Agenda and General Information

IEEE P802.3ck 100 Gb/s, 200 Gb/s, and 400 Gb/s
Electrical Interfaces Task Force

Kent Lusted, Vice-Chair
Employed by and Affiliated with Intel Corporation
September 11-13, 2019 Indianapolis, IN, USA

Agenda

- Appointment of Recording Secretary
- Welcome and Introductions
- Approve Agenda
- Approve July 2019 Plenary 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
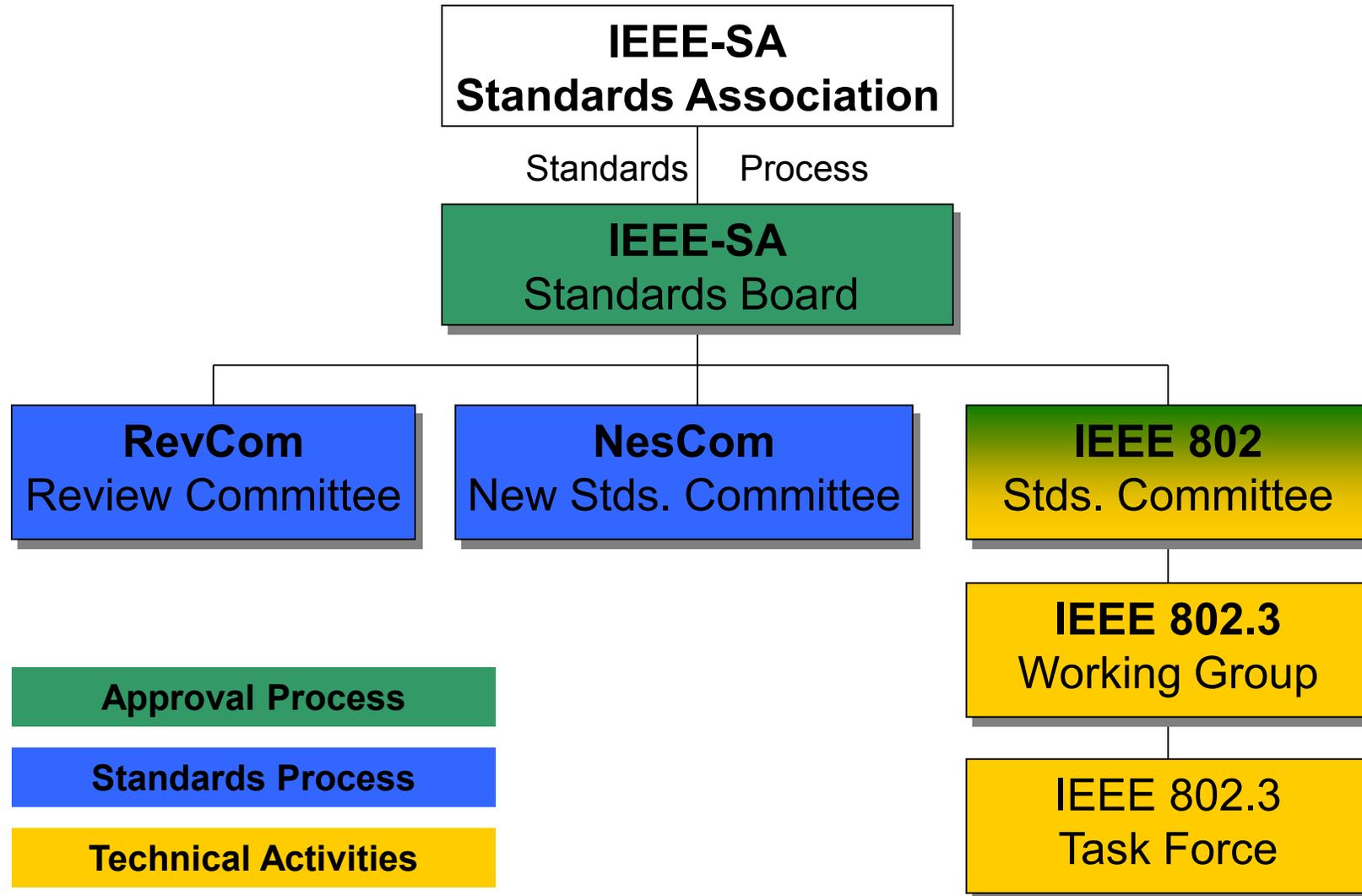
Task Force Decorum

