

# IEEE 802dg Hybrid Meeting Practices

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- In-room Attendees:
  - In Webex choose connect without audio before you join
  - Use the Webex queue 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 Webex and set Webex audio as ‘music’
  - Use the Webex chat window to indicate you want to speak (“q”)
  - Wait to be called on to speak – Please MUTE otherwise

# Agenda and General Information

IEEE P802.3dg 100 Mb/s Long-Reach Single-Pair Ethernet Task Force

George Zimmerman

CME Consulting/ADI, APL Group, Cisco, Infineon, OnSemi, Sony

Austin, TX USA – 802.3 Interim, January 20, 2025

# Agenda

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- 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

# Motion #1

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- Move to approve the agenda as shown on agenda\_3dg\_01\_20260120.pdf slide 3:
  - M: Jon Lewis
  - S: Brian Murray
  - Procedural (> 50%) MOTION APPROVED WITHOUT OBJECTION

# Approve prior meeting minutes

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- Need to approve the November 2025 Plenary, and December 19, 2025 Interim IEEE P802.3dg meeting minutes at:

[https://www.ieee802.org/3/dg/public/May\\_2025/Unconfirmed\\_minutes\\_3dg\\_1125r1.pdf](https://www.ieee802.org/3/dg/public/May_2025/Unconfirmed_minutes_3dg_1125r1.pdf)

AND

[https://www.ieee802.org/3/dg/public/May\\_2025/Unconfirmed\\_minutes\\_3dg\\_12192025.pdf](https://www.ieee802.org/3/dg/public/May_2025/Unconfirmed_minutes_3dg_12192025.pdf)

# Motion #2

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- Move to approve the November 2025 Plenary, and December 19, 2025 Interim IEEE P802.3dg meeting minutes at:  
[https://www.ieee802.org/3/dg/public/May\\_2025/Unconfirmed\\_minutes\\_3dg\\_1125r1.pdf](https://www.ieee802.org/3/dg/public/May_2025/Unconfirmed_minutes_3dg_1125r1.pdf)  
AND  
[https://www.ieee802.org/3/dg/public/May\\_2025/Unconfirmed\\_minutes\\_3dg\\_12192025.pdf](https://www.ieee802.org/3/dg/public/May_2025/Unconfirmed_minutes_3dg_12192025.pdf)
- M: Peter Jones
- S:Jon Lewis
- Procedural (> 50%) MOTION PASSES WITHOUT OBJECTION

# General Decorum

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- An officer of the Working Group or one of its subgroups, unless prohibited by the P & P of the Standards Committee or Working Group, is permitted to record the proceedings of an IEEE standards development meeting for which they are responsible by making an audio or slideshow recording or by producing a transcript using software or an artificial intelligence (AI) application approved by IEEE. **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. Software or AI shall not be used if it enables persons other than the officer making the recording or authorized Standards Department staff to initiate or obtain the transcription or recording. (March 2025 IEEE-SA Standards Board Operations Manual 5.3.3.2)
- Press (i.e., anyone reporting publicly on this meeting) are to announce their presence (March 2025 IEEE-SA Standards Board Operations Manual 5.3.3.3)

# Task Force Decorum

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- 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
- Please **MUTE** unless called on
- Use the **CHAT** to be placed in the queue (a 'Q' is sufficient)
- The chat should be used only to send to "Everyone", for official business – not for side conversations.

# Goals for the meeting

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- Build consensus for resolution of potential initial SA ballot comments on IEEE P802.3dg D3.0

# Meeting - fees

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- This meeting is conducted as part of the IEEE 802.3 Interim 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 – 802.3dg

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- To subscribe to the 100 Mb/s Long-Reach Single-Pair Ethernet Task Force reflector, send an email to:

**[ListServ@ieee.org](mailto:ListServ@ieee.org)**

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

***subscribe STDS-802-3-SPEP2P <yourfirstname> <yourlastname>  
end***

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

**[STDS-802-3-SPEP2P@listserv.ieee.org](mailto:STDS-802-3-SPEP2P@listserv.ieee.org)**

- Task Force web page URL:

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

# 802.3dg Task Force Private Area

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- URL: <http://www.ieee802.org/3/dg/private>
  - Username: <<XXXXXX>>
  - 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.

