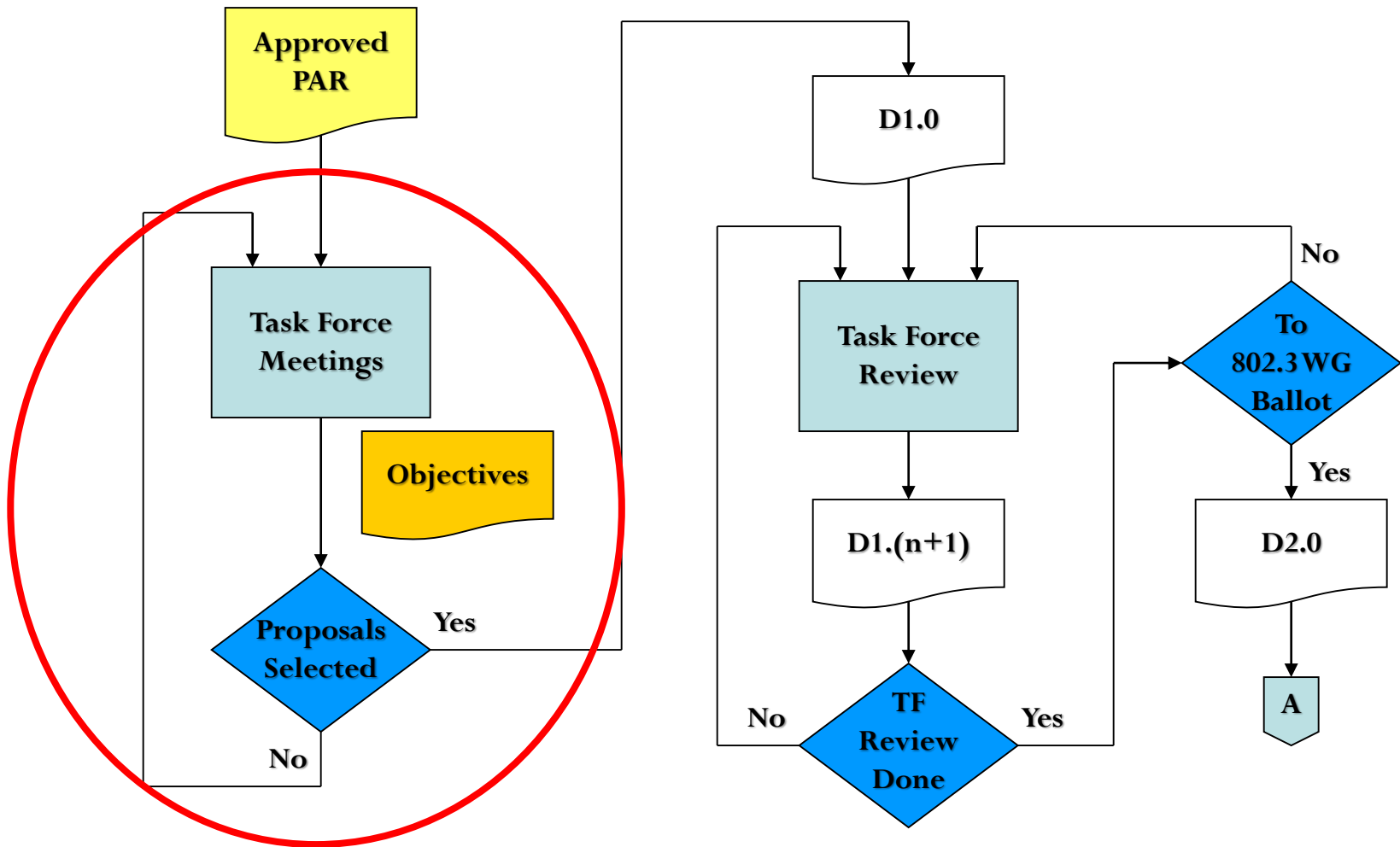
By participating in IEEE 802 meetings, you accept these requirements. If you do not agree to these policies then you shall not participate.