- 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. (January 2019 IEEE-SA Standards Board Ops Manual 5.3.3.2)
- Press (i.e., anyone reporting publicly on this meeting) are to announce their presence (January 2019 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
Stds. Committee

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 **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

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

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

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

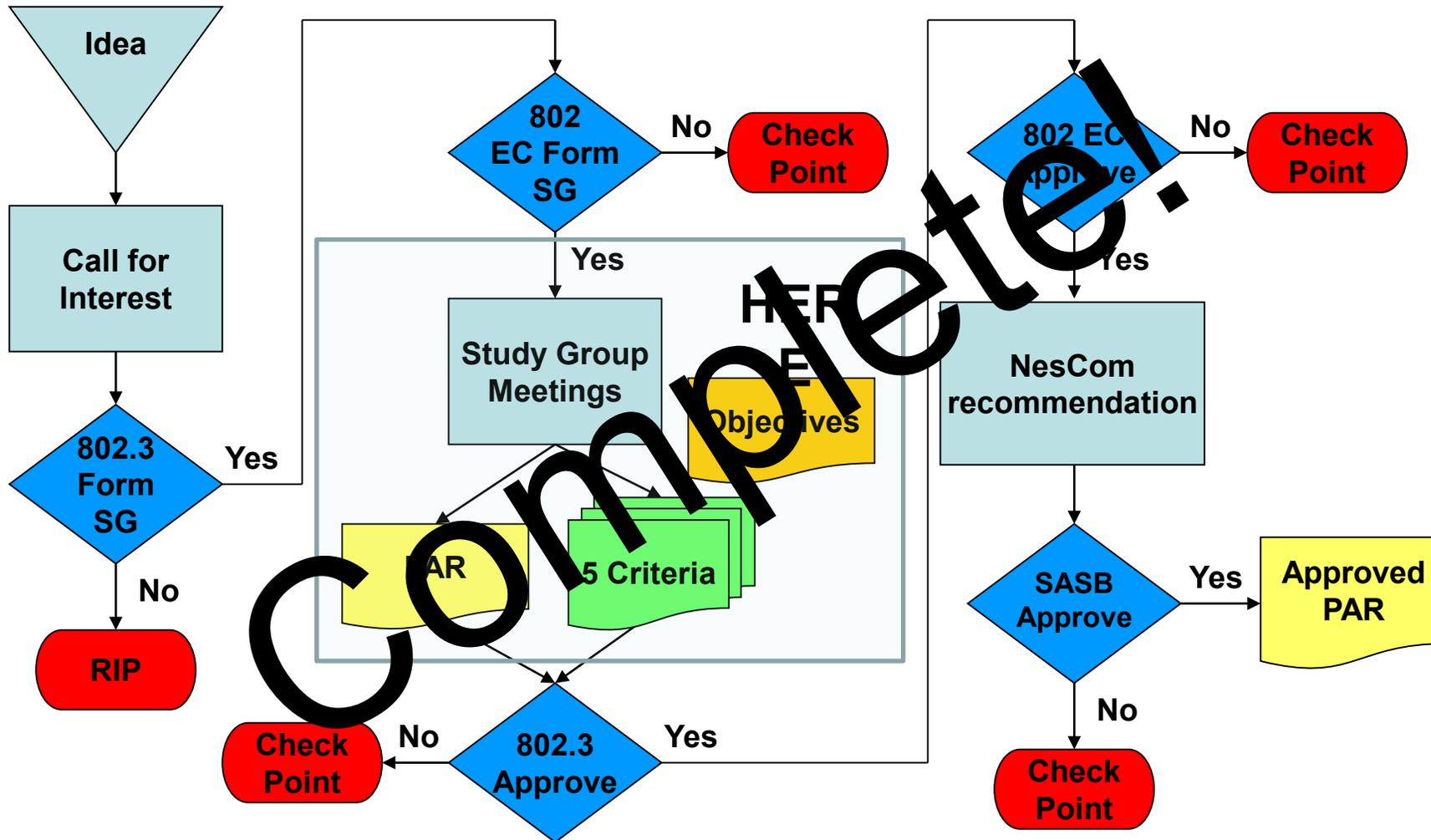IEEE

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)

