

Agenda and General Information

IEEE 802.3 400 Gb/s/lane Signaling (400GPL) Study Group

Kent Lusted, Synopsys

Chair, IEEE 802.3 400G/s/Lane Signaling Study Group

September 2026 Interim Meeting

Meeting Session Reminders

1. Participation in the September 2026 IEEE 802.3 interim meeting (face-to-face or remote) requires registration and payment of registration fee. This meeting does count towards IEEE 802.3 Working Group voting membership.
 - If you are not eligible to sign in to IMAT to claim attendance credit
 - For example - you are not going to attend for 75% of the meeting and have not provided your name and affiliation through [Zoom|WebEx],
 - Please send an email to Kent Lusted and Beth Kochuparambil to be recorded in the minutes as an attendee.
2. When Entering Zoom/Webex Session
 - Please make sure you have your full name and affiliation (in English Characters) noted in the Participants List when entering the meeting
 - To Change
 - Right click on name in participants list
 - Click on Rename
 - Pop up window shows – enter info there
 - Hit Change
 - Failure to do so will result in you being expelled from call in accordance with 802.3 Rules

Non-payment of Registration Fees

**Every attendee (Face-to-Face or Remote)
at any IEEE 802 meeting during the September 2026 IEEE 802.3 Interim
must register and pay a fee to participate**

If the individual is in arrears:

- [1] The individual is not permitted to register for any future IEEE 802 Plenary or IEEE 802 Subgroup Interim (if registration is required).**
- [2] As a result of [1], the individual is not permitted to attend any portion of a technical meeting that is part of an IEEE 802 plenary session. They are also not permitted to attend any portion of a technical meeting that is part of an IEEE 802 Subgroup Interim if that IEEE 802 Subgroup Interim required registration.**

Agenda

- Approve Agenda
- Approve Minutes
- Decorum Reminders
- Goals for this meeting
- Reflector and Web
- Ground Rules
- IEEE
 - Structure, Bylaws and Rules
 - Call for Patents
 - IEEE Standards Process
- Presentations, Straw Polls and Motions (see slides 6-8)
- Closing Business
 - Motions, if needed
 - Future Meetings

Approval of Minutes

- 20 August 2026 Electronic Interim Meeting:
 - https://www.ieee802.org/3/400GPL/public/260820/minutes_400GPL_260820.pdf

Tuesday, 15 September 2026

<u>Tuesday</u>						
Time	Presenter	Affiliation	Topic	Title	File Name	Duration
1:15 PM	Kent Lusted	Synopsys	A	Agenda and General Information	agenda_400GPL_2609	0:30
1:45 PM	Kent Lusted	Synopsys	A	Nomenclature for 400GPL	lusted_400GPL_01_2609	0:25
2:10 PM	Gary Nicholl	Cisco	L	400G/800G/1.6T Logic Architecture	nicholl_400GPL_01_2609	0:30
2:40 PM	Leon Bruckman	Nvidia	L	Extended link training protocol	bruckman_400GPL_01_2609	0:45
3:25 PM	Break					0:30
3:55 PM	Adee Ran	Cisco	L	Maintenance channel for 400GPL	ran_400GPL_01_2609	0:45
4:40 PM	Discussion & Straw Polls					1:20
6:00 PM	Meeting Recessed for the Day					

All times and order listed are subject to change. See meeting webpage for latest presentation version