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

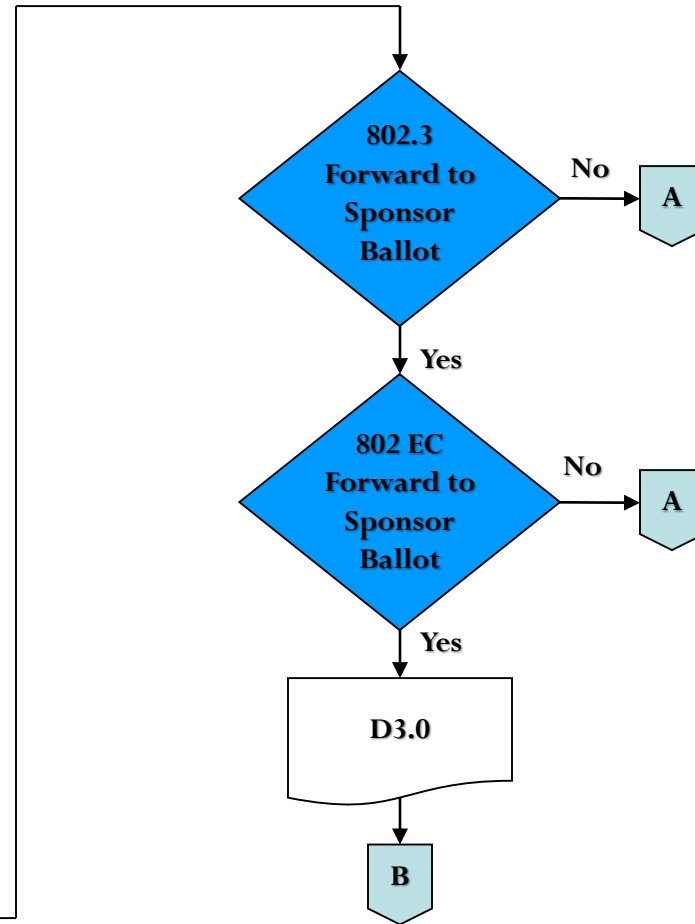
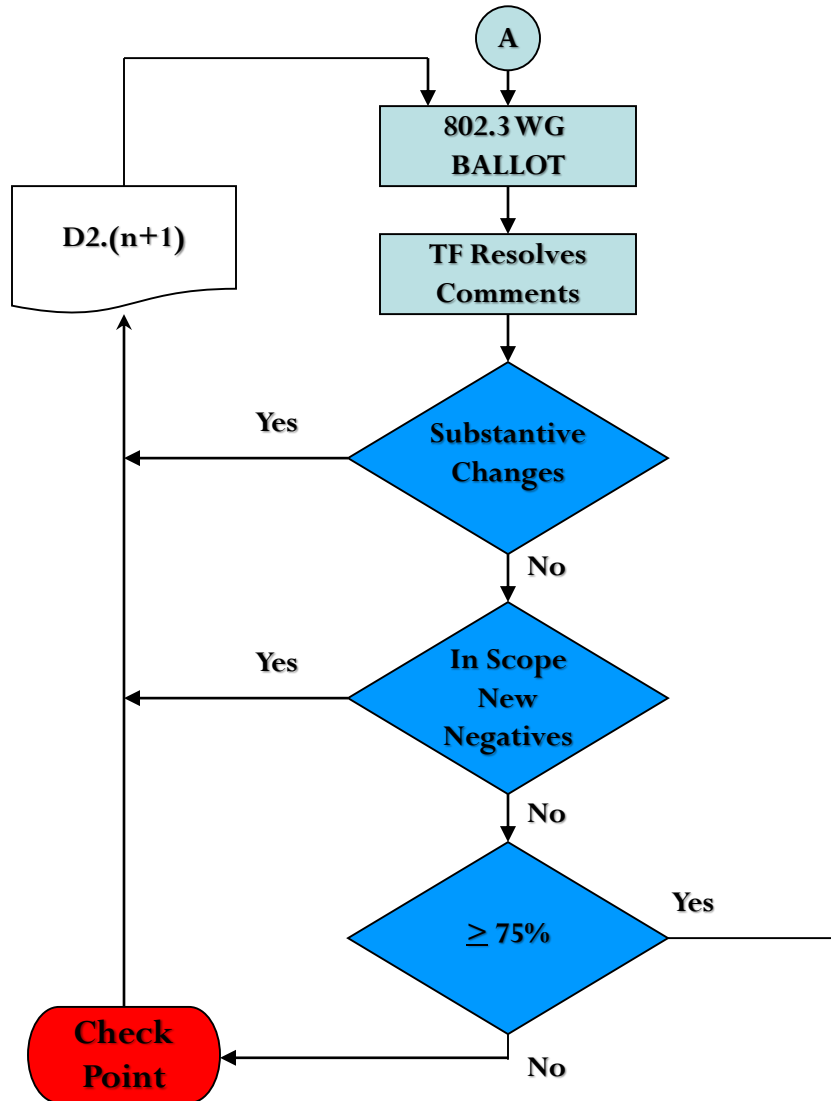


Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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



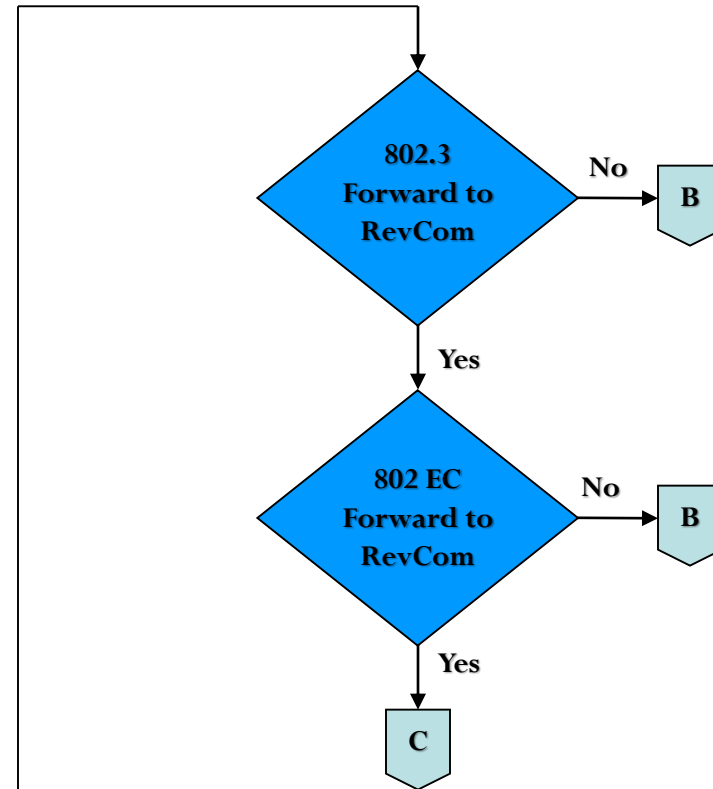
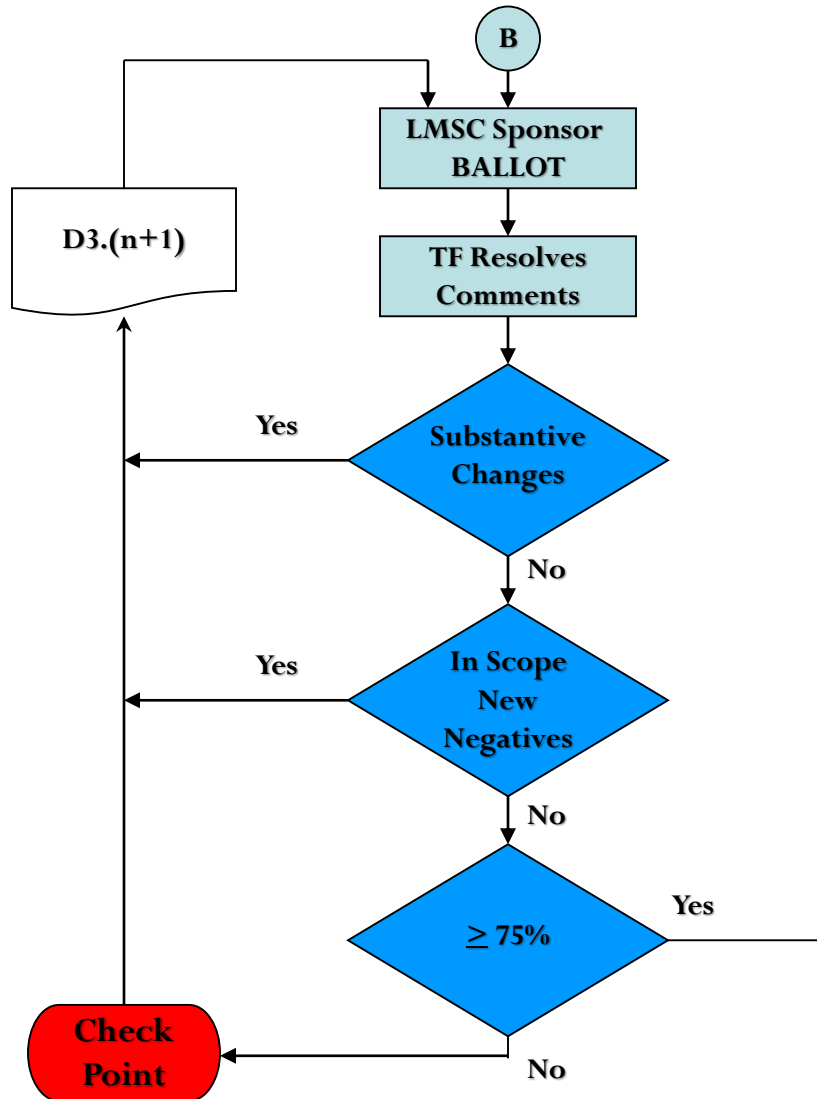
Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase



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

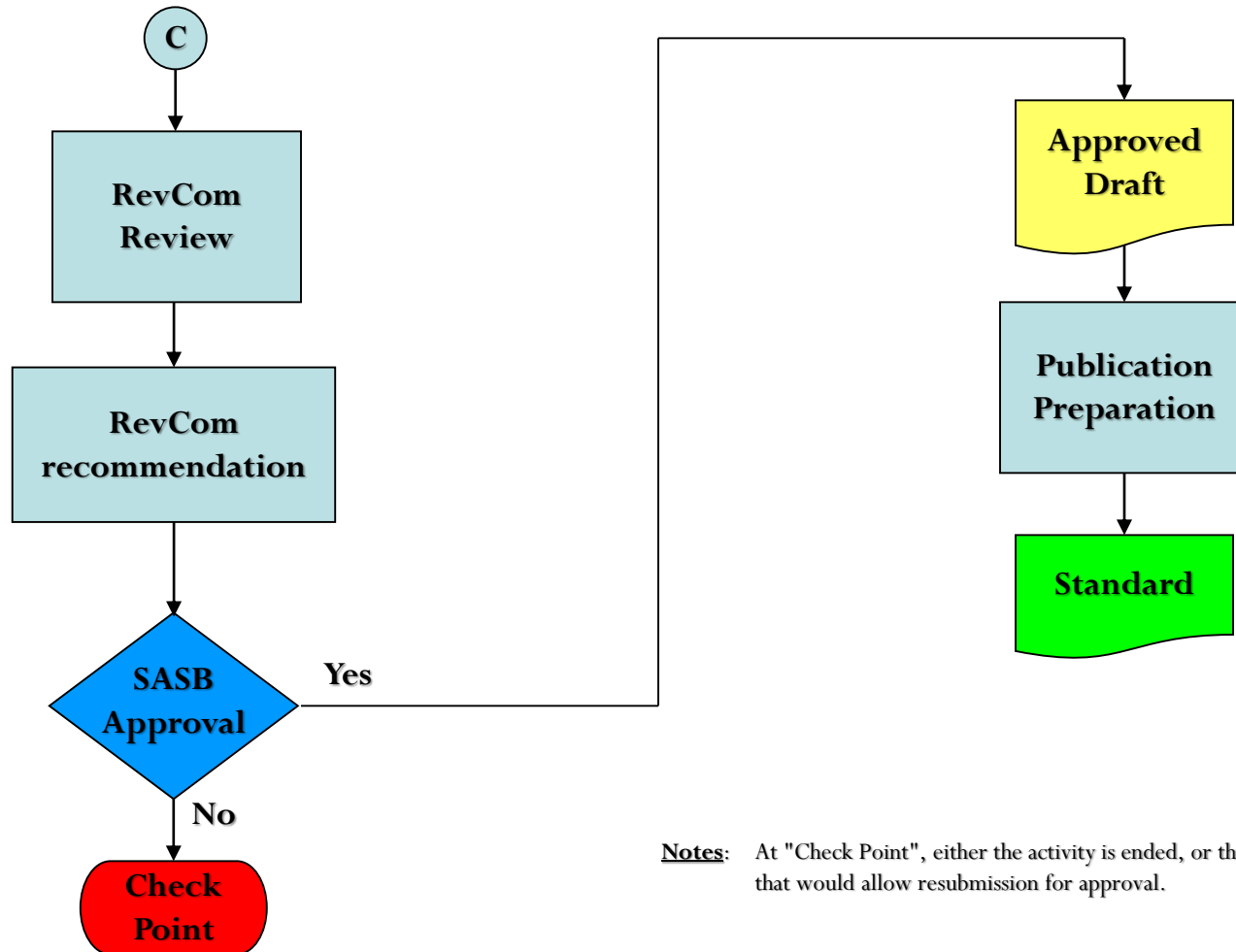
Overview of IEEE 802.3 Standards Process (4/5)- Sponsor Ballot Phase



