

IEEE 802dm Hybrid Meeting Practices

- In-room Attendees:
 - In Zoom choose connect without audio before you join
 - Use the Zoom raise-hand feature to indicate you want to speak
 - Wait to be called on before speaking (even at the microphone)
 - Repeat any questions that may be asked away from the microphone
- Remote Attendees:
 - Join Zoom and set Zoom audio as ‘music’
 - Use the Zoom raise hand feature to indicate you want to speak
 - Wait to be called on to speak – Please MUTE otherwise

Agenda and General Information

IEEE P802.3dm Asymmetrical Electrical Automotive
Ethernet Task Force

Jon Lewis

Dell Technologies

802.3dm Interim Meeting, 10-11 March 2025

Atlanta, GA, USA

Agenda

- Welcome and Introductions
- Approve Agenda
- Approve prior meeting minutes
- Goals for this meeting
- Big Ticket Items
- Reflector and Web
- Ground Rules
- IEEE
 - Structure, Bylaws and Rules
 - Call for Patents
 - IEEE Standards Process
- Liaisons and Communications
- Presentations
- Closing Business
- Future Meetings

Approve agenda (Motion #1)

- Move to approve the agenda as posted
- M:
- S:

Approve prior meeting minutes (Motion #2)

- Move to approve:
 - Task Force minutes from Jan 2025
 - https://www.ieee802.org/3/dm/public/0125/Unconfirmed_minutes_3dm_0125.pdf
-
- M:
 - S:

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 2020 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 2020 IEEE-SA Standards Board Ops Manual 5.3.3.3)
- Please observe proper decorum in meetings
- Remote participants: Please **MUTE** unless called on
- Use the **Raise Hand feature in Zoom** to be placed in the queue (**in person and remote participants**)
- The chat should be used only to send to “Everyone”, for official business – not for side conversations.

Goals for the meeting

- Technical Presentations to progress the project

Plenary meeting - fees

- This meeting is conducted as part of the IEEE 802 Plenary meeting session. Registration and payment of fees is required, and attendance without properly registering is subject to penalties under IEEE 802 rules.
- See <https://www.ieee802.org/3/interims/index.html> for further information and a registration link

Reflector and Web

- To subscribe to the Asymmetrical Electrical Automotive Ethernet 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-ISAAC <yourfirstname> <yourlastname>
end*

- Send 100 Mb/s Long-Reach Single-Pair Ethernet Task Force reflector messages to:

STDS-802-3-ISAAC@listserv.ieee.org

- Task Force web page URL:

<https://www.ieee802.org/3/dm/index.html>

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, Only 802.3 voters vote on electronic meetings
- **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