# 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, Only 802.3 voters may vote on electronic meetings (and hybrid meetings are considered electronic...)
- **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 and retaining)

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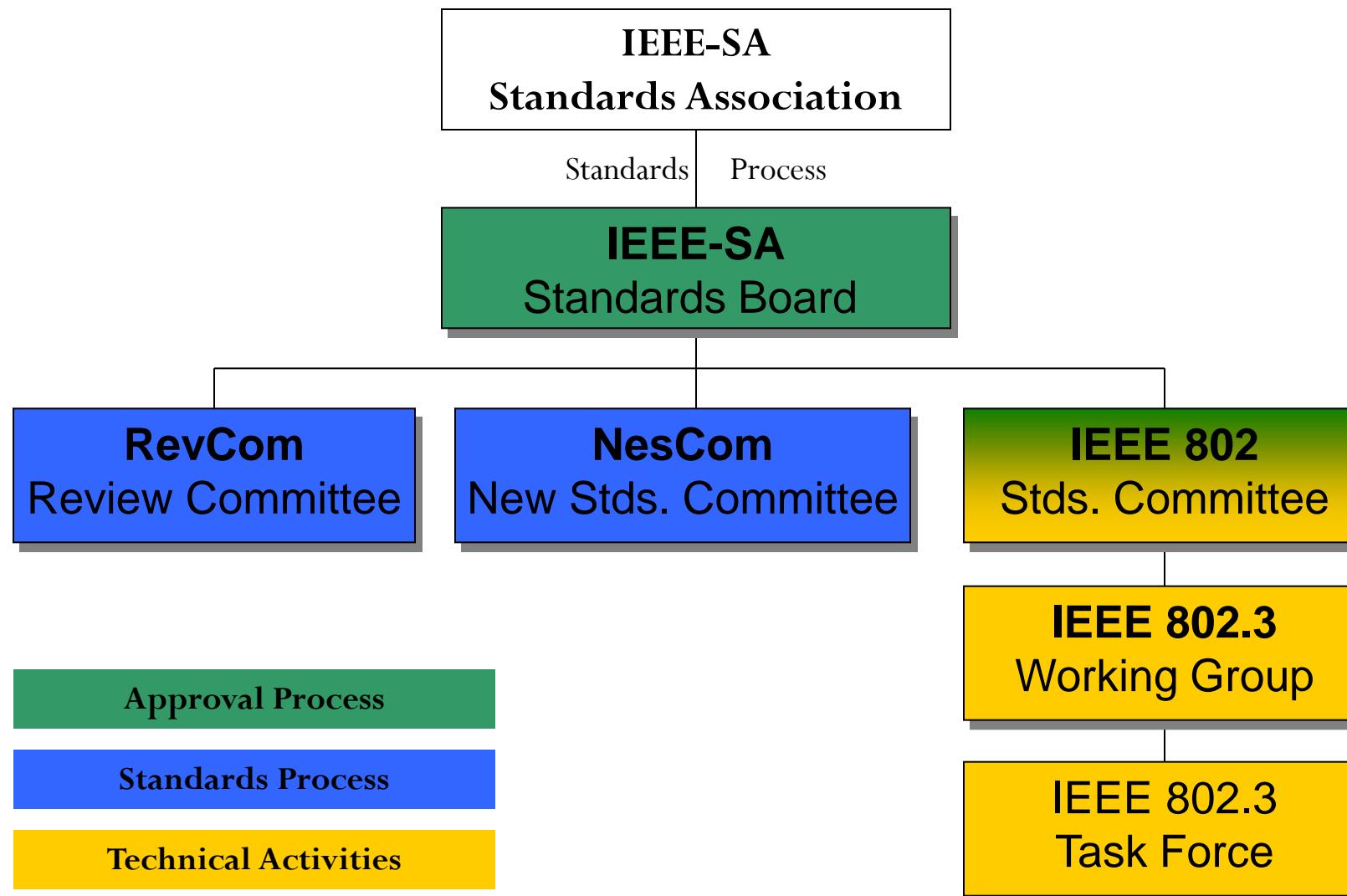
- Membership requirements (gaining)
  - Attendance in at least 75% of meeting slots at 2 of the last 4 plenary sessions
    - Attendance in at least 75% of meeting slots at recent IEEE 802.3 Ethernet Working Group or Task Group Interim Session may be substituted for one of the two Plenary Sessions
  - 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