Wednesday, 16 September 2026

<u>Wednesday</u>						
Time	Presenter	Affiliation	Topic	Title	File Name	Duration
8:30 AM	Kent Lusted	Synopsys		Agenda and General Information	agenda_3dj_2609	0:10
8:40 AM	Halil Cirit	Meta	A	Scaling the Rack: Electrical Interconnect for Hyperscaler Compute Demands	cirit_400GPL_01_2609	1:00
9:40 AM	Brian Welch	Cisco	O	Pre-Baseline Discussion for 400GPL Single Wavelength Objectives	welch_400GPL_01_2609	0:30
10:10 AM	Break					0:20
10:30 AM	Yu Xu	Huawei	O	Further consideration on modulation formats of 400Gbps per lane optical signal	xu_y_400GPL_01_2609	0:30
11:00 AM	Ali Ghiasi	Ghiasi Quantum/Marvell	E	Chip to Module and Optics Objectives	ghiasi_400GPL_01_2609	0:30
11:30 AM	Guangcan Mi	Huawei	E	Continuing discussion on interfaces necessary for NPO architecture in IEEE802.3dv	mi_g_400GPL_01_2609	0:30
12:00 PM	Break					1:30
1:30 PM	Rich Mellitz	Samtec	E	A Salz-Inspired Implementation Margin Estimate Aiding 400 Gb/s/Lane Channel Objective and Base	mellitz_400GPL_01_2609	0:45
2:15 PM	Toshiaki Sakai	Socionext	E	Package Considerations for 400GPL BGA-Side Feasibility Studies	sakai_400GPL_01_2609	0:40
2:55 PM	John D'Ambrosia	Futurewei, U.S. Subsidiary of	E	Industry Need for Higher Capacity MDI Connectors	dambrosia_400GPL_01_2609	0:30
3:25 PM	Break					0:30
3:55 PM	Nathan Tracy	TE Connectivity	E	Considering a KR Objective	tracy_400GPL_01_2609	0:25
4:20 PM	Vishnu Balan	Nvidia	E	Inclusion of CPO channels in the 400G/lane Optical Specifications	balan_400GPL_01_2609	0:40
5:00 PM	Discussion & Straw Polls					1:00
6:00 PM	Meeting Recessed for the Day					

All times and order listed are subject to change. See meeting webpage for latest presentation version

Thursday, 17 September 2026

Thursday						
Time	Presenter	Affiliation	Topic	Title	File Name	Duration
9:00 AM	Kent Lusted	Synopsys	A	Agenda and General Information	agenda_3dj_2609	0:05
9:05 AM	Mike Li	AMD	E	Path Forward for Developing IEEE 802.3 400GPL C2M/CR Specifications	li_m_400GPL_02_2609	0:45
9:50 AM	Adee Ran	Cisco	E	Modulation wars: How to steer through uncertainty	ran_400GPL_02_2609	0:45
10:35 AM	Break					0:30
11:05 AM	Mike Li	AMD	E	Architecture and Methodology Considerations for Developing IEEE 802.3 400GPL C2M/CR	li_m_400GPL_01_2609	0:45
11:50 AM	Discussion & Straw Polls					0:15
12:05 PM	Break					1:30
1:35 PM	Xiang He	Huawei	E	Modulation and FEC scheme for 400G/lane AUI-C2M	he_x_400GPL_01_2609	0:45
2:20 PM	Xiang He	Huawei	E	Modulation and FEC scheme for 400G/lane CR objectives	he_x_400GPL_02_2609	0:45
3:05 PM	Discussion & Straw Polls					0:30
3:35 PM	Break					0:30
4:05 PM	Discussion & Straw Polls					0:30
4:35 PM	Next Steps and Closing Business					1:00
5:35 PM	Meeting Recessed for the Day					0:15

All times and order listed are subject to change. See meeting webpage for latest presentation version

General Decorum

- An officer of the Standards Committee or any 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.
 - See subclause 5.3.3.2 of the January 2026 IEEE-SA Standards Board Operations Manual
- If a member of the press (i.e., anyone reporting publicly on this meeting) attends a standards development meeting, they shall either inform the chair before the meeting or at the beginning of the meeting of their attendance. The chair shall then announce the presence of the press in attendance at the meeting.
 - See subclause 5.3.3.3 of the January 2026 IEEE-SA Standards Board Operations Manual

Teleconference Decorum



- Please **MUTE** unless called on
- Use the “**Chat**” function to be placed into the queue
- The chat can only send to “Everyone” or the officers
- Please observe proper decorum in meetings
- No Video

IEEE 802 Decorum Guidance

- IEEE 802 “Decorum Guidance” @ <https://mentor.ieee.org/802-lmsc/dcn/26/lmsc-26-0015-06-0PNP-decorum-guidance.docx>.
-
- This document provides guidance on addressing any decorum issues that may come up, and will be leveraged, if the need arises, accordingly.