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

WE ARE HERE

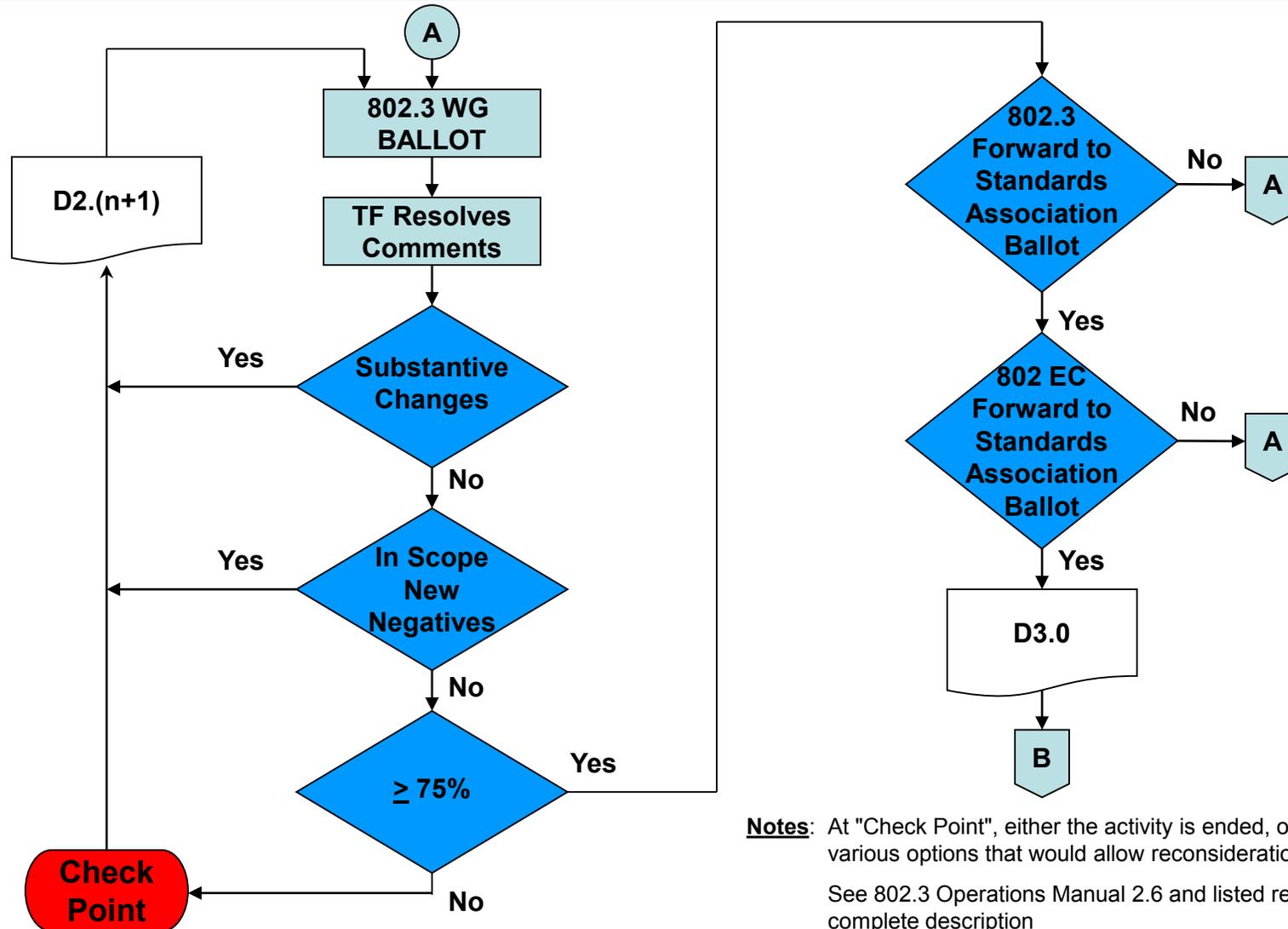**Notes**: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