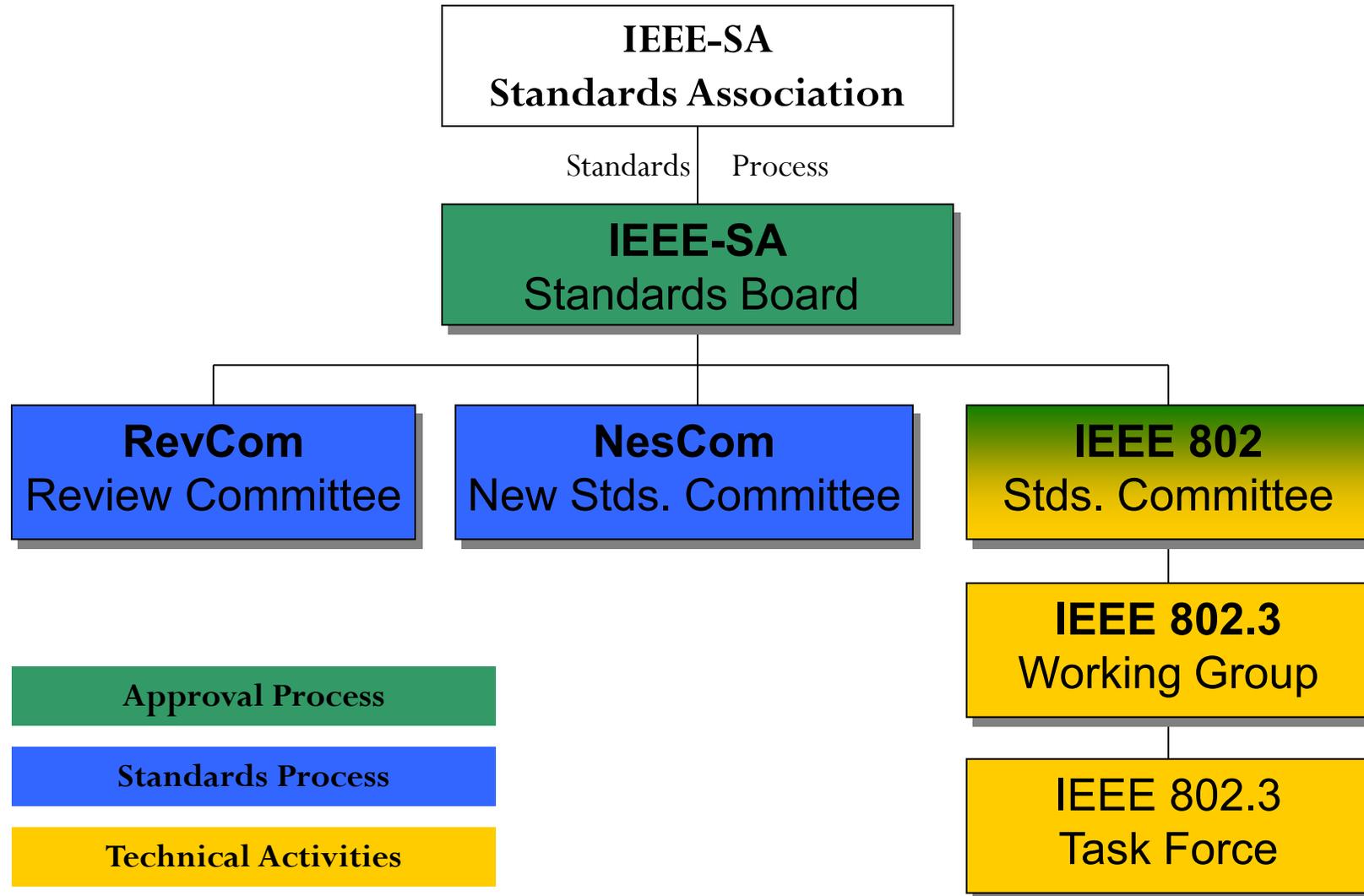
Membership and attendance recording

- Membership requirements (gaining)
 - Attendance in at least 75% of meeting slots at 2 of the last 4 plenary sessions
 - Attendance in at least 75% of meeting slots at recent IEEE 802.3 Ethernet Working Group or Task Group Interim Session may be substituted for one of the two Plenary Sessions
 - Attendance **in at least 75% of the meeting slot's duration** is required for that attendance to count towards gaining or maintaining voting membership
 - **You can only** claim IMAT attendance credit if you attend at least 75% of slot's duration
 - Officers may remove IMAT attendance credit if you attend less than 75% of slot's duration
 - Provide declaration of affiliation and valid contact information
 - Request to become member during potential voter agenda item at an IEEE 802.3 Ethernet Working Group opening or closing **plenary** meeting
- Membership requirements (retaining)
 - Continue to meet above attendance, contact, and affiliation requirements
 - Participate in **two** out of the last **three** Working Group Letter Ballot Series
- For more details see: <https://www.ieee802.org/3/rules/member.html>

Attendance

- Attendance will be taken from IMAT
 - IMAT is the official record – so be sure to sign in
- **PLEASE DO NOT FORGET TO SIGN INTO IMAT – NEED FOR CORRECTIONS IS STRONGLY DISCOURAGED**
- Please put your affiliation in your Zoom name. If you are unable to do this, please send me or Natalie a directed chat message and we will change it for you at our earliest convenience.

IEEE Structure



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.

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 WORKING GROUP 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. Formally object to the discussion immediately.

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**

INSTRUCTIONS FOR CHAIRS OF STANDARDS DEVELOPMENT ACTIVITIES

At the beginning of each standards development meeting the chair or a designee is to:

- Show the following slides (or provide them beforehand)
- Advise the standards development group participants that:
 - IEEE SA's copyright policy is described in Clause 7 of the IEEE SA Standards Board Bylaws and Clause 6.1 of the IEEE SA Standards Board Operations Manual;
 - Any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE SA Copyright Policy;
- Instruct the Secretary to record in the minutes of the relevant meeting:
 - That the foregoing information was provided and that the copyright slides were shown (or provided beforehand).

IEEE SA COPYRIGHT POLICY

By participating in this activity, you agree to comply with the IEEE Code of Ethics, all applicable laws, and all IEEE policies and procedures including, but not limited to, the IEEE SA Copyright Policy.

- Previously Published material (copyright assertion indicated) shall not be presented/submitted to the Working Group nor incorporated into a Working Group draft unless permission is granted.
- Prior to presentation or submission, you shall notify the Working Group Chair of previously Published material and should assist the Chair in obtaining copyright permission acceptable to IEEE SA.
- For material that is not previously Published, IEEE is automatically granted a license to use any material that is presented or submitted.

