

IEEE 802dg Hybrid Meeting Practices

- 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

Bangkok, Thailand 11 November 2025

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
- Comment Resolution
 - Presentations related to comments
- Closing Business
- Future Meetings

Motion #1

- Move to approve the agenda as shown on agenda_3dg_01_20251111.pdf slide 3:
- M:
- S:
- Procedural (> 50%)

Approve prior meeting minutes

- Need to approve the IEEE P802.3dg meeting minutes:
- Sept 16:
- https://www.ieee802.org/3/dg/public/May_2025/Unconfirmed_minutes_3dg_09162025.pdf
- AND
- Sept 24
- https://www.ieee802.org/3/dg/public/May_2025/Unconfirmed_minutes_3dg_09242025.pdf

Motion #2

- Move to approve the following IEEE P802.3dg meeting minutes:
- Sept 16:
- https://www.ieee802.org/3/dg/public/May_2025/Unconfirmed_minutes_3dg_09162025.pdf
- AND
- Sept 24
- https://www.ieee802.org/3/dg/public/May_2025/Unconfirmed_minutes_3dg_09242025.pdf
- M:
- S:
- Procedural (> 50%)

General Decorum

- 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



- 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

- Respond to comments on 1st recirculation working group ballot of 802.3dg (D2p1)

Meeting - fees

- This meeting is conducted as part of the IEEE Plenary 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

- To subscribe to the 100 Mb/s Long-Reach Single-Pair 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-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

- Task Force web page URL:

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

802.3dg Task Force Private Area

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

- 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

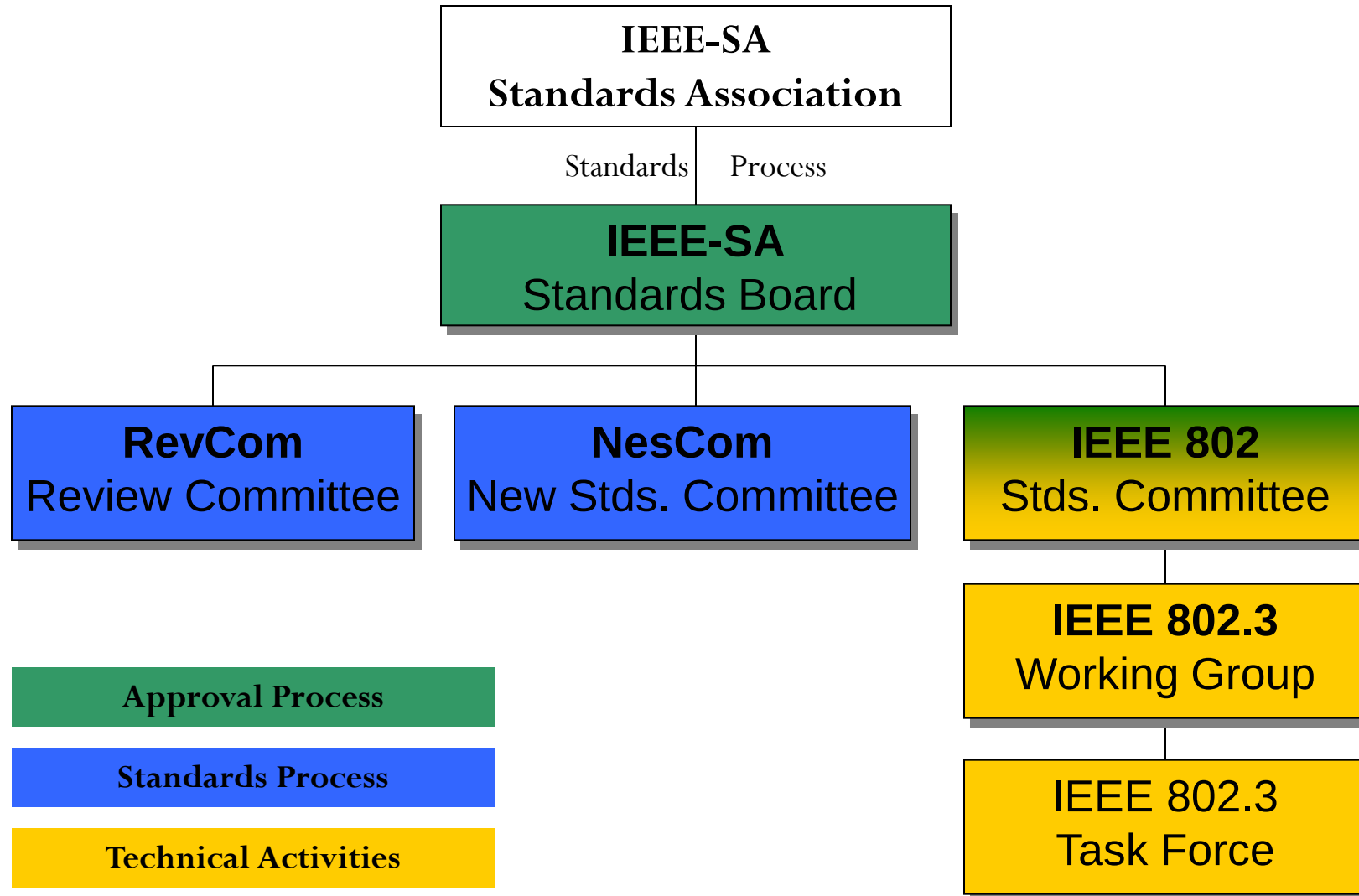
Membership and attendance recording & Membership requirements (gaining and retaining)