See 802.3 Operations Manual 2.6 and listed references for complete description
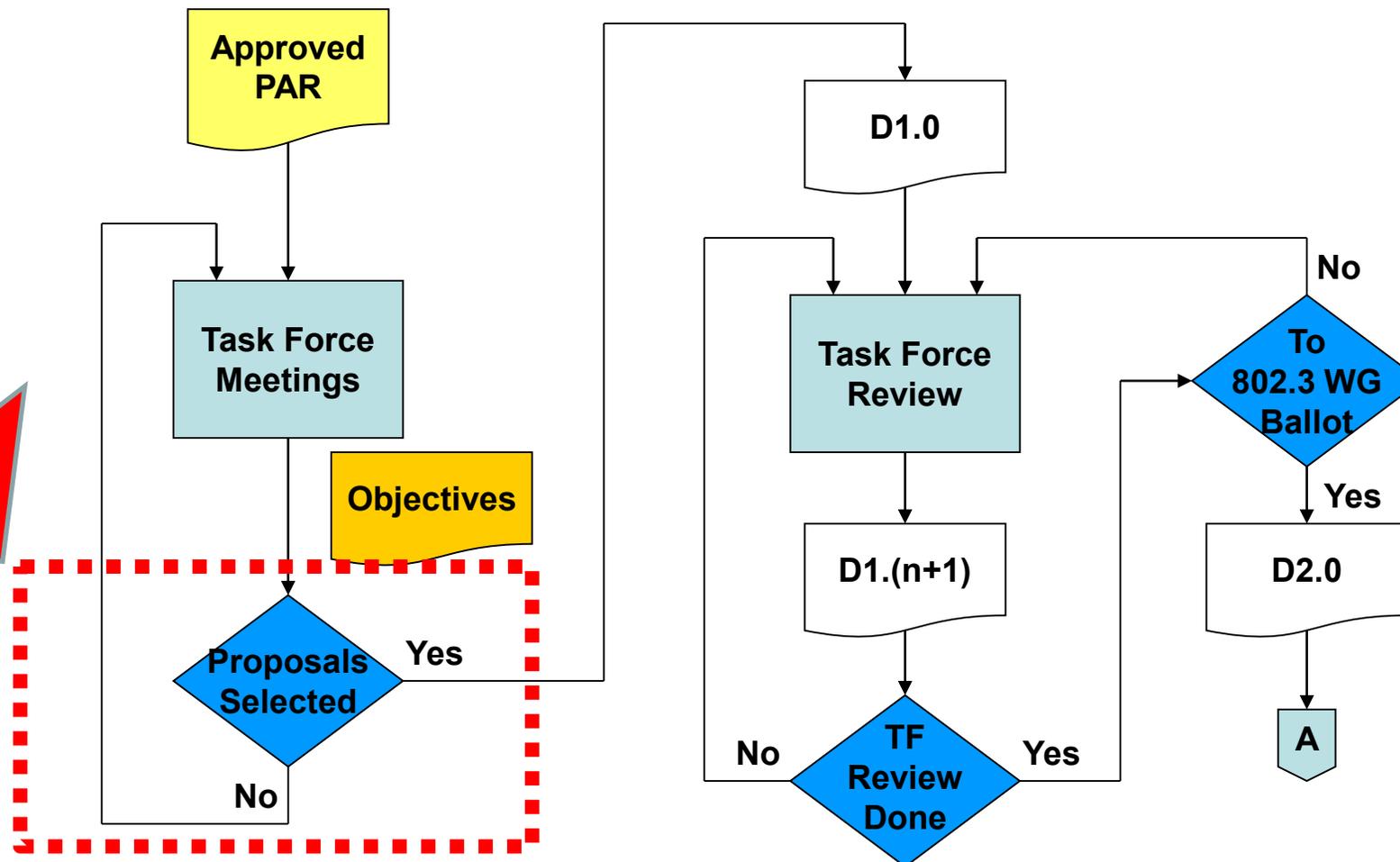
Overview of IEEE 802.3 