IEEE SA COPYRIGHT POLICY

- The IEEE SA Copyright Policy is described in the IEEE SA Standards Board Bylaws and IEEE SA Standards Board Operations Manual
 - IEEE SA Copyright Policy, see
 - Clause 7 of the IEEE SA Standards Board Bylaws
<https://standards.ieee.org/about/policies/bylaws/sect6-7.html#7>
 - Clause 6.1 of the IEEE SA Standards Board Operations Manual
<https://standards.ieee.org/about/policies/opman/sect6.html>

- IEEE SA Copyright Permission
 - <https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/permissionltrs.zip>

- IEEE SA Copyright FAQs
 - <http://standards.ieee.org/faqs/copyrights.html/>

- IEEE SA Best Practices for IEEE Standards Development
 - http://standards.ieee.org/develop/policies/best_practices_for_ieee_standards_development_051215.pdf

- Distribution of Draft Standards (see 6.1.3 of the SASB Operations Manual)
 - <https://standards.ieee.org/about/policies/opman/sect6.html>

Participant behavior in IEEE-SA activities is guided by the IEEE Codes of Ethics & Conduct

- All participants in IEEE-SA activities are expected to adhere to the core principles underlying the:
 - [IEEE Code of Ethics](#)
 - [IEEE Code of Conduct](#)
- The core principles of the IEEE Codes of Ethics & Conduct are to:
 - *Uphold the highest standards of integrity, responsible behavior, and ethical and professional conduct*
 - *Treat people fairly and with respect, to not engage in harassment, discrimination, or retaliation, and to protect people's privacy.*
 - *Avoid injuring others, their property, reputation, or employment by false or malicious action*
- The most recent versions of these Codes are available at <http://www.ieee.org/about/corporate/governance>

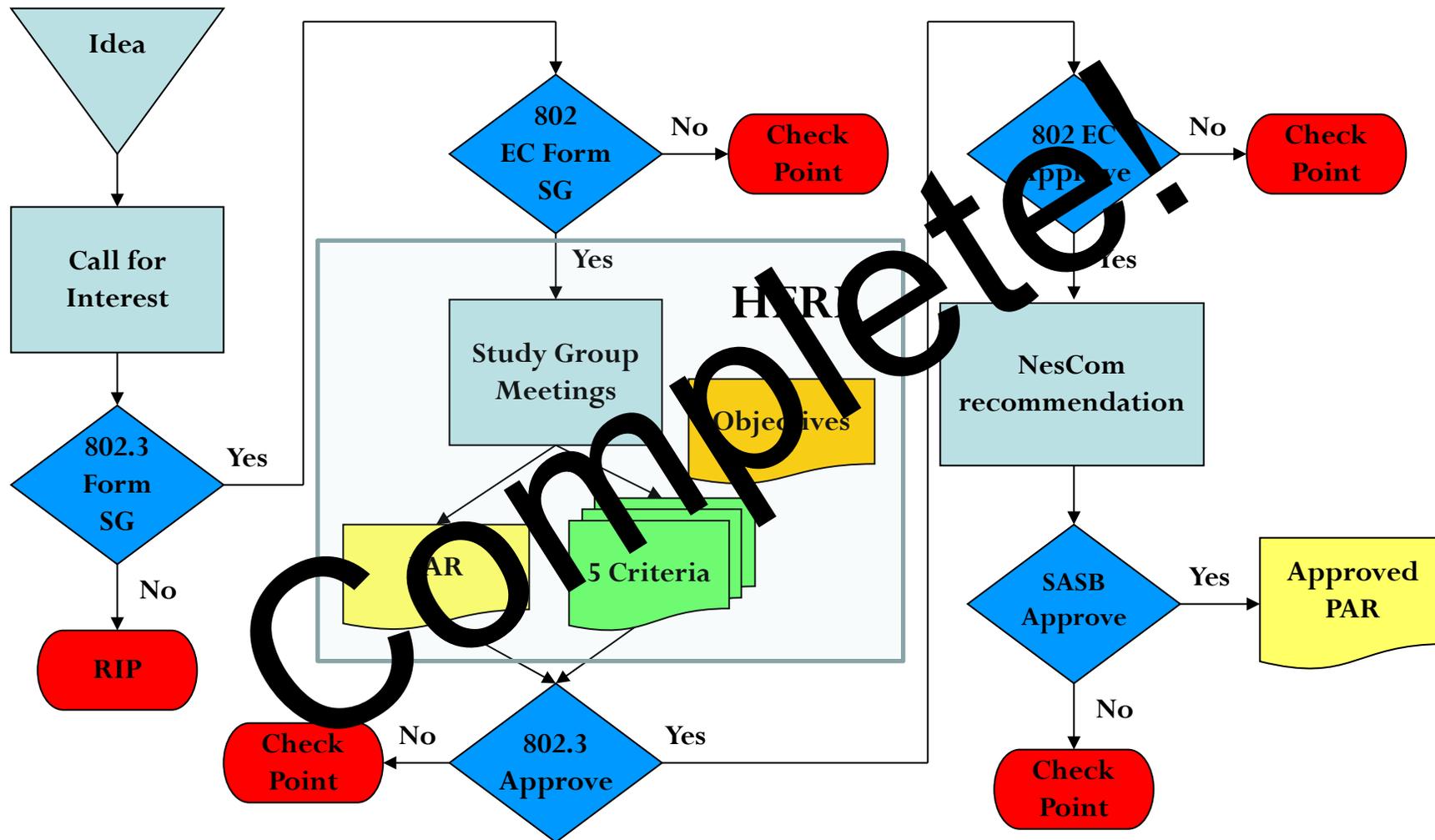
Participants in the IEEE-SA “*individual process*” shall act independently of others, including employers

