AGENDA AND GENERAL INFORMATION
IEEE P802.3CK - 100 GB/S, 200 GB/S, AND 400 GB/S ELECTRICAL INTERFACES TASK FORCE

BETH KOCHUPARAMBIL, EMPLOYED BY AND AFFILIATED WITH CISCO SYSTEMS
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VANCOUVER, BC, CANADA – MARCH 12-14TH, 2019

AGENDA

- Welcome and Introductions
- Approve Agenda
- Approve January Interim Minutes
- Ground Rules
- IEEE Structure, Bylaws and Rules / Call for Patents / IEEE Standards Process
- Reflector and Web
- Goals for this meeting
- Liaisons and Communications
- Presentations
- Motions and Closing Business
- Future Meetings

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. (June 2018 IEEE-SA Standards Board Ops Manual 5.3.3.2)

- Press (i.e., anyone reporting publicly on this meeting) are to announce their presence (June 2018 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

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

IEEE STRUCTURE

IEEE-SA
Standards Association

Standards | Process

IEEE-SA
Standards Board

RevCom
Review Committee

NesCom
New Stds. Committee

IEEE 802
Sponsor Group

IEEE 802.3
Working Group

IEEE 802.3
Task Force

Approval Process

Standards Process

Technical Activities

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**
  https://ieee.app.box.com/v/PandP-LMSC

- **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

Instructions for the WG Chair

The IEEE-SA strongly recommends that at each WG meeting the chair or a designee:

- **Show slides #1 through #4 of this presentation**
- **Advise the WG attendees that:**
  - IEEE's patent policy is described in Clause 6 of the *IEEE-SA Standards Board Bylaws*;
  - Early identification of patent claims which may be essential for the use of standards under development is strongly encouraged;
  - There may be Essential Patent Claims of which IEEE is not aware. Additionally, neither IEEE, the WG, nor the WG Chair can ensure the accuracy or completeness of any assurance or whether any such assurance is, in fact, of a Patent Claim that is essential for the use of the standard under development.

- **Instruct the WG Secretary to record in the minutes of the relevant WG meeting:**
  - That the foregoing information was provided and that slides 1 through 4 (and this slide 0, if applicable) were shown;
  - That the chair or designee provided an opportunity for participants to identify patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) of which the participant is personally aware and that may be essential for the use of that standard
  - Any responses that were given, specifically the patent claim(s)/patent application claim(s) and/or the holder of the patent claim(s)/patent application claim(s) that were identified (if any) and by whom.

- The WG Chair shall ensure that a request is made to any identified holders of potential essential patent claim(s) to complete and submit a Letter of Assurance.
- It is recommended that the WG Chair review the guidance in *IEEE-SA Standards Board Operations Manual* 6.3.5 and in FAQs 14 and 15 on inclusion of potential Essential Patent Claims by incorporation or by reference.

  Note: **WG** includes Working Groups, Task Groups, and other standards-developing committees with a PAR approved by the IEEE-SA Standards Board.

(Optional to be shown)

IEEE

PARTICIPANTS HAVE A DUTY TO INFORM THE IEEE

- **Participants <u>shall</u> 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 <u>should</u> 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