Standards Process (4/5)- IEEE Standards Association (SA) Ballot Phase
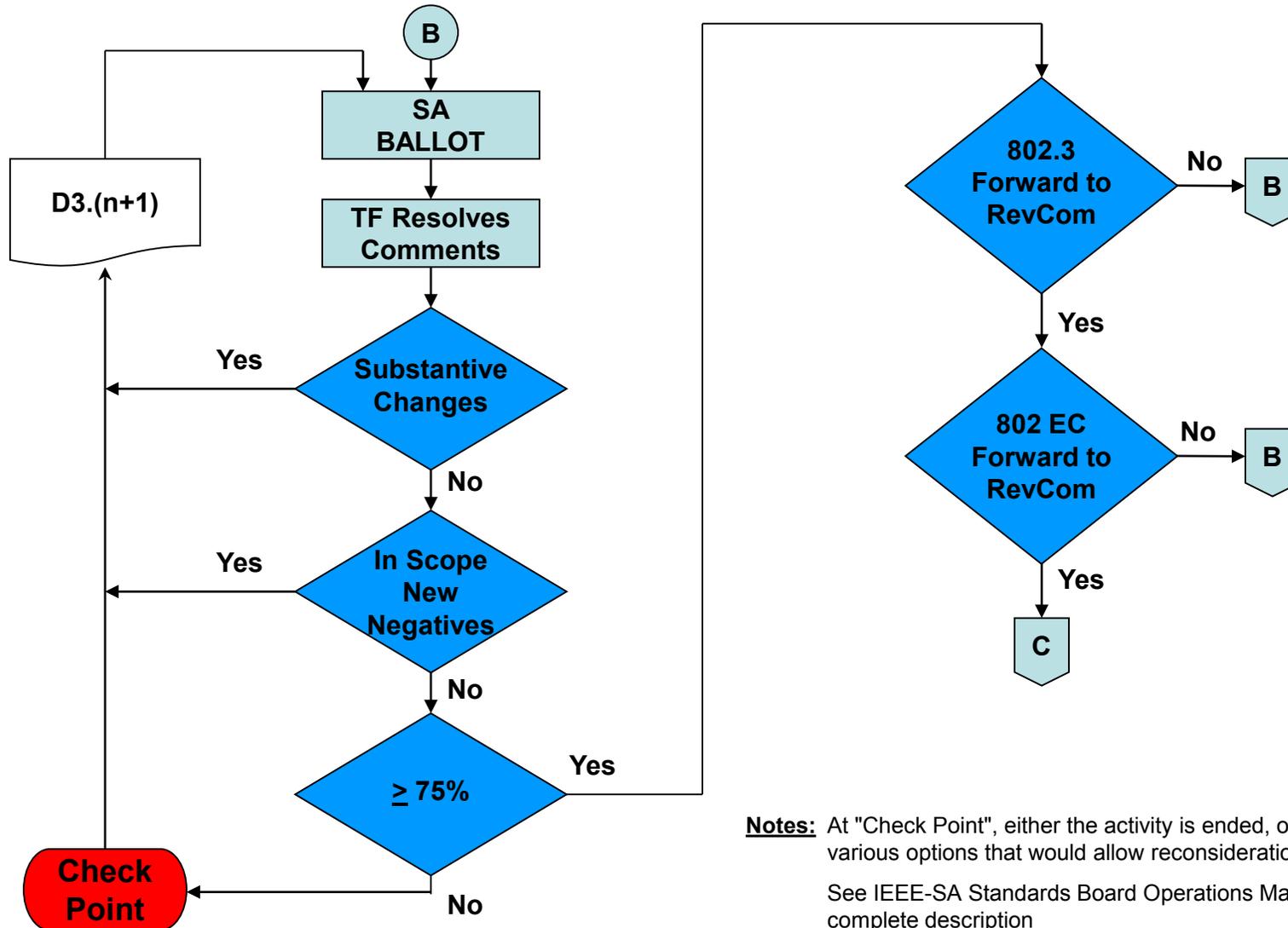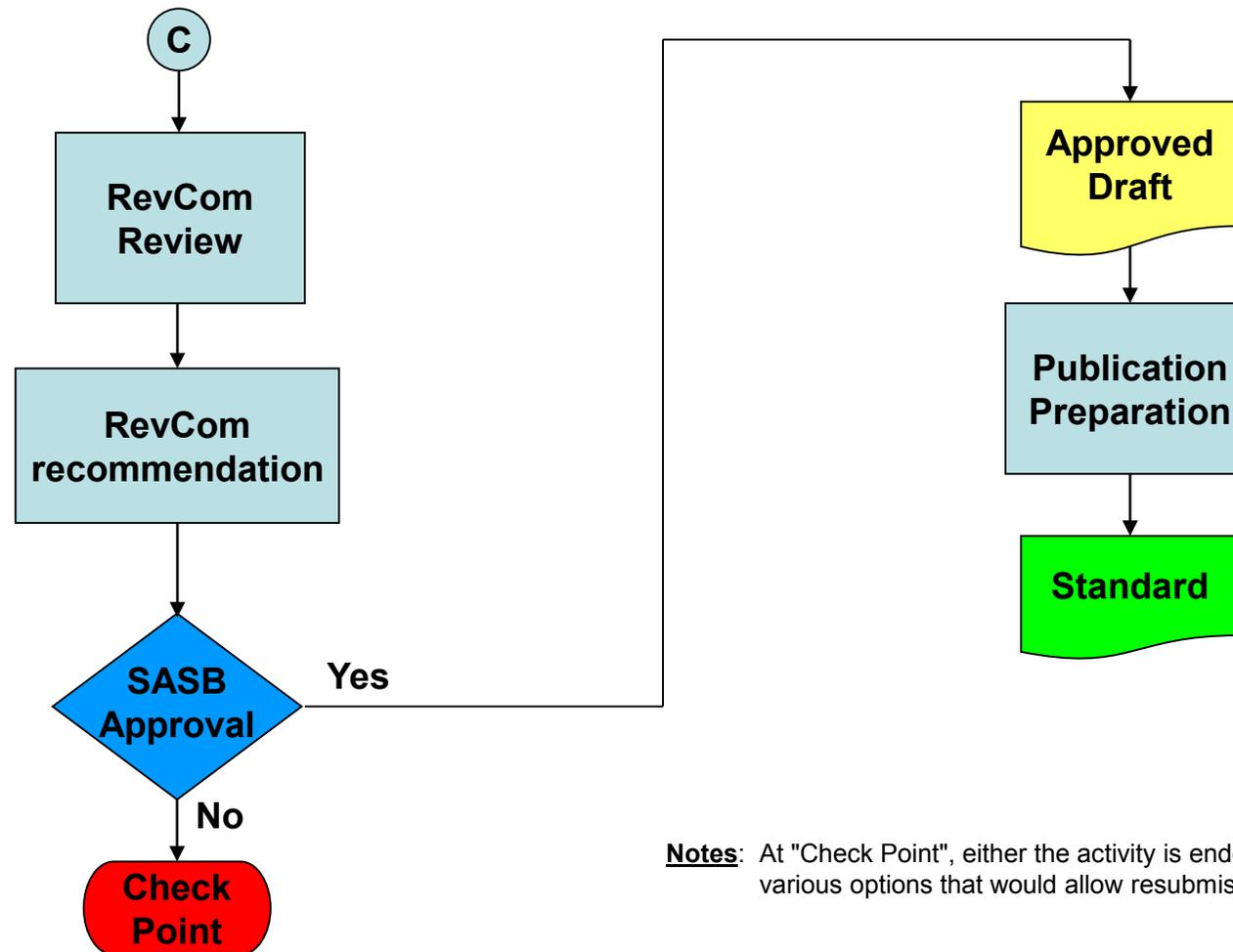