Review of IEEE SA Policies

- Email sent to Reflector reminding all to review and be familiar with following policies:
 - IEEE SA Patent Policy
 - IEEE SA Copyright Policy
 - IEEE SA Participation Slides
- See Backup for slides or <http://ieee802.org/3/policies.html>.

Goals for the meeting

- Hear presentations related to solutions for existing objectives
- Hold technical discussions towards solutions
- Consider potential additional objectives

IEEE 802.3 400 Gb/s/Lane Signaling Study Group Information

- Organization
 - Kent Lusted, Chair
 - Mark Nowell, Vice Chair
 - Beth Kochuparambil, Recording Secretary
- Study Group Web and Reflector Information
 - Home Page: <https://www.ieee802.org/3/400GPL/index.html>
 - Reflector Info: stds-802-3-400GPL@listserv.ieee.org
- Project Documentation
 - PAR: <https://mentor.ieee.org/802-lmsc/dcn/26/lmsc-26-0120-01-LMSC-ieee-p802-3dv-draft-par.pdf>
 - CSD: <https://mentor.ieee.org/802-lmsc/dcn/26/lmsc-26-0121-01-LMSC-ieee-p802-3dv-draft-csd.pdf>
 - Objectives: https://www.ieee802.org/3/400GPL/public/project_docs/400GPL_Objectives_260610.pdf

Reflector

- To subscribe to the 400GPL reflector, send an email to:

ListServ@ieee.org

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

subscribe stds-802-3-400GPL *<yourfirstname> <yourlastname>*
end

- Send 400GPL reflector messages to:

stds-802-3-400GPL@listserv.ieee.org

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

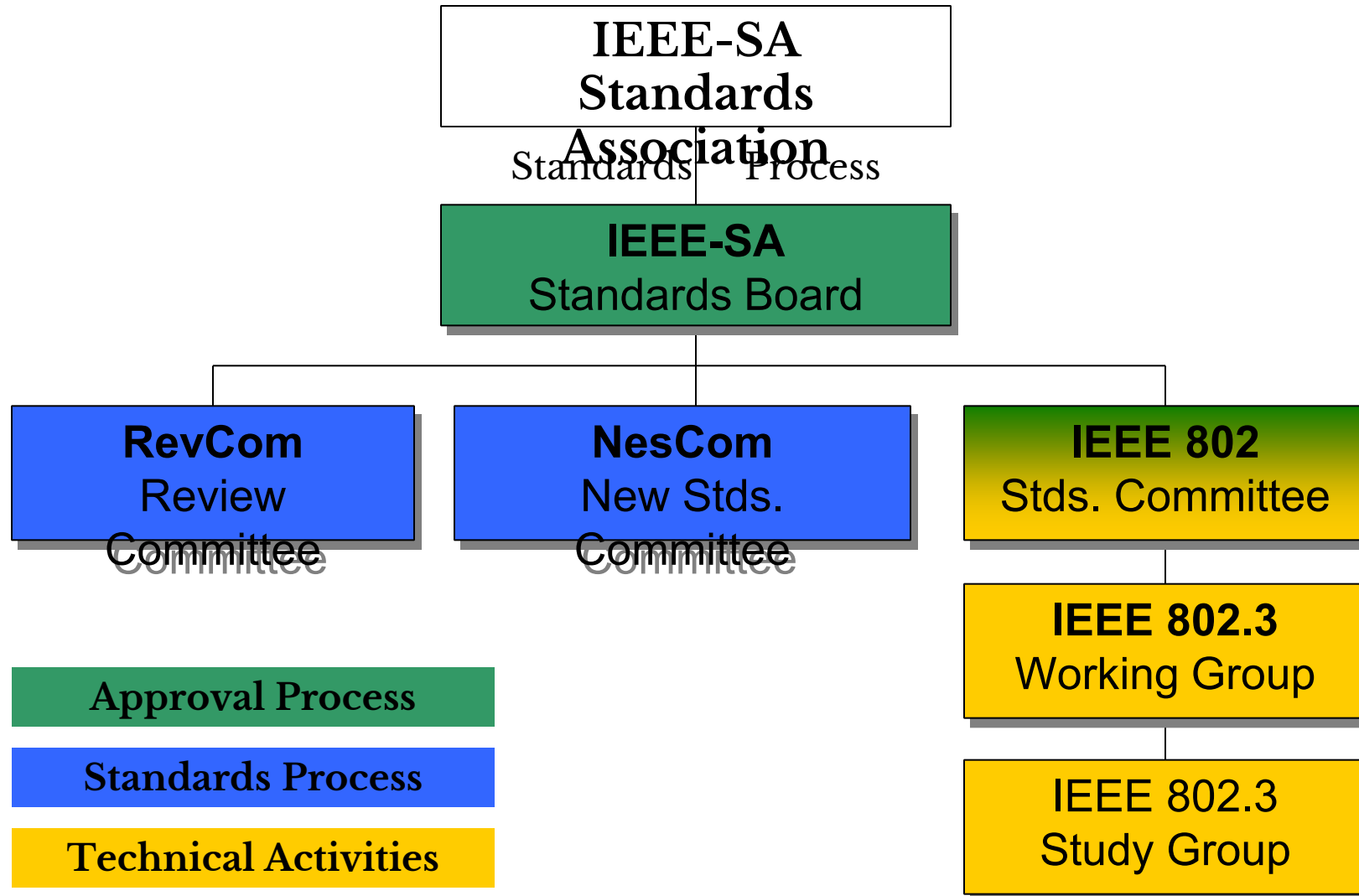
Membership

- 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
 - Note – Claiming IMAT attendance credit if you have not attended at least 75% of a slot's duration is not in accordance with IEEE Policies and Procedures, and is a violation of the IEEE Code of Conduct
 - 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>
- Note - If you are not eligible to sign in to IMAT to claim attendance credit, for example, you are not going to attend for 75% of the meeting and have not provided your name and affiliation through [Zoom|WebEx], please send an email to Kent Lusted and Beth Kochuparambil to be recorded in the minutes.
- Note – Meeting attendance records can not be used as evidence to request IMAT attendance credit for a slot.

Attendance

- Tutorial Material on attendance tool
 - http://ieee802.org/3/minutes/attendance_procedures.pdf
- Access details
 - URL: <http://imat.ieee.org/>
 - No password

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

The Study Group

- ~~Normal function is to **draft a complete PAR and Criteria for Standards Development (CSD)**~~
- ~~Provide a plenary week tutorial to the IEEE 802 LMSC if needed~~
 - ~~— Recommended for major new work items~~
- **Gain approval** at the ~~IEEE 802.3 WG, IEEE 802 LMSC, IEEE-SA NesCom and IEEE-SA Standards Board.~~
- **SG only exists for 6 months**
 - Extensions can be requested
 - Voted on by IEEE 802.3
 - Ratified by IEEE 802 LMSC
- Development of Objectives helps **set the goals for the Task Force**
- **Consensus required** to move forward

- **Not choosing a solution**

Next Steps

- Between now and first Task Force meeting
 - Initiate technical discussions towards solutions for objectives or consider additional objectives
 - Debates, discussions, consensus building

Future Meetings

- See: <http://www.ieee802.org/3/interims/index.html>
- November 2026 Plenary (as the P802.3dv Task Force, if approved)
 - Bangkok, Thailand
 - Week of 9 November 2026
- Electronic teleconference meetings (as the P802.3dv Task Force, if approved):
 - 22 Oct 2026, 7-10am Pacific

Thank You!