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◈IEEE

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

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◆IEEE

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.**

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

◆IEEE

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

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◆IEEE

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 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 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.
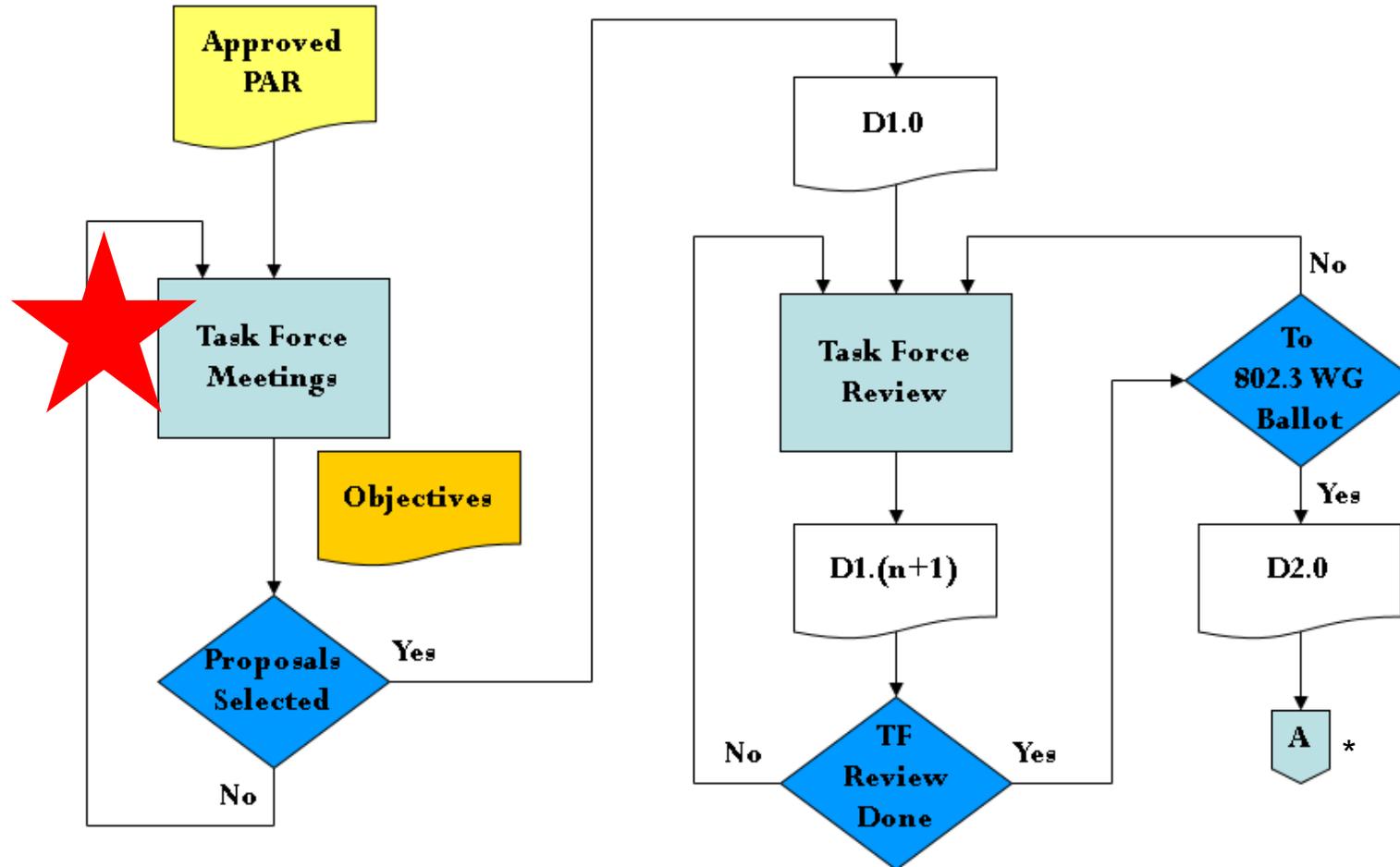
(Latest revision of IEEE 802 LMSC Working Group Policies and Procedures: http://www.ieee802.org/devdocs.shtml)
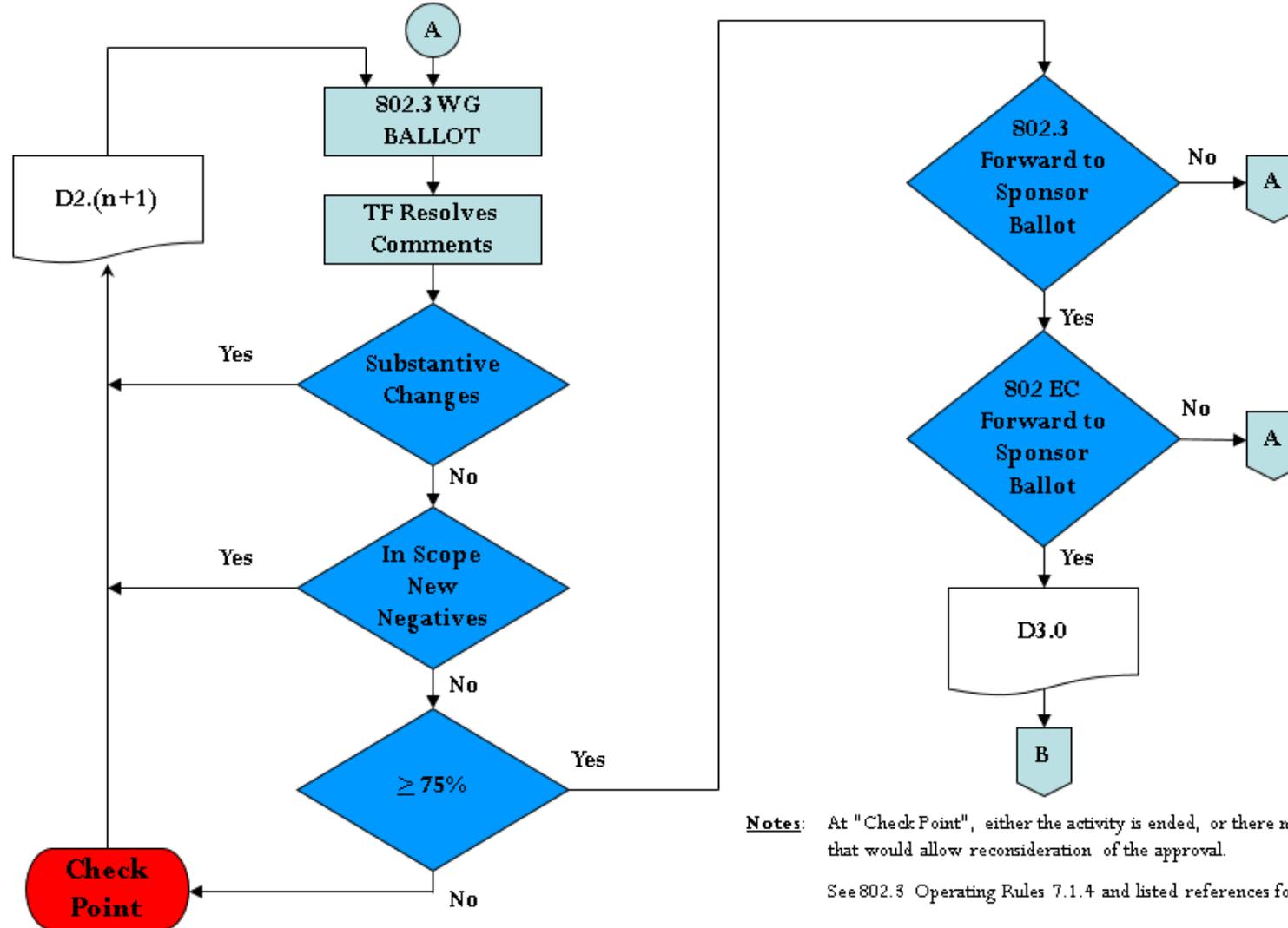
12
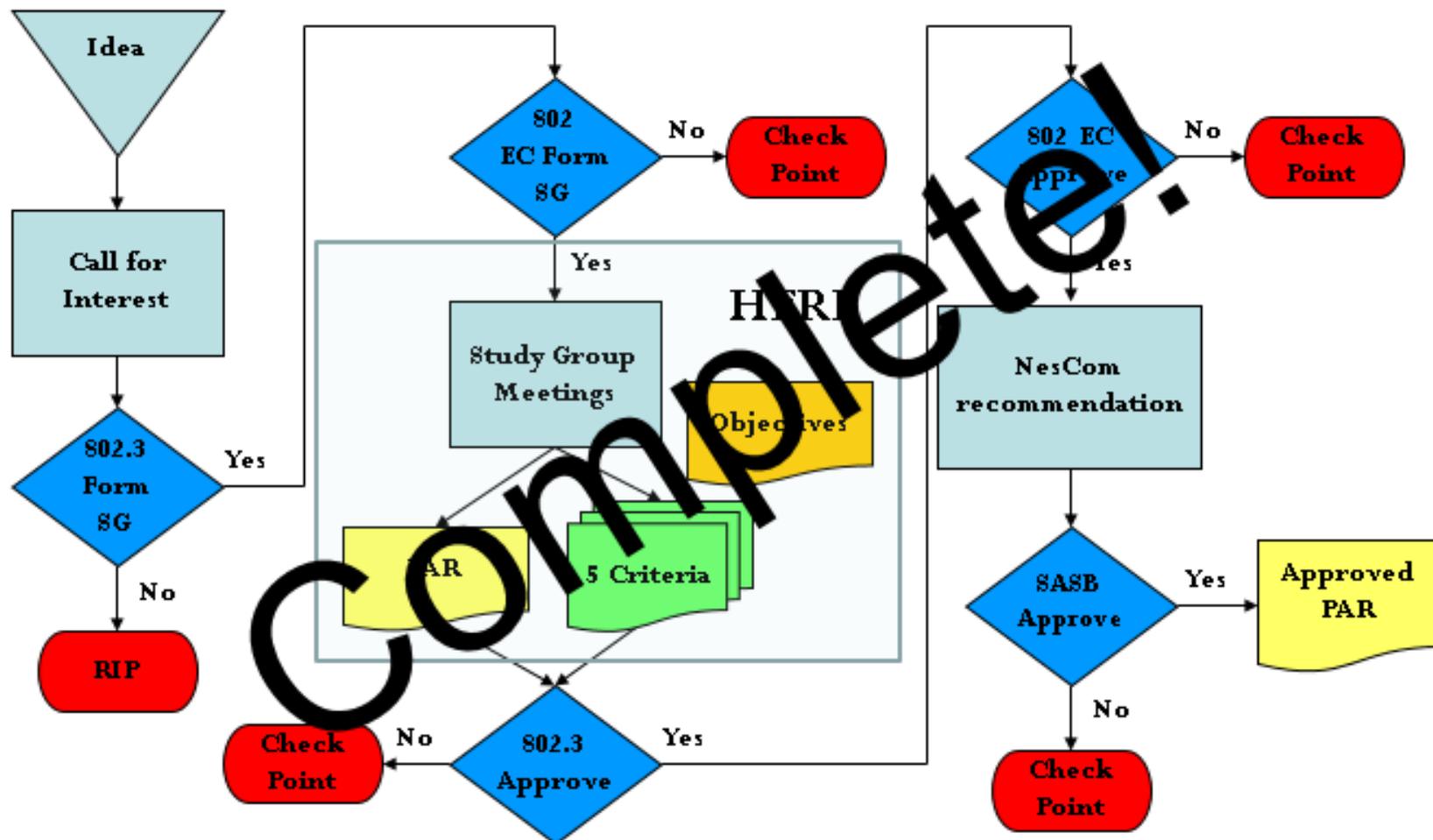
Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