Notes: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

See IEEE-SA Standards Board Operations Manual 5.4 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.

Task Force Leadership Team

- TF Chair: Beth Kochuparambil (Cisco)
- TF Vice-Chair: Kent Lusted (Intel)
- TF Chief Editor: Matt Brown (Independent)

Editor	Duties
Matt Brown	Chief Editor, C2M/C2C AUI annexes, legacy clauses
Arthur Marris	Clauses 30/45/73 and other legacy clauses
Howard Heck	CR Clause
Chris Diminico	CR Clause cable assembly subclauses/annexes
Phil Sun	KR Clause
Mark Gustlin	New 100G FEC (if adopted)
Jeff Slavick	Advisor and reviewer for logic clauses
Mike Dudek	Advisor and reviewer for CR/KR/AUI clauses
Adee Ran	Advisor and reviewer for CR/KR/AUI clauses

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-802-30100GEL@listserv.ieee.org

- Task Force web page URL:

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

Task Force Private Area

- URL: http://www.ieee802.org/3/ck/private/index.html
  - Username: 802.3ck
  - Password: <<*xxxxxxx*>>

- 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.

Attendance

- 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

Goals for the meeting

- Technical presentations and discussions towards baseline proposals
- Adopt baselines where consensus exists
- Develop plan to close C2M, C2C, and Copper Cables baselines no later than November 2019!
  - 8 weeks away

Liaisons and Communications

- None at this time

IEEE P802.3ck 100 Gb/s, 200 Gb/s, and 400 Gb/s Electrical Interfaces -- Approved Project Documents