GUIDELINES FOR IEEE SA 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>

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

Participants in attendance at IEEE Standards development activity meetings shall follow appropriate meeting decorum, and the SA meeting rules, including but not limited to:

- Recording (e.g., via audio, video, photography, artificial intelligence (AI) application or other software) of the proceedings by any participant or observer other than Officers of this IEEE standards development group, in part or in whole, via any means, is NOT permitted. (See IEEE Standards Board Operations Manual subclause 5.3.3.2 Recordings of the proceedings of standards development meetings)
- Participants intending to report publicly on this meeting (e.g., news outlets, social media, or online forums) shall inform the Chair of their attendance and the Chair shall announce their presence and their intent to report publicly. (See IEEE Standards Board Operations Manual Subclause 5.3.3.3 Press attendance)
- Participants shall comply with IEEE SA Standards Board Operations Manual 5.1.4 Standards promotion and social media communication

IEEE ETHICS REPORTING LINE

Ethics Reporting Line

Attention!

This web page is hosted on EthicsPoint's (owned and operated by NAVEX) secure servers and is not part of the Institute of Electrical and Electronics Engineers web site or intranet.

[Make a Report](#)[Follow-up on a Report](#)

ETHICS AT IEEE

IEEE strives to achieve the highest standards of integrity and endeavors to conduct business around the world in a responsible and ethical way. It is important that those who act on the organization's behalf ensure IEEE's compliance by adhering to the same standards and expectations.

When you become aware of or suspect a violation of IEEE's Code of Ethics, Code of Conduct or Policies, raising your concern should be as easy as possible. For this reason, IEEE has selected EthicsPoint, an independent third party for the receipt and resolution of reports of impropriety. The information you provide will be sent to IEEE by EthicsPoint on an entirely confidential (and, if you choose, anonymous) basis. (For more information see, [IEEE's Ethics Reporting Line FAQ](#))

We will review every concern raised using a defined process to ensure fairness and consistency as defined in IEEE's Bylaws and Policies. We will treat you with dignity and respect throughout the process. You can trust that we will handle your question or concern seriously and as soon as practicable. If something needs to be addressed, we will take action based on what we learn.

ETHICSPOINT IS NOT A 911 OR EMERGENCY SERVICE:

Do not use this site to report events presenting an immediate threat to life or property. Reports submitted through this service may not receive an immediate response. If you require emergency assistance, please contact your local authorities.

TO MAKE A REPORT

You may use either of the following two methods to submit a report: dial toll-free, within the United States, Guam, Puerto Rico, and Canada: **+1 888 359 6323** Or select the **"Make a Report"** link at the top of this Web page.

After you complete your report, you will be assigned a unique code called a "report key." Write down your report key and password and keep them in a safe place. After **7-10** business days, use your report key and password to check your report for feedback or questions.

Please be aware that the IEEE Ethics Reporting Line will only accept complaints regarding IEEE's business and activities. IEEE will not review or accept complaints regarding any other organization, including the employers of members. IEEE members seeking ethical assistance regarding their employers should seek their own counsel or consult their employers.

NON-RETALIATION POLICY

It is the policy of IEEE not to take any retaliatory action against any director, officer, manager, employee or volunteer for raising a good faith compliance or ethics concern, for making a good faith report of a possible violation of the IEEE Code of Ethics, Code of Conduct or IEEE Policies, or assisting or cooperating in an investigation of a possible violation.

Any elected director or officer of IEEE and any staff manager or employee who engages in any such retaliatory action can be punished by penalties up to and including expulsion from IEEE membership for a volunteer and termination of employment for any IEEE staff member.

OTHER COMPLIANCE INQUIRIES may be directed to compliance@ieee.org.

Reports alleging violations of IEEE's Code of Conduct, Code of Ethics, or other policies and rules, can be reported in two ways:

- **Phone:** +1 888-359-6323
- **Web:** www.ieee-ethics-reporting.org

Under IEEE Bylaw I-110 and IEEE Policy 7.10, any individual may report an allegation of misconduct against a member, or a non-member engaged in an IEEE activity. Reports may be filed anonymously.