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- Attendance will be taken from IMAT and Webex
  - IMAT is the official record – so be sure to sign in...
    - But only if you plan to be here for 75% of the slot.
  - Remember – IMAT for each of the 4 slots per day...
  - Suggest everyone sign onto the Webex
- **PLEASE DO NOT FORGET TO SIGN INTO IMAT – NEED FOR CORRECTIONS IS STRONGLY DISCOURAGED**
- Please email the chair if your affiliation is not readily identifiable from your email or otherwise.
  - Please put your affiliation in your Webex name or in the chat

# IEEE Structure



# Important Bylaws and Rules

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- **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**  
<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](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](mailto: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.

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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](mailto: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
  - <https://standards.ieee.org/faqs/copyrights/>
- IEEE SA Best Practices for IEEE Standards Development
  - [http://standards.ieee.org/develop/policies/best\\_practices\\_for\\_ieee\\_standards\\_development\\_051215.pdf](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>

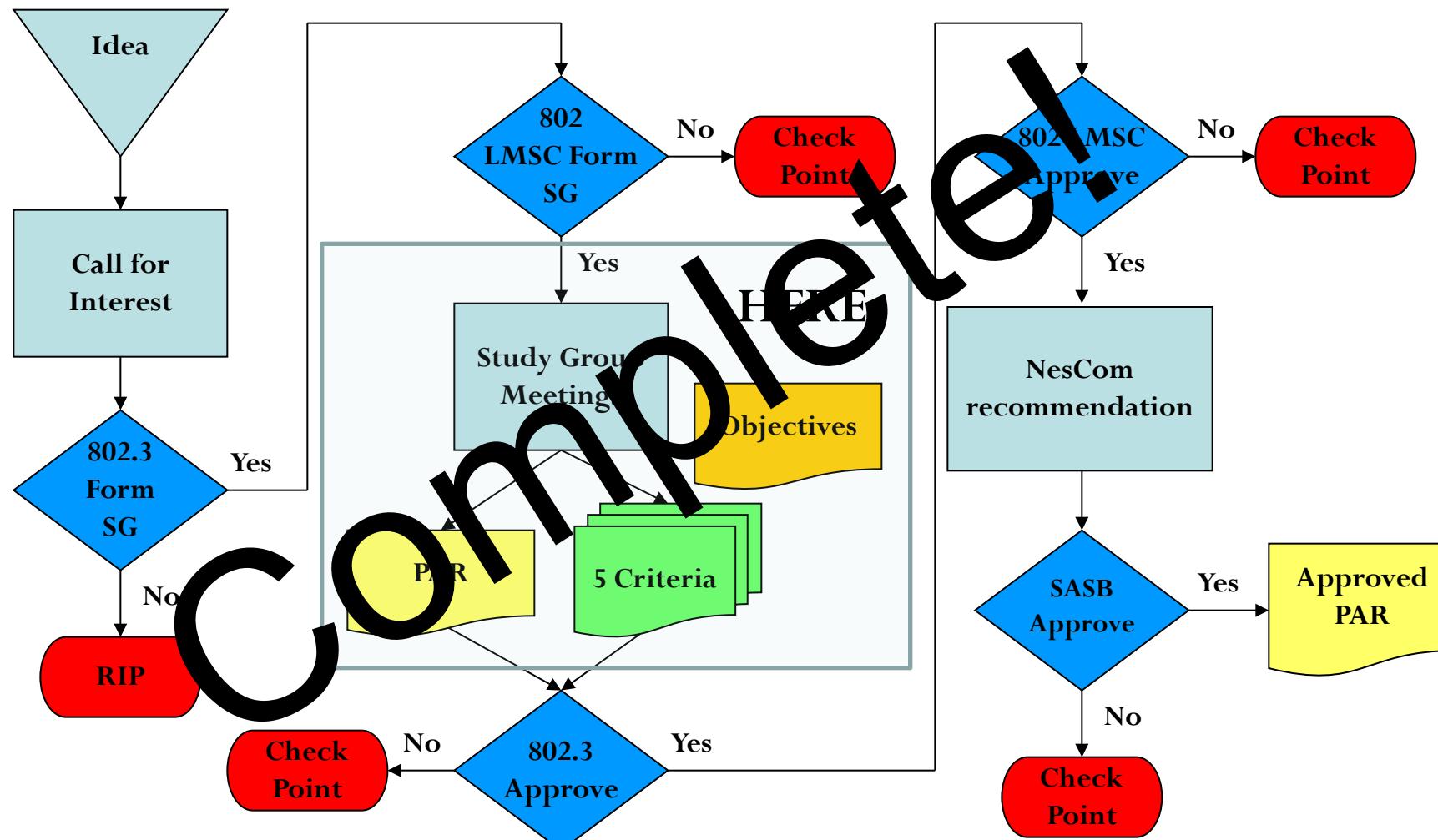
## Participants in the IEEE-SA “*individual process*” shall act independently of others, including employers