- PAR
  - http://www.ieee802.org/3/ck/P802_3ck_PAR_14may18.pdf
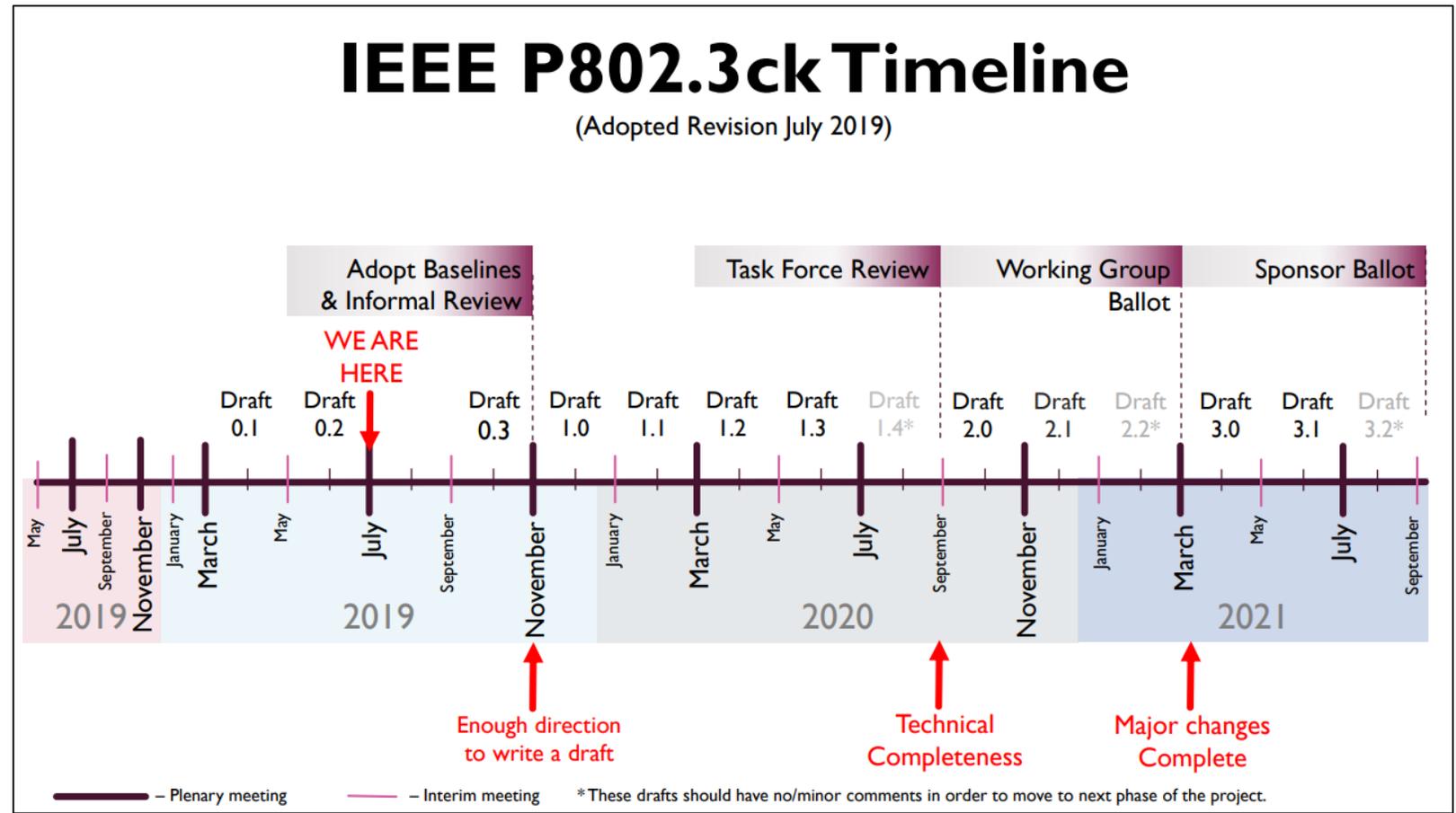- CSD
  - http://www.ieee802.org/3/ck/P802_3ck_CSD_06apr18.pdf
- Objectives
  - http://www.ieee802.org/3/ck/P802_3ck_Objectives_2018mar.pdf

IEEE P802.3ck Timeline

- Updated in July 2019

- Based on this meetings contributions, we are at risk of missing the November deadline!