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

□ From ITU-T SG15:

– *Liaison on Status of PON standardization and convergence*

Goals for this Meeting

NG-EPON

- ❑ Hear technical contributions
- ❑ Adopt baseline proposals for wavelength plan, MPCP, FEC, ...
- ❑ 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

□ CSD

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

□ Objectives

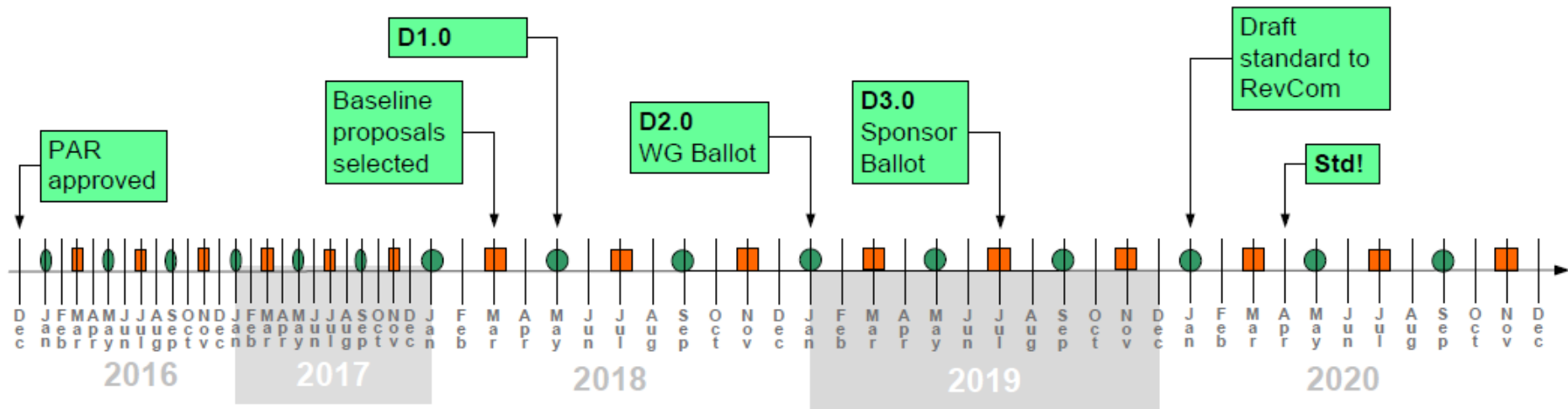
- http://www.ieee802.org/3/ca/documents/P802_3ca_objectives.pdf

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
- ❑ Wavelength allocation allowing concurrent operation of 25G-EPON and G-PON reduced wavelength set (1290nm-1330nm) 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