- 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 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

- **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
 - <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
- 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>

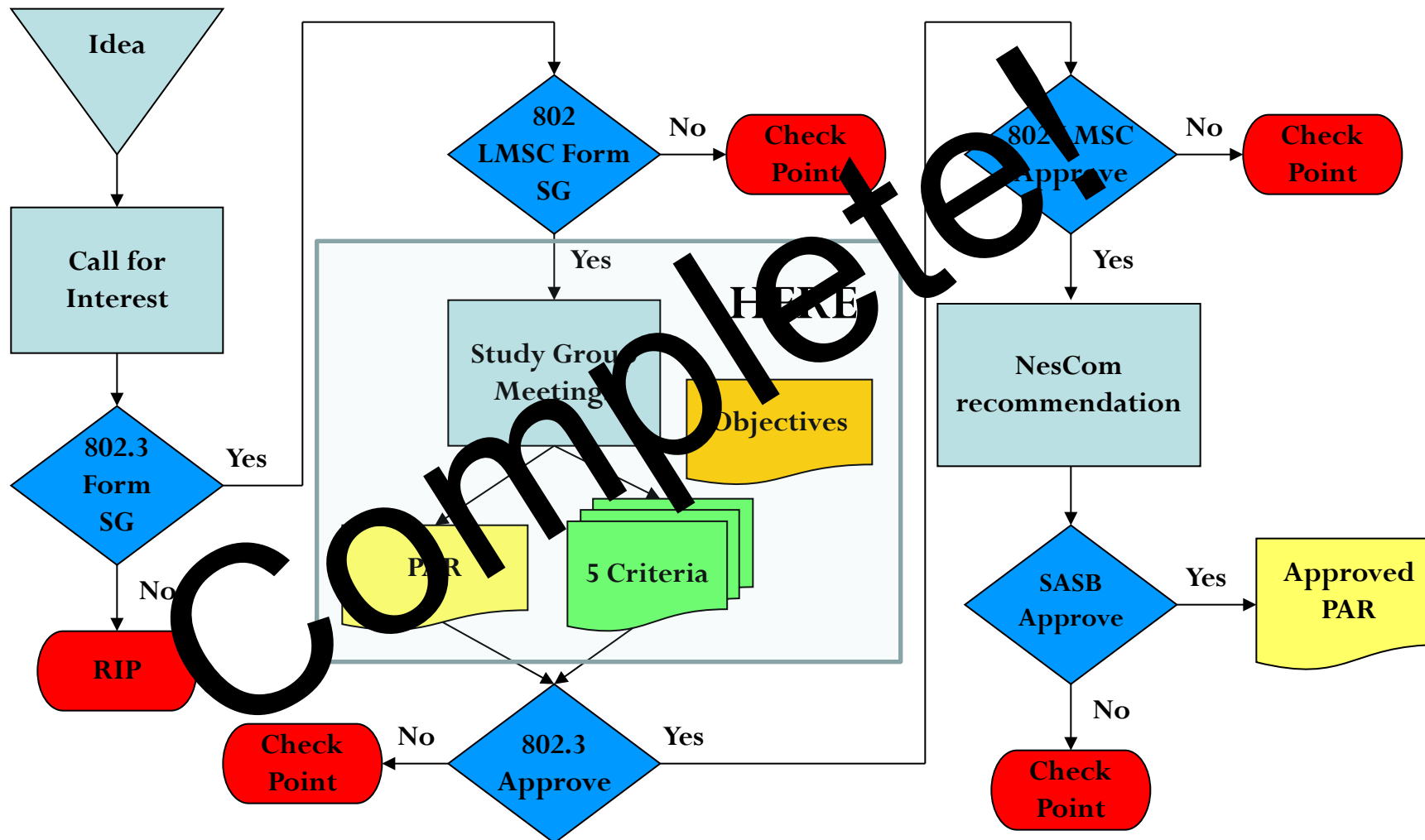
Participants in the IEEE-SA “*individual process*” shall act independently of others, including employers