http://www.ieee802.org/3/ck/P802_3ck_Timeline_18july19.pdf

Presentations – Wednesday

Topic	Time	Author(s)	Affiliation(s)	Title	Duration
	9:00:00 AM	Kent Lusted	Intel	Agenda	0:45
	9:45:00 AM	Matt Brown	Independent	Editors report	0:10:00
KR	9:55:00 AM	Howard Heck	Intel	Backplane Reference Rx Tap Weight Data	0:30:00
	10:25:00 AM	Break			0:20:00
KR	10:45:00 AM	Mike Peng Li	Intel	ERL Investigations for Ethernet 106G Backplane (II)	0:20:00
KR	11:05:00 AM	Rich Mellitz	Samtec	ERL KR Baseline Proposal	0:20:00
	11:25:00 AM	Discussions & Straw Polls			0:40
	12:05:00 PM	Lunch			1:15:00
C2C	1:20:00 PM	Rick Rabinovich	Keysight	Examples of C2C Channels with Impairments 10dB 16dB 18dB 20dB Test Cases	0:30:00
C2C	1:50:00 PM	Mike Peng Li	Intel	106Gbps C2C COM Investigation (II)	0:25:00
C2C	2:15:00 PM	Ali Ghiasi	Ghiasi Quantum	C2C COM Simulation	0:20:00
C2C	2:35:00 PM	Mike Peng Li	Intel	Baseline Proposal for "100 Gb/s, 200 Gb/s, and 400 Gb/s Chip-to-Chip Attachment Un	0:30
	3:05:00 PM	Break			0:20:00
	3:25:00 PM	Discussions & Straw Polls			0:30
FEC	3:55:00 PM	mark Gustlin	Cisco	100GBASE-KR1/CR1 FEC Thoughts	0:30:00
FEC	4:25:00 PM	Ilya Lyubomirsky	Inphi	FEC Latency and Power/Area Tradeoffs for 100G KR/CR	0:20:00
FEC	4:45:00 PM	Yan Zhuang	Huawei	Summary of Error Propagation for 100GBASE-KR1/CR1	0:15:00
FEC	5:00:00 PM	Yan Zhuang	Huawei	Auto-Negotiation for Dual mode FEC	0:25:00
	5:25:00 PM	Discussions & Straw Polls			0:35
	6:00:00 PM	Break for the Day			0:0

Note –Times listed are subject to change.

Presentations – Thursday

Topic	Time	Author(s)	Affiliation(s)	Title	Duration
	9:00:00 AM	Kent Lusted	Intel	Agenda	0:05
C2M	9:05:00 AM	Mark Kimber	Semtech	Module on-die termination model	0:25:00
C2M	9:30:00 AM	Phil Sun	Credo	C2M TP1a Criteria Considering Both Long and Short Host Traces	0:30:00
	10:00:00 AM	Break			0:20:00
C2M	10:20:00 AM	Ali Ghiasi	Ghiasi Quantum	C2M COM Analysis on short and long channels	0:20:00
C2M	10:40:00 AM	Mike Dudek	Marvell	Comparison of C2M performance at TP1a with whole channel performance	0:30:00
C2M	11:10:00 AM	Mau-Lin Wu	Media Tek	Host to Module Short Channel Issue and Possible Solutions	0:30:00
	11:40:00 AM	Lunch			1:15:00
	12:55:00 PM	Discussions & Straw Polls			0:30
CR	1:25:00 PM	Liav Ben-Artsi	Marvell	Representing imperfections for CR Host Board	0:25:00
CR	1:50:00 PM	Rich Mellitz	Samtec	CR Vmin and Vf Decisions	0:25:00
CR	2:15:00 PM	Rich Mellitz	Samtec	CA COM parameters SNR_TX and ETA_0 Baseline Proposal	0:25:00
CR	2:40:00 PM	Jane Lim	Cisco	100G CR End-to-End Channel Analysis Update (II)	0:25:00
	3:05:00 PM	Break			0:30:00
	3:35:00 PM	Discussions & Straw Polls			1:00:00
	4:35:00 PM	Break for the Day			

Note –Times listed are subject to change.

Presentations - Friday

Topic	Time	Author(s)	Affiliation(s)	Title	Duration
	9:00:00 AM	Kent Lusted	Intel	Agenda	0:05
	9:05:00 AM	Discussions & Straw Polls			1:00:00
	10:05:00 AM	Break			0:20:00
	10:25:00 AM	Discussions & Straw Polls, Future meeting, closing business			1:30:00
	11:55:00 AM	Close of Meeting			1:15:00

Note –Times listed are subject to change.

Meeting Map

- Wednesday-Friday: Grand 5 (this room)

Future Meetings

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

- November 2019 Plenary
  - Week of November 11, 2019
  - Waikoloa Village, HI, USA

- January 2020 Interim
  - Week of January 20, 2020
  - Geneva, Switzerland

- March 2020 Plenary
  - Week of March 16, 2020
  - Atlanta, GA, USA

- Anyone interested in hosting a interim meeting contact me or the IEEE 802.3 Executive Secretary Steve Carlson.

Ad Hocs

- Will continue 2 hour ad hocs
  - Wednesdays at 7am Pacific (to be announced over email reflector)
    - Assume start on September 18
  - Weekly or every other week recurrence
  - Will cancel or shorten on Tuesday prior, as needed.
  - Rotating Agenda of Topics: Copper Cable, C2M, C2C, Backplane, Logic

Thank You!