12-14 September 2017

Charlotte, NC

DAY 1: Tuesday 12 September 2017 (times listed are subject to change)					
Item	Presenter	Title	Duration	Start time	Stop time
1	C. Knittle	Opening, General Information, Liaison letter discussion	0:30	9:00 AM	9:30 AM
2	E. Dai	Problems With The Two-colors 25G Wavelength Plan And A Solution (dai_3ca_2_0917)	0:35	9:30 AM	10:05 AM
3	E. Harstead	.3ca 10G US channels in greenfield (harstead_3ca_1_0917)	0:20	10:05 AM	10:25 AM
		Morning Break	0:30	10:25 AM	10:55 AM
4	G. Kramer	Universal Wavelength Plan (Brownfield, Greenfield, and Seamless Evolution) (kramer_3ca_2_0917)	0:30	10:55 AM	11:25 AM
5	E. Harstead	Comments on two DS wavelengths for greenfield (harstead_3ca_4_0917)	0:10	11:25 AM	11:35 AM
6	E. Harstead	25G PON lasers: vendor survey (harstead_3ca_3_0917)	0:30	11:35 AM	12:05 PM
7	D. Liu	Sensitivity definition and TDP in 802.3ca discussion (liu_3ca_1_0917)	0:30	12:05 PM	12:35 PM
		Lunch	1:25	12:35 PM	2:00 PM
8	S. Way	Improving 25G-EPON sensitivity (guo_3ca_1_0917)	0:20	2:00 PM	2:20 PM
9	D. Liu	The necessity of enhanced FEC for low cost 25G PON (liu_3ca_4_0917)	0:25	2:20 PM	2:45 PM
10	M Laubach	FEC Proposal status (laubach_3ca_1_0917)	0:20	2:45 PM	3:05 PM
		Afternoon Break	0:25	3:05 PM	3:30 PM
11	S. Way	Reconsideration of 100G-EPON FEC (wey_3ca_1_0917)	0:20	3:30 PM	3:50 PM
12	B. Powell	Latency challenges for 25/50/100G EPON (powell_3ca_1_0917)	0:30	3:50 PM	4:20 PM
13	E. Dai	802.3ca At Crossings (dai_3ca_1_0917)	0:35	4:20 PM	4:55 PM
14	D. Liu	PON evolution discussion (liu_3ca_3_0917)	0:25	4:55 PM	5:20 PM
15	D. Liu	50G technical feasibility analysis (liu_3ca_2_0917)	0:30	5:20 PM	5:50 PM
16		Recess		5:50 PM	

Note –Times listed are subject to change.

Presentations (2/2)

NG-EPON

DAY 2: Wednesday 13 September 2017 (times listed are subject to change)					
Item	Presenter	Title	Duration	Start time	Stop time
17	C. Knittle	Opening comments	0:05	9:00 AM	9:05 AM
18	V. Houtsma	Options for Single wavelength 50G TDM-PON (Houtsma_3ca_1_0917)	0:30	9:05 AM	9:35 AM
19	E. Harstead	25G wavelength plan in 50G single lane scenario (harstead_3ca_2_0917)	0:20	9:35 AM	9:55 AM
20	J. Zhang	Channel capability report during registration for 100G-EPON (geng_3ca_1_0917)	0:20	9:55 AM	10:15 AM
21		Morning Break	0:30	10:15 AM	10:45 AM
22	G. Kramer	MPRS Enhancement for Improved Error Handling (kramer_3ca_1_0917)	0:45	10:45 AM	11:30 AM
23		Discussion/Motions/New business	0:45	11:30 AM	12:15 PM
24		Lunch	1:30	12:15 PM	1:45 PM
25		Discussion/Motions/New business	1:15	1:45 PM	3:00 PM
26		Afternoon Break	0:30	3:00 PM	3:30 PM
27		Discussion/Motions/New business	2:30	3:30 PM	6:00 PM
28		Adjourn		6:00 PM	

Note –Times listed are subject to change.

Future Meetings

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- ❑ See: <http://www.ieee802.org/3/interims/index.html>

- ❑ November Plenary
 - Orlando, FL
 - Week of November 6, 2017

- ❑ January 2018 Interim
 - Geneva, CH
 - Week of January 22, 2018

- ❑ Anyone interested in hosting a interim meeting contact me or the IEEE 802.3 Executive Secretary [Steve Carlson](#).

Attendance at Orlando TF Meeting

- I plan to attend IEEE 802.3 interim in Orlando :20
- I probably will attend the interim in Orlando : 0
- I probably won't attend the interim in Orlando : 2
- I definitely won't attend the interim in Orlando : 0

- Total in the room: 23

Thank you!