Overview of IEEE 802.3 Standards Process (2/5) – Task Force Comment Phase
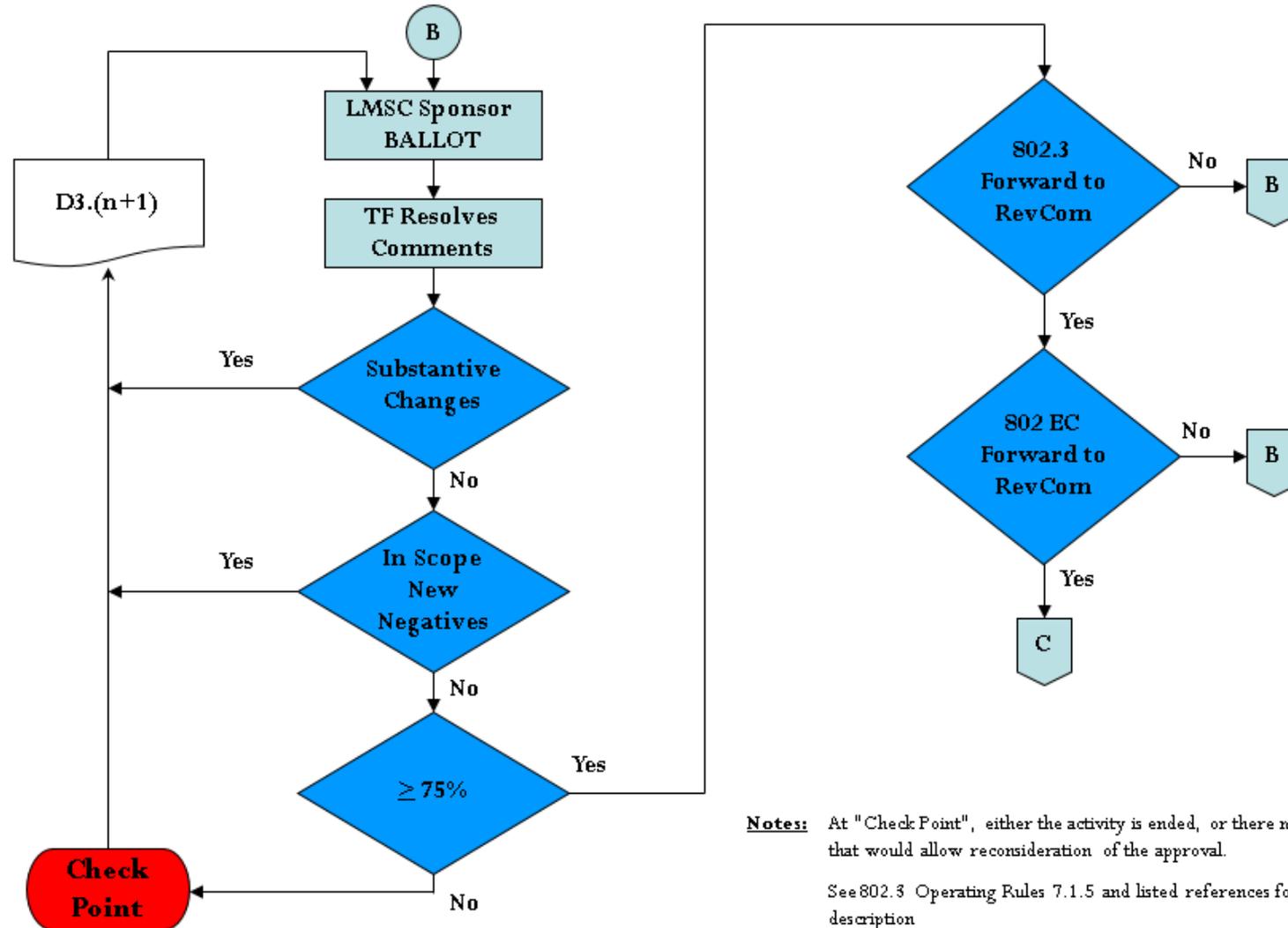
Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase

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

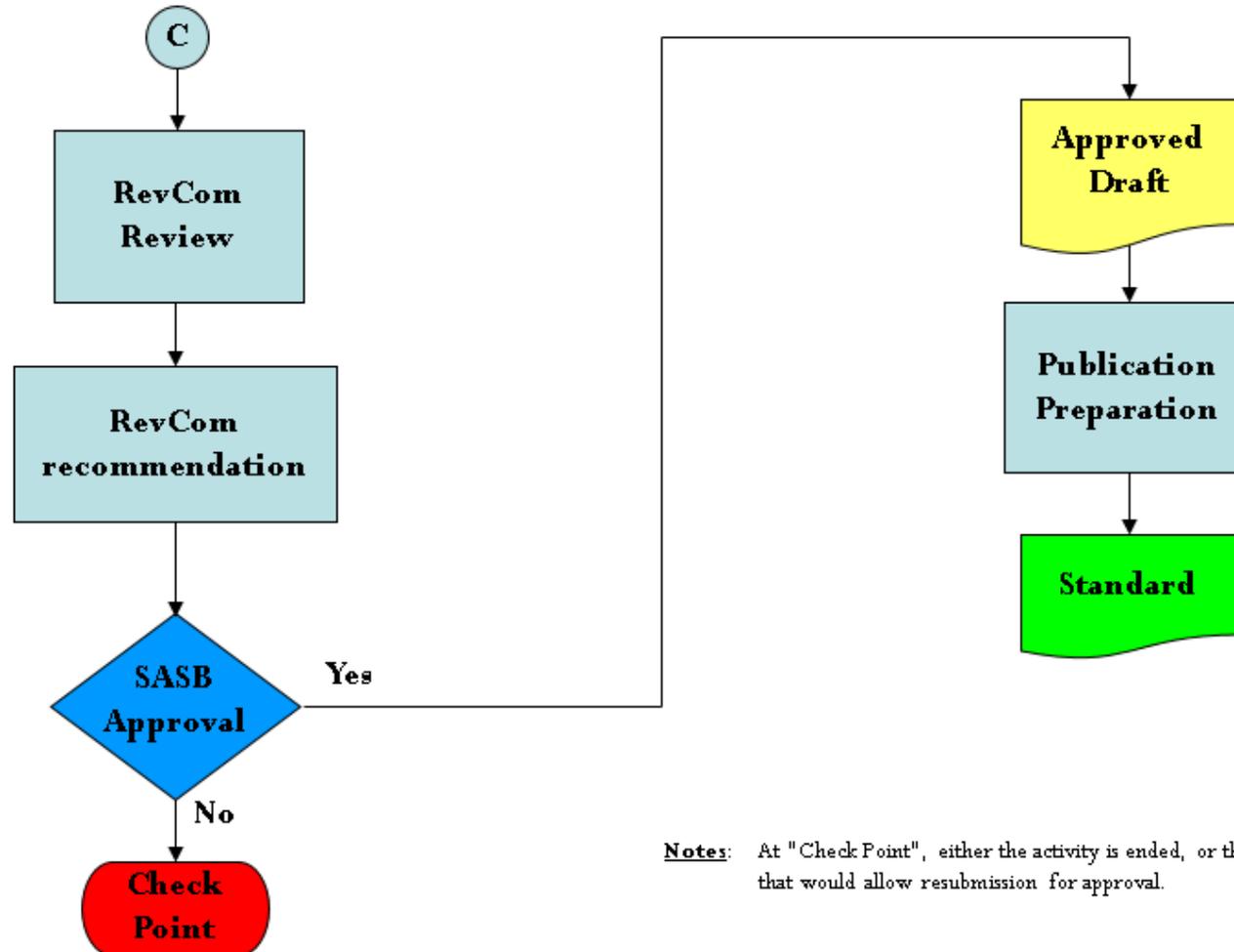# Overview of IEEE 802.3 Standards Process (4/5)- Sponsor Ballot Phase

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

C

RevCom
Review

RevCom
recommendation

SASB
Approval

Yes

No

Check
Point

Approved
Draft

Publication
Preparation

Standard

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

IEEE P802.3CK – 100 GB/S, 200 GB/S, 400 GB/S ELECTRICAL INTERFACES TASK FORCE - APPROVED PROJECT DOCUMENTS

- PAR: http://www.ieee802.org/3/ck/P802_3ck_PAR_140518.pdf

- CSD: http://www.ieee802.org/3/ck/P802_3ck_CSD_06apr18.pdf

- Objectives: http://www.ieee802.org/3/ck/P802_3ck_Objectives_2018mar.pdf

REFLECTOR AND WEB

- To subscribe to the 100GEL reflector, send an email to: *ListServ@ieee.org*

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

  subscribe **STDS-802-3-100GEL** *<yourfirstname> <yourlastname>*

  end

- Send 100GEL reflector messages to:

  STDS-802-3-100GEL@LISTSERV.IEEE.ORG

- Task Force web page URL:

  http://www.ieee802.org/3/ck/index.html

ATTENDANCE

- Tutorial Material on attendance tool

  - http://ieee802.org/3/minutes/attendance_procedures.pdf

- Access details

  - URL: http://imat.ieee.org/

  - You may need to sign off your VPN to record attendance

GOALS FOR THE MEETING

- Technical discussions working towards baseline consensus
- Adopt baselines where consensus is close or already formed
- Understand direction or next step towards baseline adoption in May

TIMELINE

Adopt Baselines & Informal Review | Task Force Review | Working Group Ballot | Sponsor Ballot

WE ARE HERE

Draft 0.1? Draft 1.0 Draft 1.1 Draft 1.2* Draft 2.0 Draft 2.1 Draft 2.2 Draft 2.3* Draft 3.0 Draft 3.1 Draft 3.2*

May · July · September · November · January · March · May · July · September · November · January · March · May · July · September · November · January · March

2019 · 2020 · 2021

Enough direction to write a draft

Technical Completeness

Major changes Complete

— Plenary meeting   — Interim meeting   * These drafts should have no/minor comments in order to move to next phase of the project.

LIAISONS AND COMMUNICATIONS

- none

TUESDAY

Time	Presenter	Affiliation	Title	File Name	Duration
8:00 AM	Beth Kochuparambil	Cisco	Agenda	agenda_3ck_01_0319	0:35
8:35 AM	Matt Brown	Macom	802.3ck Editorial Update	brown_3ck_01_0319	0:20
8:55 AM	Chris DiMinico	MC Communicati	(late) Baseline proposal for copper twinaxial cable specifications	diminico_3ck_01_0319	0:30
9:25 AM	Tom Palkert	Molex	QSFP-DD Simulated Cable data	palkert_3ck_01_0319	0:25
9:50 AM	Nathan Tracy	TE Connectivity	100 Gbps OSFP Cable Assembly Insertion Loss Analysis and Channel Contrib	tracy_3ck_01_0319	0:30
10:20 AM			BREAK		0:15
10:35 AM	Piers Dawe	Mellanox	(late) C2M and CR loss budgets	dawe_3ck_01_0319	0:25
11:00 AM	Adam Healey	Broadcom	Considerations for the minimum COM limit	healey_3ck_03_0319	0:30
			Discussion & Straw Polls?		
12:00 PM			BREAK		1:30
1:30 PM	Hiroaki Kukita	Yamaichi	100GEL C2M Channel model Study Update	kukita_3ck_01_0319	0:10
1:40 PM	Jane Lim	Cisco	100G C2M Channel Update	lim_3ck_01_0319	0:15
1:55 PM	Phil Sun	Credo	Draft Baseline Proposal for 100GE/200GE/400GE C2M	sun_3ck_03_0319	0:35
2:30 PM	Mike Li	Intel	A Draft Baseline for "Chip-to-Module 400 Gb/s Four Lane Attachment Unit I	li_3ck_02_0319	0:25
2:55 PM	Phil Sun	Credo	100GE/200GE/400GE C2M Simulation Update	sun_3ck_01_0319	0:30
3:25 PM			BREAK		0:15
3:40 PM	Ali Ghiasi	Ghiasi Quantum	Updated C2M Simulation	ghiasi_3ck_01_0319	0:25
4:05 PM	Mike Li	Intel	(late) Simulations for 100G/per lane Chip-to-Module Interface	li_3ck_03_0319	0:25
			Discussion & Straw Polls		
tentative	Rich Mellitz	Samtec	ERL feature additions required for C2M in COM 2.60	mellitz_3ck_02_0319	0:20
tentative	Rich Mellitz	Samtec	Exploring System Noise, eta_0, for Usage in COM	mellitz_3ck_01_0319	0:30
6:00 PM			BREAK FOR THE DAY - Social begins at 6:30pm (on the 34th of HRV)		1:15