- 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

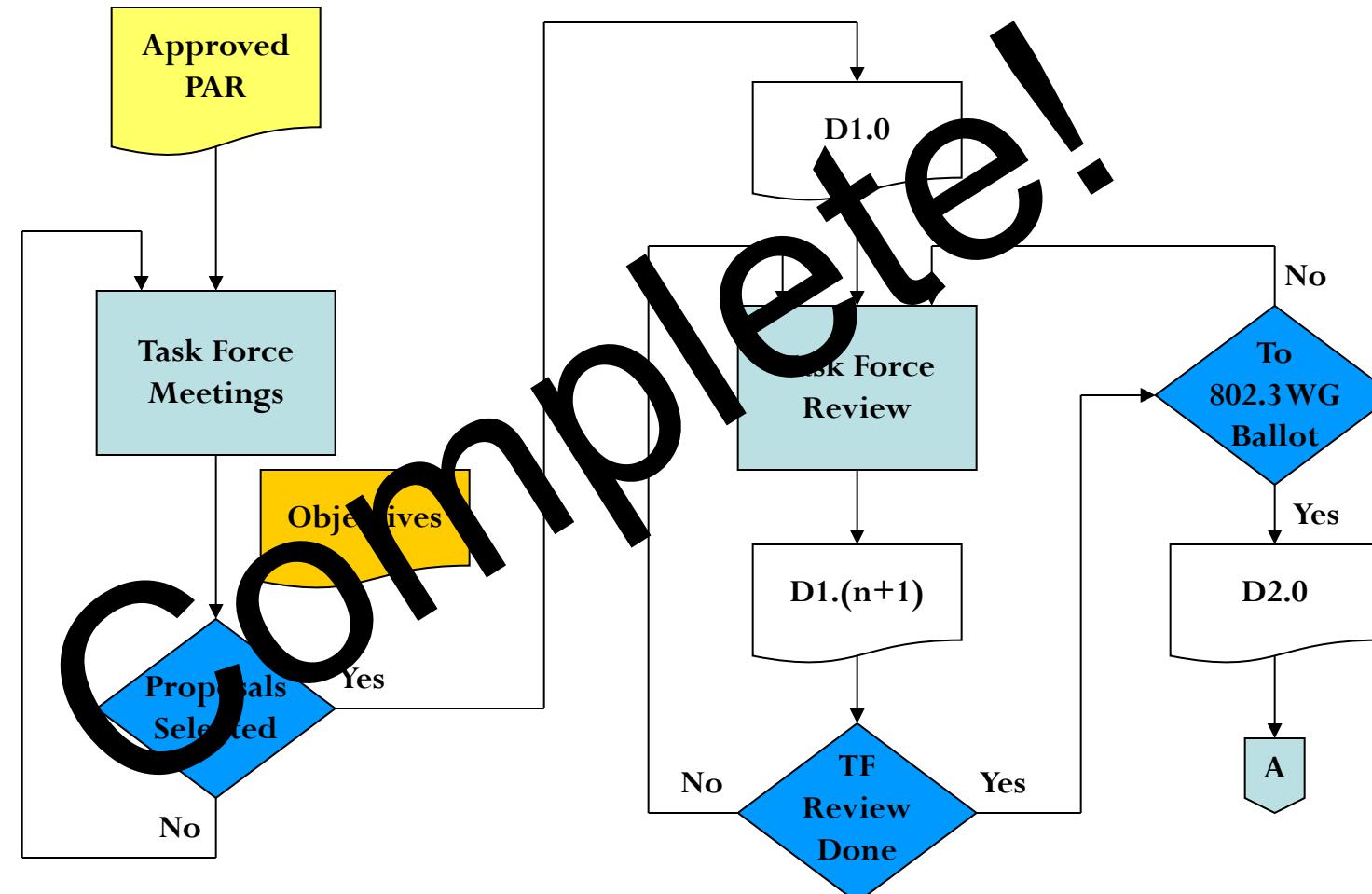
- The [IEEE-SA Standards Board Bylaws](#) (clause 5.2.1.3) specifies that “*the standards development process shall not be dominated by any single interest category, individual, or organization*”
  - This means no participant may exercise “*authority, leadership, or influence by reason of superior leverage, 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