- 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

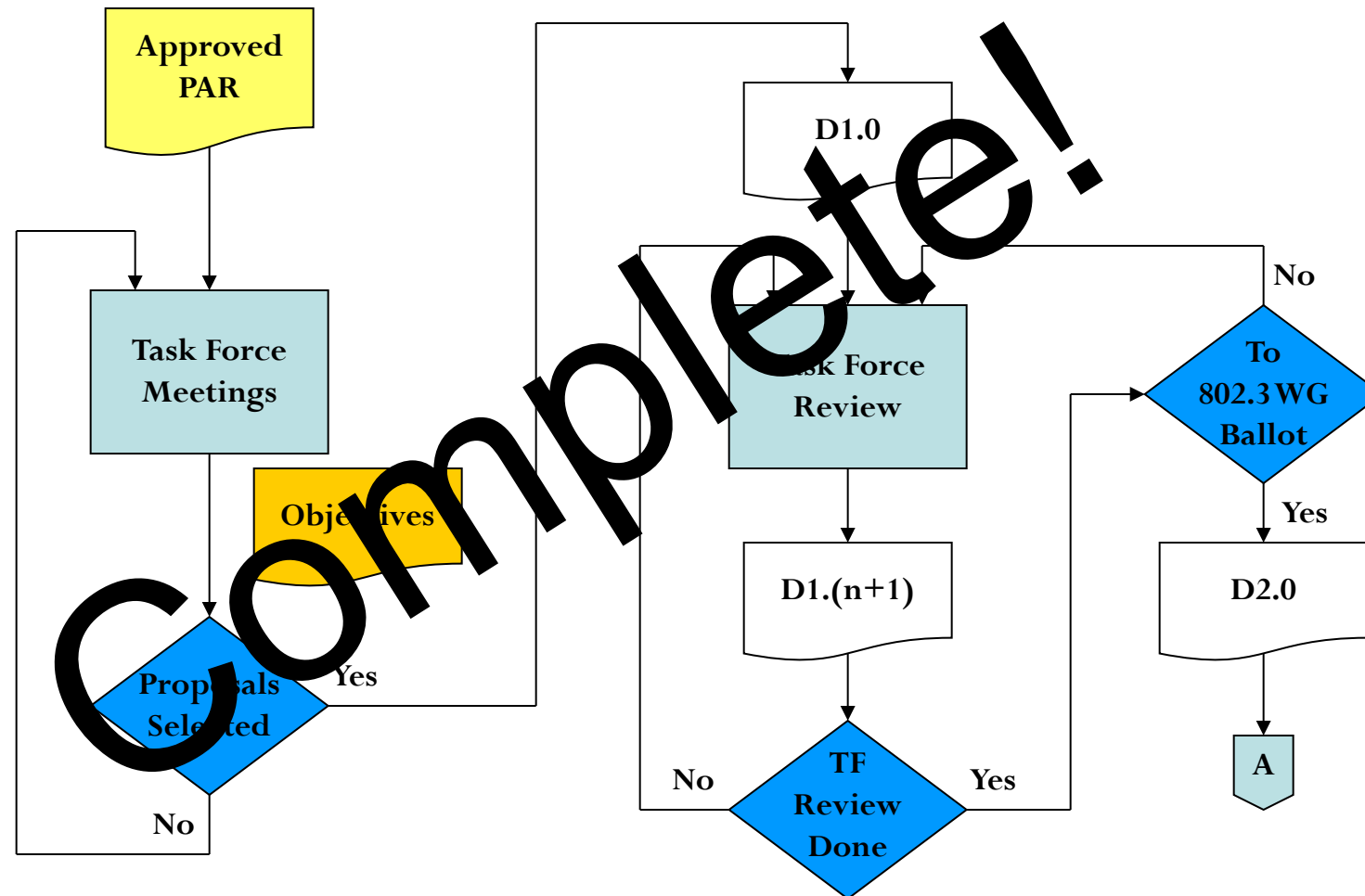
- The [IEEE-SA Standards Board Bylaws](#) (clause 5.2.1.3) specifies that *“the standards development process shall not be dominated by any single interest category, individual, or organization”*
 - This means no participant may exercise *“authority, leadership, or influence by reason of superior leverage,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