- The [IEEE-SA Standards Board Bylaws](#) require that “*participants in the IEEE standards development individual process shall act based on their qualifications and experience*”
- This means participants:
 - **Shall act & vote** based on their personal & independent opinions derived from their expertise, knowledge, and qualifications
 - **Shall not act or vote** based on any obligation to or any direction from any other person or organization, including an employer or client, regardless of any external commitments, agreements, contracts, or orders
 - **Shall not direct** the actions or votes of other participants or retaliate against other participants for fulfilling their responsibility to act & vote based on their personal & independently developed opinions
- By participating in standards activities using the “*individual process*”, you are deemed to accept these requirements; if you are unable to satisfy these requirements then you shall immediately cease any participation

IEEE-SA standards activities shall allow the fair & equitable consideration of all viewpoints

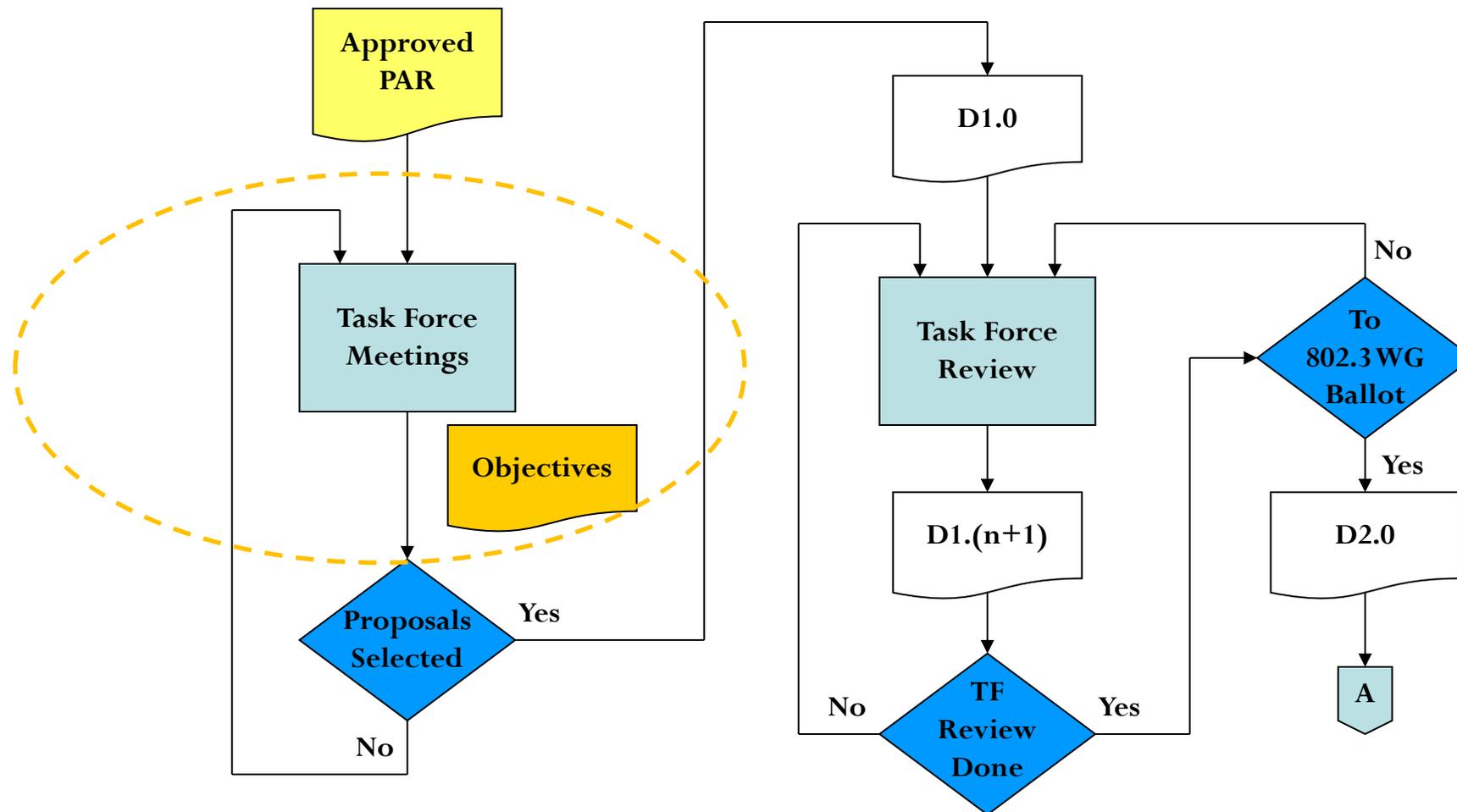
- The [IEEE-SA Standards Board Bylaws](#) (clause 5.2.1.3) specifies that *“the standards development process shall not be dominated by any single interest category, individual, or organization”*
 - This means no participant may exercise *“authority, leadership, or influence by reason of superior leverage, strength, or representation to the exclusion of fair and equitable consideration of other viewpoints”* or *“to hinder the progress of the standards development activity”*
- This rule applies equally to those participating in a standards development project and to that project’s leadership group
- Any person who reasonably suspects that dominance is occurring in a standards development project is encouraged to bring the issue to the attention of the Standards Committee or the project’s IEEE-SA Program Manager