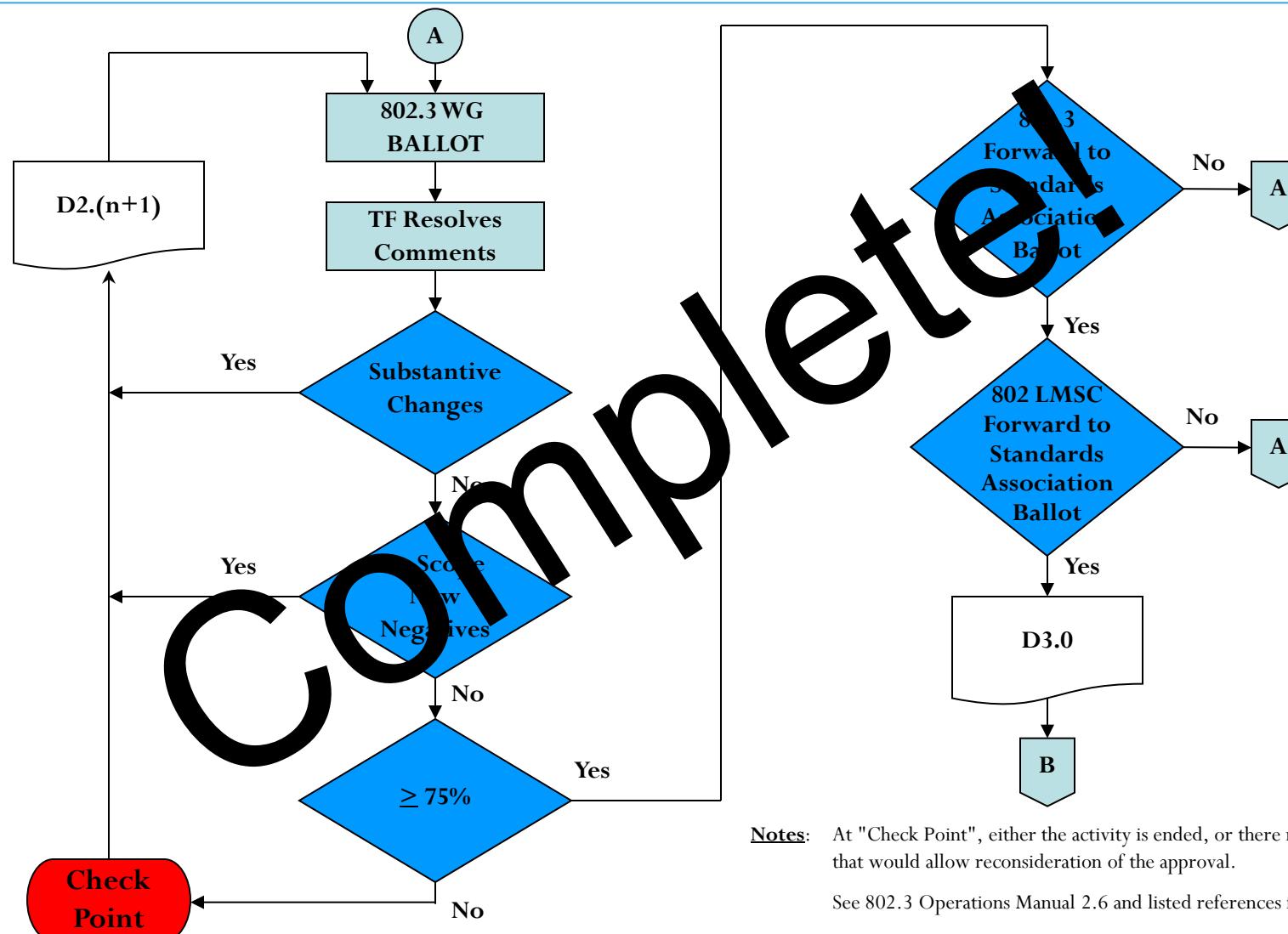


Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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