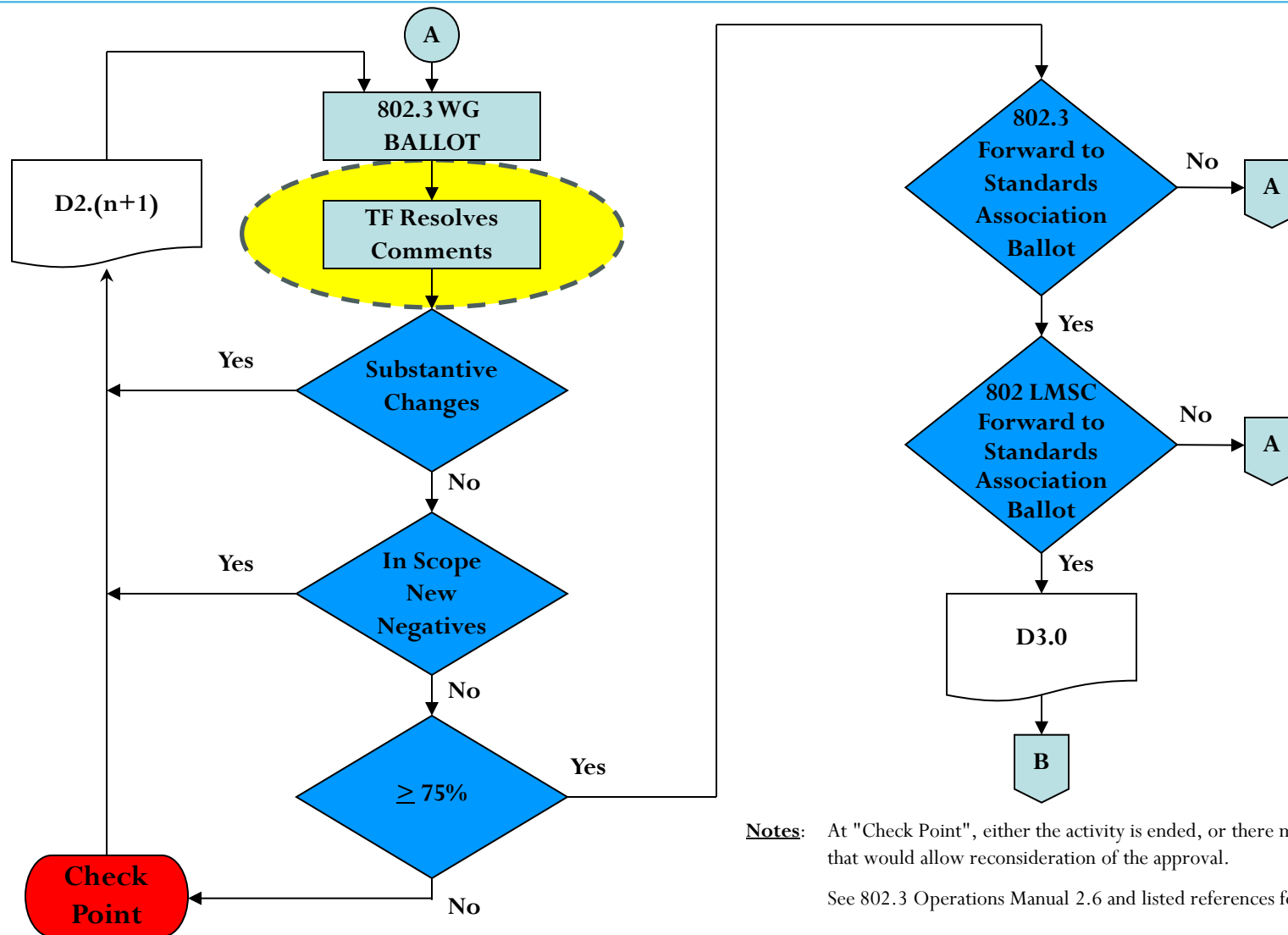


Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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