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

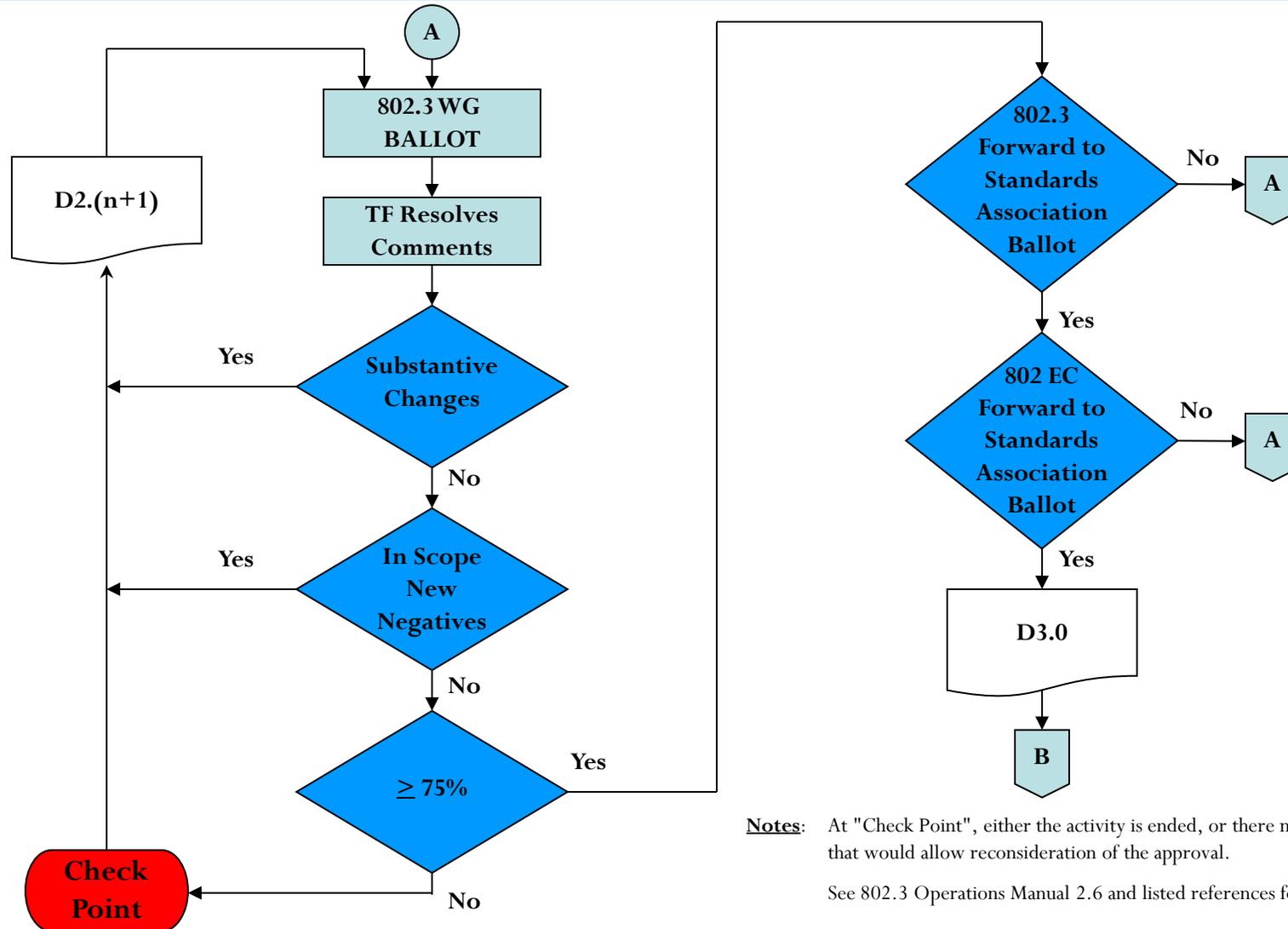


Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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