WEDNESDAY

Time	Presenter	Affiliation	Title	File Name	Duration
8:00 AM	Beth Kochuparambil	Cisco	Plan for the day		0:05
8:05 AM	Howard Heck	Intel	Baseline Proposal for 100, 200 and 400 Gb/s Backplane	heck_3ck_02_0319	0:25
8:30 AM	Mau-lin Wu	Mediatek	COM Parameters Proposal for KR	wu_3ck_01_0319	0:35
9:05 AM	Mike Li	Intel	ERL Study for 100G Backplane	li_3ck_03_0319	0:25
9:30 AM	Howard Heck	Intel	Floating Tap Benefit for Backplane Channels	heck_3ck_01_0319	0:40
10:10 AM			BREAK		0:15
10:25 AM	Yuchun Lu	Huawei	Analysis of Potential Solutions for 100GBase-CR/KR error propagation	lu_3ck_02_0319	0:40
11:05 AM	Xiang He	Huawei	Error statistics analysis for cable and backplane channels	he_3ck_01_0319	0:30
11:35 AM	Pete Anslow	Ciena	RS(544,514) FEC performance for RR/CR 100G and 400G	anslow_3ck_01_0319	0:30
12:05 PM			BREAK		1:15
1:20 PM	Ilya Lyubomirsky	Inphi	New Insights on DFE Burst Error Impact for 100G KR/CR FEC	lyubomirsky_3ck_01_0	0:30
1:50 PM	Phil Sun	Credo	Error Statistics and 100GE FEC Schemes	sun_3ck_02_0319	0:30
2:20 PM	Yuchun Lu	Huawei	Elimination of DFE Error Propagation and Post-FEC Error Floor (Precoding 2.	lu_3ck_01_0319	0:30
			BREAK		0:15
			Discussion & Strawpolls?		
tentative	Mau-lin Wu	Mediatek	Correlation of on-die termination to C_d value in COM model	wu_3ck_02_0319	0:20
tentative	Liav Ben Artsi	Marvell	Correlating COM's Excessive Capacitance C_Die Value to Measurements	benartsi_3ck_01_0319	0:20
			Discussion & Strawpolls?		
6:00 PM			BREAK FOR THE DAY - CFI's begin in our room at 6:30pm		

THURSDAY

Time	Presenter	Affiliation	Title	File Name	Duration
8:00 AM	Beth Kochuparambil	Cisco	Plan for the day		0:05
tentative	Mau-lin Wu	Mediatek	Correlation of on-die termination to C_d value in COM model	These will be the first presentations pushed from Tuesday or Wednesday if time is running short	0:20
tentative	Liav Ben Artsi	Marvell	Correlating COM's Excessive Capacitance C_Die Value to Measurements		0:20
tentative	Rich Mellitz	Samtec	ERL feature additions required for C2M in COM 2.60		0:20
tentative	Rich Mellitz	Samtec	Exploring System Noise, eta_0, for Usage in COM		0:30
	Discussions, Straw Polls, & Motions Closing Business				
12:00 PM	CLOSE OF MEETING - Working Group Mtg starts @ 1:00 PM				

FUTURE MEETINGS

- May Interim – Salt Lake City, Utah, USA
  - Week of May 20th

- July Plenary – Vienna, Austria
  - Week of July 15

- September Interim – Indianapolis, Indiana
  - Week of September 9

- See http://www.ieee802.org/3/interims/index.html for more information
- Anyone interested in hosting a interim meeting contact me or the IEEE 802.3 Executive Secretary Steve Carlson.

FUTURE MEETINGS

- 9 weeks before March meeting.

- Looking at **four 2hour Ad Hocs** between now and May.

  - Wednesdays at 7am PST (to be announced)

  - Will cancel or shorten on the Tuesday prior as needed.

THANK YOU!