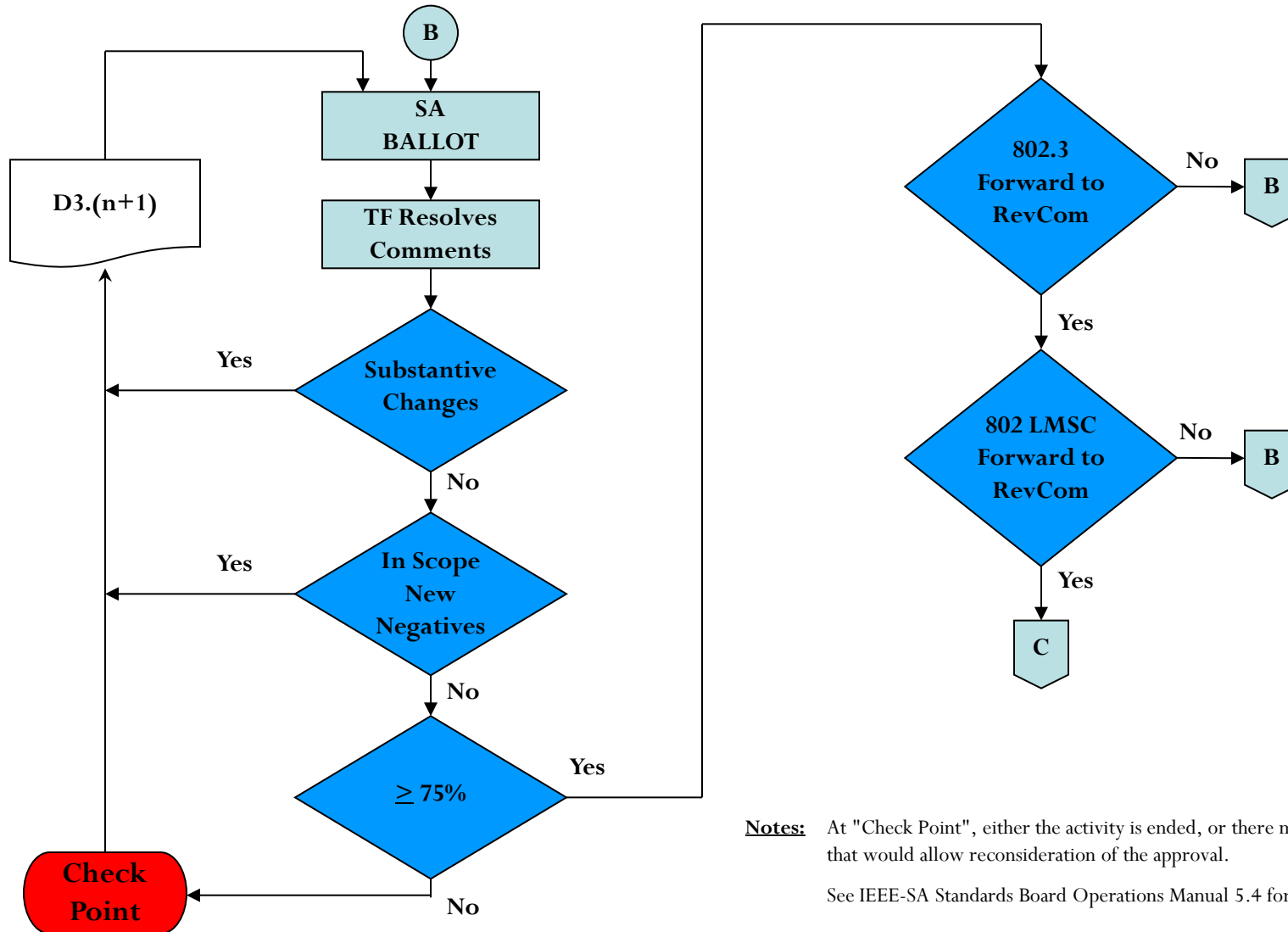
Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase



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

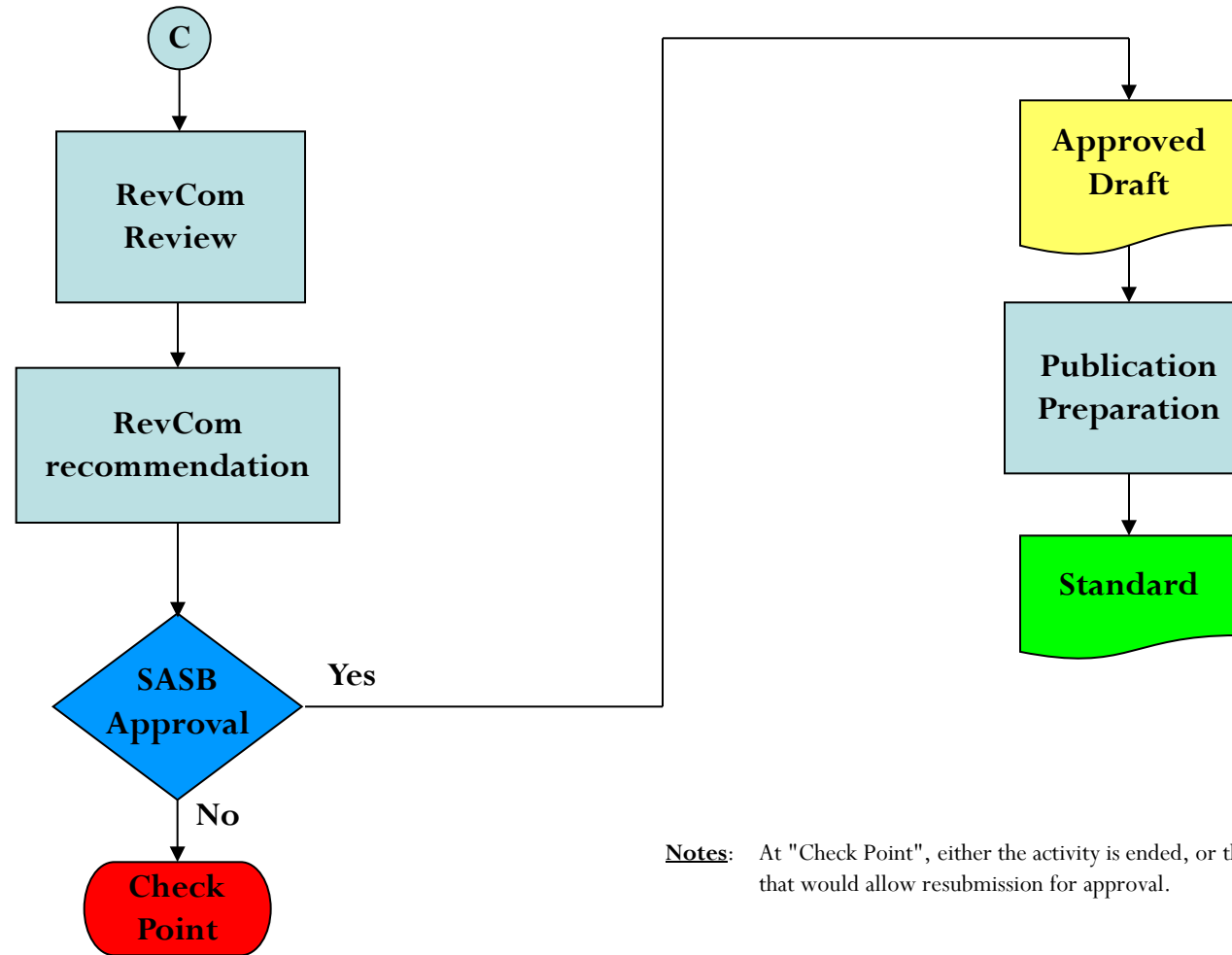
Overview of IEEE 802.3 Standards Process (4/5)- IEEE Standards Association (SA) Ballot Phase