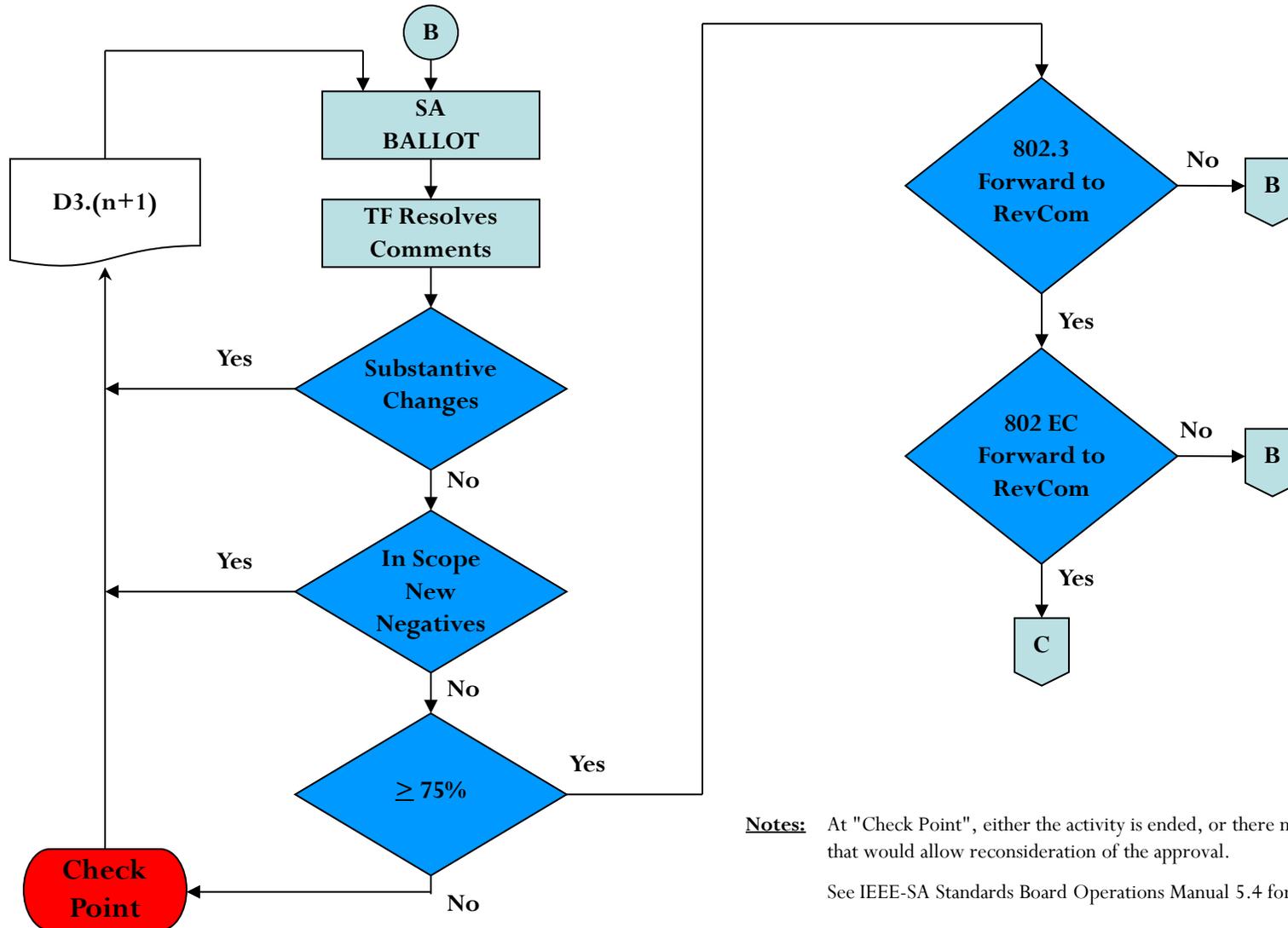


Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase



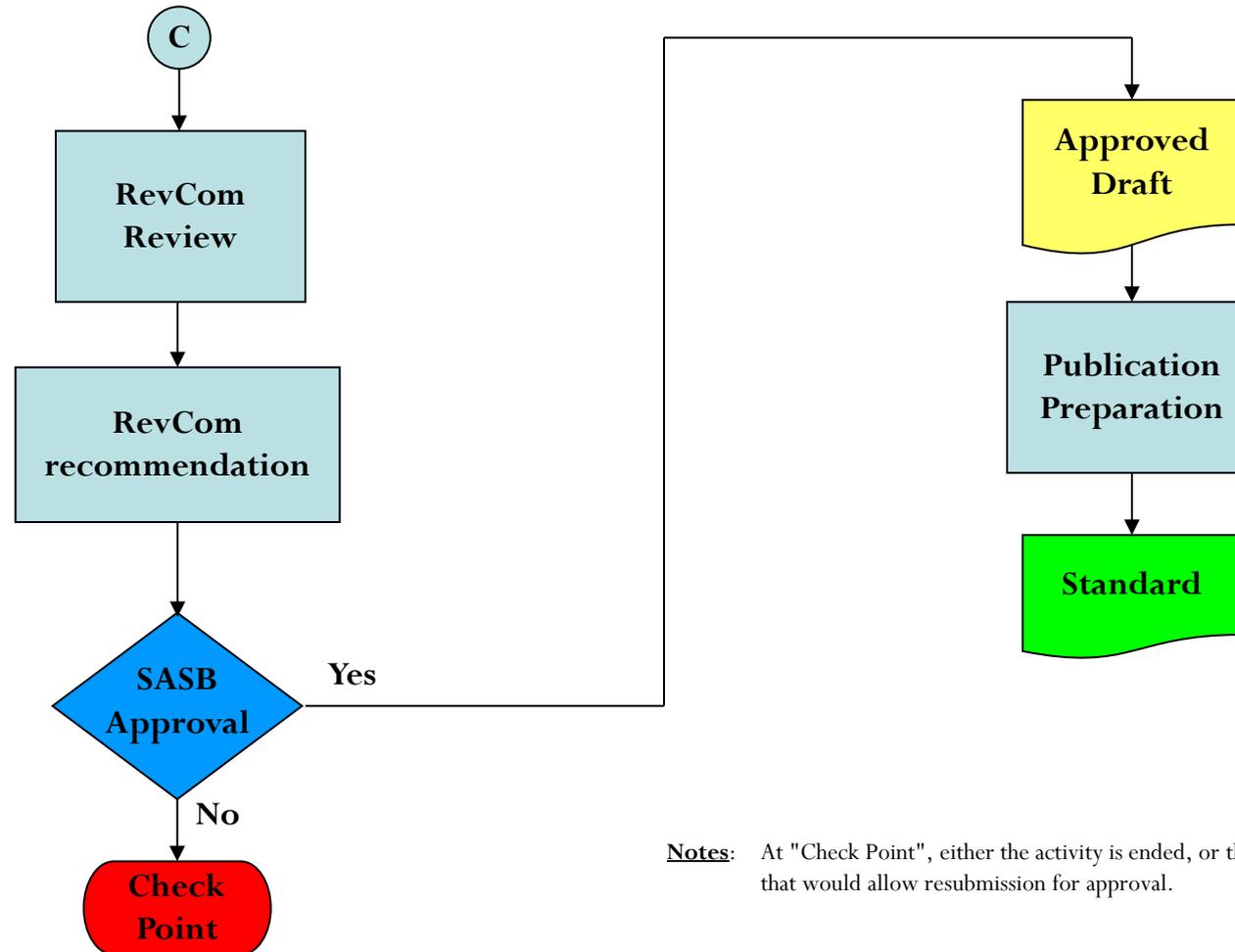
Notes: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.
See 802.3 Operations Manual 2.6 and listed references for complete description

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.

Liaisons and Communications

- ASA Liaison
 - https://www.ieee802.org/3/minutes/mar25/incoming/2025-02-11_ASA_to_IEEE%20Redacted.pdf

IEEE P802.3dm Approved Project Documents

- PAR
 - https://ieee802.org/3/dm/P802.3dm_PAR.pdf
- 5 Criteria
 - <https://mentor.ieee.org/802-ec/dcn/24/ec-24-0074-00-ACSD-p802-3dm.pdf>
- Objectives
 - https://www.ieee802.org/3/ISAAC/public/0324/Objectives_ISAAC_01_0324.pdf

Timeline

- No accepted timeline yet

Bold items are fixed. other times are approximate, and the meeting will progress faster if possible.