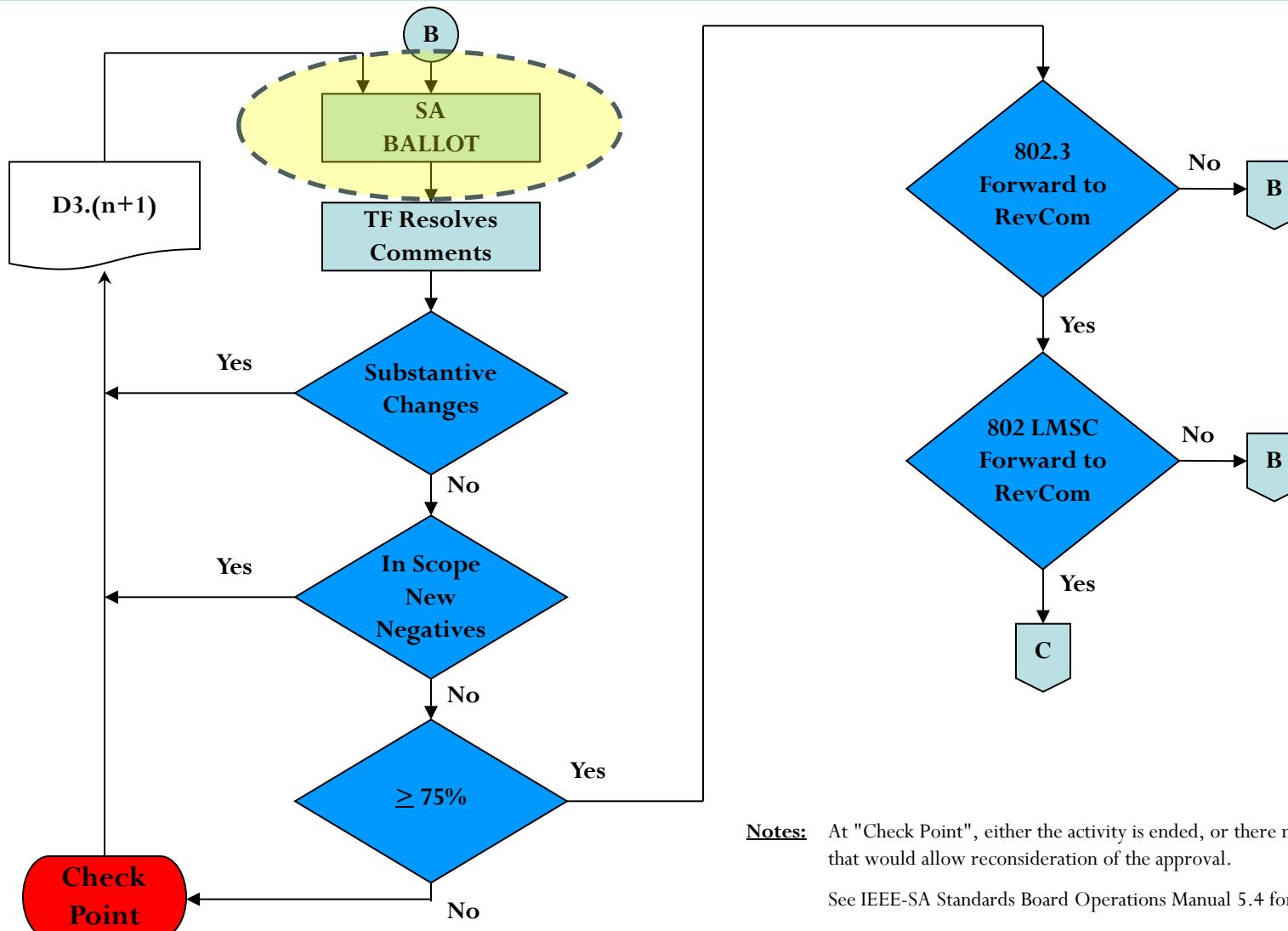
# Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase



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

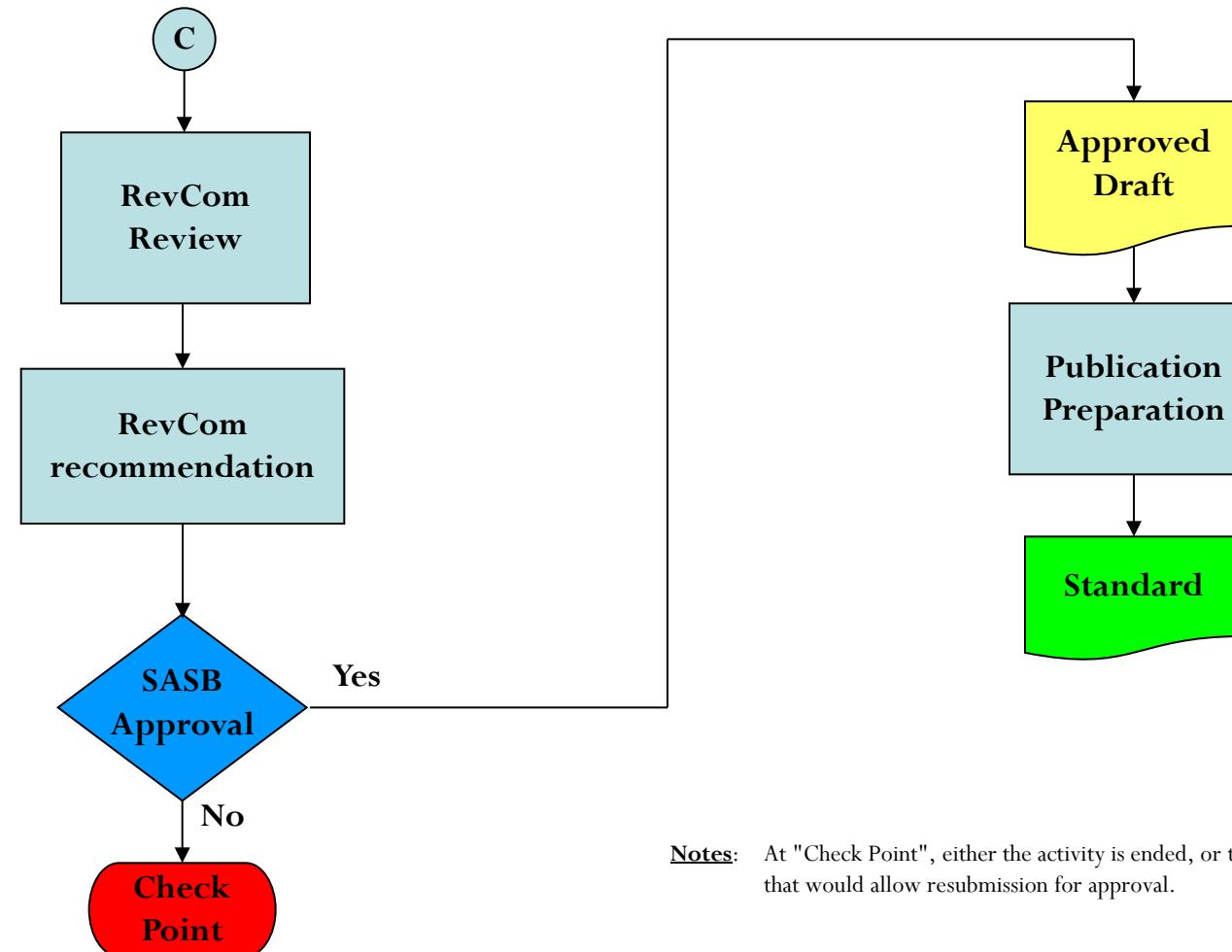
# Overview of IEEE 802.3 Standards Process (4/5)- IEEE Standards Association (SA) Ballot Phase