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

- None

IEEE P802.3dg Approved Project Documents

- PAR
 - 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

- ✓ 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

P802.3da d2p2 Vote Tally

- The second Working Group recirculation ballot of IEEE P802.3da closed on April 16, 2025 AoE (23:59 UTC-12)
- Tally as of May 1, 2025:

	Working Group ballot d2p2			Req %
	#	%	Status	
Abstain	36	19	PASS	< 30
Disapprove w/ comment	10	-	-	-
Disapprove w/o comment	0	-	-	-
Approve	140	93	PASS	≥ 75
Ballots returned	186	77	PASS	≥ 50
Voters	239	-	-	-
Comments	115	-	-	-
Comments w/ late	117	-	-	-

Ballot Results

- The first Working Group recirculation ballot of IEEE P802.3dg closed on 22 Oct 2025 AoE (23:59 UTC-12)
- Tally as of 4 Nov 2025:

	Working Group ballot d2p1			Req %
	#	%	Status	
Abstain	31	17	PASS	< 30
Disapprove w/ comment	4	-	-	-
Disapprove w/o comment	0	-	-	-
Approve	145	97	PASS	≥ 75
Ballots returned	180	69	PASS	≥ 50
Voters	250	-	-	-
Comments	203	-	-	-
Comments w/ floor	204	-	-	-

Unsatisfied Comments from D2p0

- 2 Unsatisfied comments remain on D2p0 from 1 commenter

CI 190	SC 190.3.2.7	P71	L25	# 25
Slavick, Jeff		Broadcom		
Comment Type	TR	Comment Status	R	RS-FEC
The statement that $m_{i,0}$ is the first bit transmitted is duplicative with the last sentence of this sub-section (pg71 lin 52).				
SuggestedRemedy				
Remove "mi,0 is the first bit transmitted"				
Response	Response Status U			
REJECT.				
CRG disagrees with commenter.				
The two statements are similar but not identical. The first usage refers to message bits in the defined message symbol. Deleting it would remove the meaning of the notation. The second usage (at line 52) relates to the construction of the full codeword, not just the message symbols. Keeping both adds clarity and does no harm.				

CI 190	SC 190.3.2.7	P71	L43	# 28
Slavick, Jeff		Broadcom		
Comment Type	TR	Comment Status	R	Editorial
The statement that π_0 is the first bit transmitted is duplicative with the last sentence of this sub-section (pg71 lin 52).				
SuggestedRemedy				
Remove " π_0 is the first bit transmitted"				
Response	Response Status U			
REJECT.				
CRG disagrees with commenter.				
The two statements are similar but not identical. The first usage refers to parity bits in the defined parity symbol. Deleting it would remove the meaning of the notation. The second usage (at line 52) relates to the construction of the full codeword, not just the parity symbols. Keeping both adds clarity and does no harm.				

Presentations(will follow comment resolution)

Presentation	Presenter	Affiliation
Agenda	George Zimmerman	Chair/CME Consulting (various)
Editor's Report / Comment Resolution	Yan Zhuang	Huawei
IEEE P802.3dg Downshift/Upshift State Diagram Fix	Peter Jones	Cisco Systems
IEEE P802.3dg2.1 Miscellaneous changes	Peter Jones	Cisco Systems
PSAACRF Proposal	Valerie Maguire	Copperopolis (Aff'l with CME Consulting/Cisco/Analog Devices/Dell)
Motions	All	
Closing Business	All	

Motion #3

- Move to approve proposed responses for all comments marked with the topic “EZ” except xxx in
- https://www.ieee802.org/3/dg/comments/Proposed_IEEE_P802p3dg_D2p1_1031.xlsx
- M:
- S:
- Technical ($\geq 75\%$)

Next meetings

- January 2026 802.3 Interim – Austin, TX USA
- January 19-23 - 802.3dg TF days TBD
 - In-person with remote access – REGISTRATION REQUIRED
 - See <https://www.ieee802.org/3/interims/index.html> for information
- Contingent Electronic ad hoc to complete comment resolution on D2.0:
 - November 19, 2025: 7-10AM pacific
 - See <https://www.ieee802.org/3/calendar.html> for details

Thank You!