Presentations Day 1

Start Time EST	Title	Presentation Author(s) and Affiliation(s)
13h15	Agenda and general business	Jon Lewis, Dell Technologies
Presentations		
13h45	Text for the RL and IL Link Requirements	Rohit Sharma – Molex Rich Boyer - Aptiv
14h15	GMSLE FDD PHY Simulation Results and PHY Complexity	Jay Cordaro, Analog Devices Nick Chimento, Analog Devices
14h45	Simulated Cable Transfer Functions	Ragnar Jonsson - Marvell
15h15	Complexity and Integration of TDD Based PHY at the Camera side	Ahmad Chini, Broadcom Corporation Mehmet Tazebay, Broadcom Corporation
15h30	Break	
16h00	Linkup Process for a TDD based Camera Link	Ahmad Chini Broadcom Corporation and Mehmet Tazebay, Broadcom Corporation
16h30	Complexity of TDD vs ACT PHY	Kamal Dalmia - Aviva Links
17h00	simDM simulated PHY performance in presence of environmental noise	Ragnar Jonsson - Marvell
	On Considerations related to Transmit PSD for the Proposed Duplexing Schemes	Ramanjit Ahuja, Onsemi
17h30	End of day business	Jon Lewis, Dell Technologies

Bold items are fixed. other times are approximate, and the meeting will progress faster if possible.

Presentations Day 2

Start Time EST	Title	Presentation Author(s) and Affiliation(s)
08h00	Morning business	
08h30	ACT Receiver: The Effect of High-Pass Filter and Poor Hybrid	Hossein Sedarat, Ethernovia
09h00	Link Sync Proposal	William Lo - Axonne
09h30	On Receiver Considerations for ACT	Ramanjit Ahuja, Onsemi
09h10	Link Synchronization for Crystal-less Camera Links	Alireza Razavi – Marvell Aleksei Zhrebtsov – Marvell Ragnar Jonsson - Marvel
09h46	Draft Review	Natalie Wienckowski – IVN Solutions
10h00	Break	
10h30	End of Day business (Motions, Straw Polls, path forward)	Jon Lewis, Dell Technologies
12h15	Adjournment	

Straw Poll #1

- I would support down-selecting to the following duplexing technique:
- A: TDD (per chini et al presentations)
- B : Frequency-overlapped (ACT or GMSLE) (per Jonsson,et al or cordara presentations)

- Pick one
- A:
- B:

Straw Poll #2

- I support PAM2 modulation for 2.5G and 5G transmitters
- Yes: 53
- No: 14

Straw Poll #3

- I support insertion loss limits defined by equations on slides 5 and 6 of
- https://ieee802.org/3/dm/public/0125/Zerna_802.3dm_01_250122_IL_RL.pdf [ieee802.org]
- for STP and Coax channels respectively.

- Yes: 36
- No: 21

Straw Poll #4

- Pick one
- I support the following duplexing method for 802.3dm
 - 1. TDD: 33
 - 2. ACT: 25
 - 3. FDD (proposed under the name GMSLE): 6

Straw Poll #5

- Chicago Rules:
- I would be in favor of
 - A) PAM2 for 2.5G: 57
 - B) PAM4 for 2.5G: 19
 - C) PAM2 for 5G: 45
 - D) PAM4 for 5G: 30

Motion #4

- Move to give the editor license to add any necessary references to asymmetric PHYs in Clause 46 and its subclauses.
- M: William Lo
- S: Alireza Razavi
- Yes: 50
- No: 1
- Abstain: 9
- Motion Passes

Motion #5

- Move to adopt PAM2 for 2.5G and 5G transmitters

- M: Mehmet Tazebay
- S: Kamal Dalmia

- Yes: 33
- No: 21
- Abstain: 8
- Motion Fails

Motion #6

- Move to adopt PAM2 for the 2.5G transmitter
- M: Mehmet Tazebay
- S: Kamal Dalmia
- Yes: 49
- No: 10
- Abstain: 3
- Motion Passes

Path Forward

- Chair to report progress at the March closing, May WG meeting and July opening to keep WG informed.
- Chief Editor to support multiple FM drafts to support this effort
- Off-cycle teleconference interim every 2 weeks until July, as needed.
 - Attempt to select between the options at the May interim
- Attempt to select between the options at the July plenary
- If no selection the Chair will ask the Working group to select a draft for preparation for WG ballot.
 - In preparation for that possibility we will have a late June teleconference for the Working Group to review the drafts. (pre-circulate in June)

Potential Timeline

Draft	Meeting Date
0.6	Nov 24
0.7	Jan 25
0.8	Mar 25
0.9	May 25
1	July 25
1.1	Sept 25
1.2	Oct 25
1.3	Nov 25
2	Jan 26
2.1	Mar 26
2.2	May 26
2.3	Jun 26
3	July 26
3.1	Sept 26
3.2	Oct 26
3.3	Nov 26

Next meeting

- May 802.3 interim – New Orleans, LA USA (May 12-16)
 - In-person with remote access on a best effort basis
 - See <https://www.ieee802.org/3/interims/index.html> for information

Thank You!