**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



# Liaisons and Communications

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- None

# IEEE P802.3dg Approved Project Documents

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- PAR
  - [https://www.ieee802.org/3/dg/P802d3dg\\_PAR.pdf](https://www.ieee802.org/3/dg/P802d3dg_PAR.pdf)
- 5 Criteria
  - <https://mentor.ieee.org/802-ec/dcn/22/ec-22-0086-00-ACSD-p802-3dg.pdf>
- Objectives
  - [https://www.ieee802.org/3/GT10MSPE/Objectives\\_11102021\\_SGadopted.pdf](https://www.ieee802.org/3/GT10MSPE/Objectives_11102021_SGadopted.pdf)

- ✓ Sept 2022 – Measurements of Noise, Link segments examples
  - ✓ Need to consider hybrid cables, separation of circuits, internal coupling
- ✓ Nov 2022 – Potential PHY & Link segment baseline starts
- ✓ Jan 2023 – PHY baseline discussion
  - Link segment baselines (electrical characteristics of communication) selected
- ✓ July 2024 – Major PCS/PMA baselines selected
- ✓ Nov 2024 – Draft 1.0 (baselines + skeleton draft)
- ✓ Nov - Mar 2025 - TF review
- ✓ May 2025 – Draft 2.0, Initial WG ballot
- ✓ Nov 2025 – initiate SA ballot
- ❖ Mar 2026 – conditional approval for RevCom
- ❖ June 2026 – SASB – standard complete

# Consensus Building for SA ballot comments

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- Ballot closes Feb 5 AOE
- Will need to turn ballot VERY fast to resolve comments at March plenary (not sure its feasible yet)
- SO: Start building consensus now.

# Issues for Discussion in Comments

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- MDI Mode Conversion (see graber presentation)
- Downshift State Diagram (see zimmerman presentation)
- Timing in the PCS TX state diagram for EEE (discuss)
- Transmit path delay in non-FEC operation
- Do we need to specify TCTL as well for the link segment?

# Presentations (proposed order)

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Presentation	Presenter	Affiliation
Agenda	George Zimmerman	Chair/CME Consulting (various)
MDI Specification	Steffen Graber	Pepperl+Fuchs
Downshift State Diagram Issues	George Zimmerman	CME Consulting/ADI, APL Group, Cisco, Infineon, OnSemi, Sony
Downshift: Response to “Downshift State Diagram Issues” contribution from George Zmmerman	Peter Jones	Cisco
Discussion		
Closing Business	All	

# Next meetings

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- March 2026 802 Plenary, Vancouver, BC, Canada
  - March 9-12, 2026 - 802.3dg TF days TBD
  - In-person with remote access – REGISTRATION REQUIRED
    - See <https://www.ieee802.org/3/interims/index.html> for information
- Electronic interim for comment resolution on D3.0:
  - TBA (expect between Feb 11 and Feb 18)
  - See <https://www.ieee802.org/3/calendar.html> for details

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# Thank You!