References

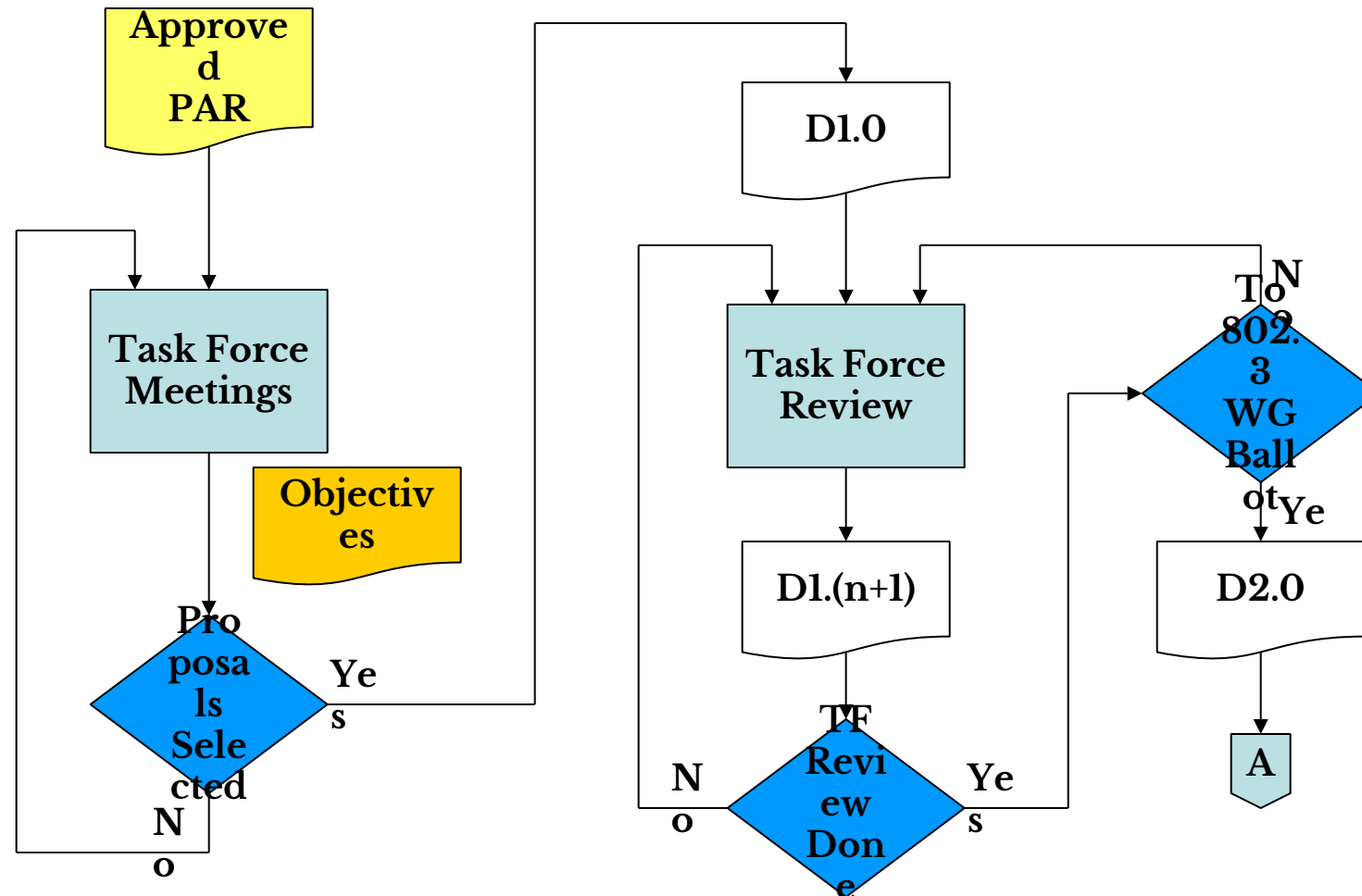
Code of Ethics:

<https://www.ieee.org/about/corporate/governance/p7-8.html>

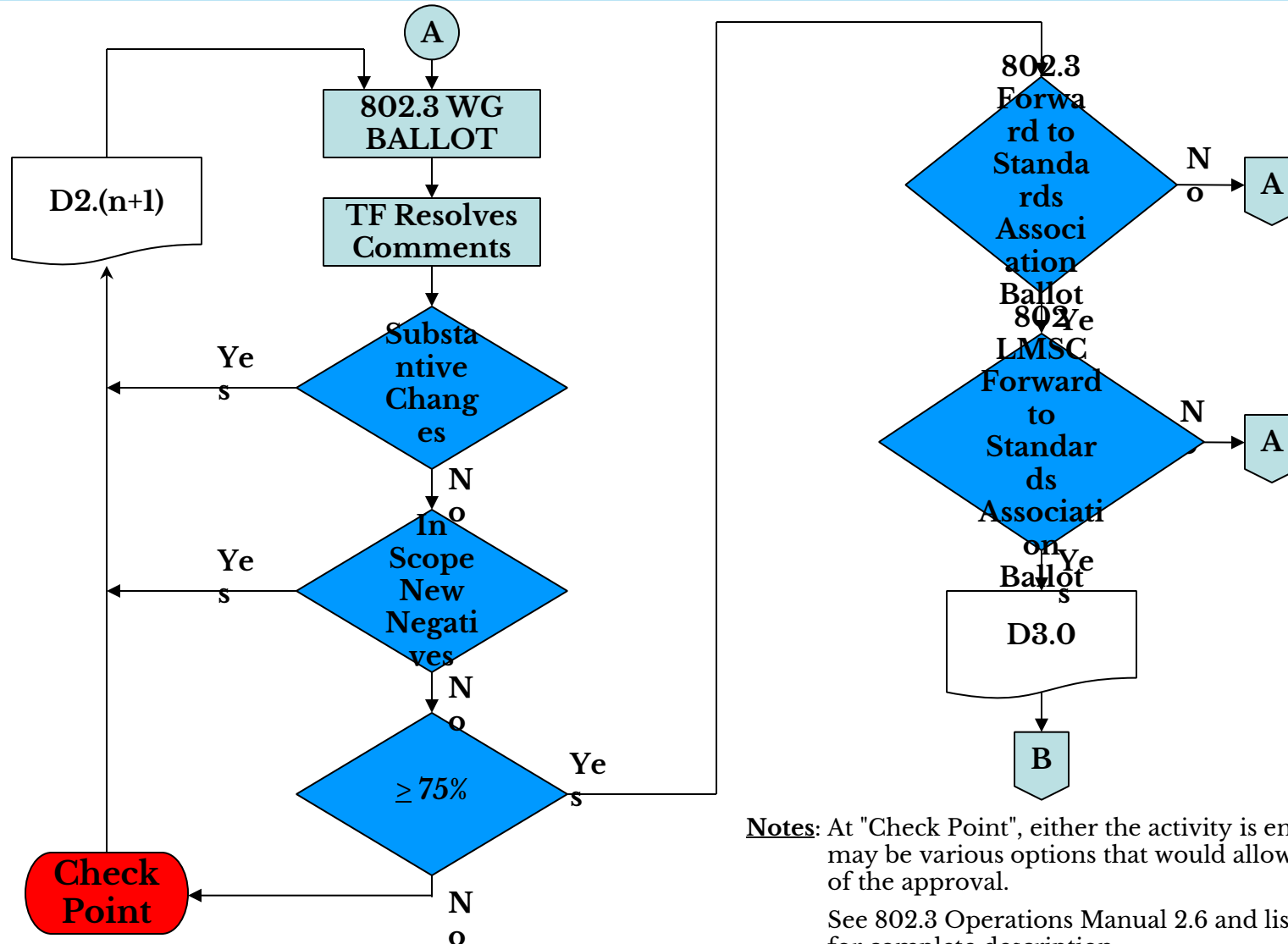
Code of Conduct:

<https://www.ieee.org/about/corporate/governance/code-of-conduct.html>

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



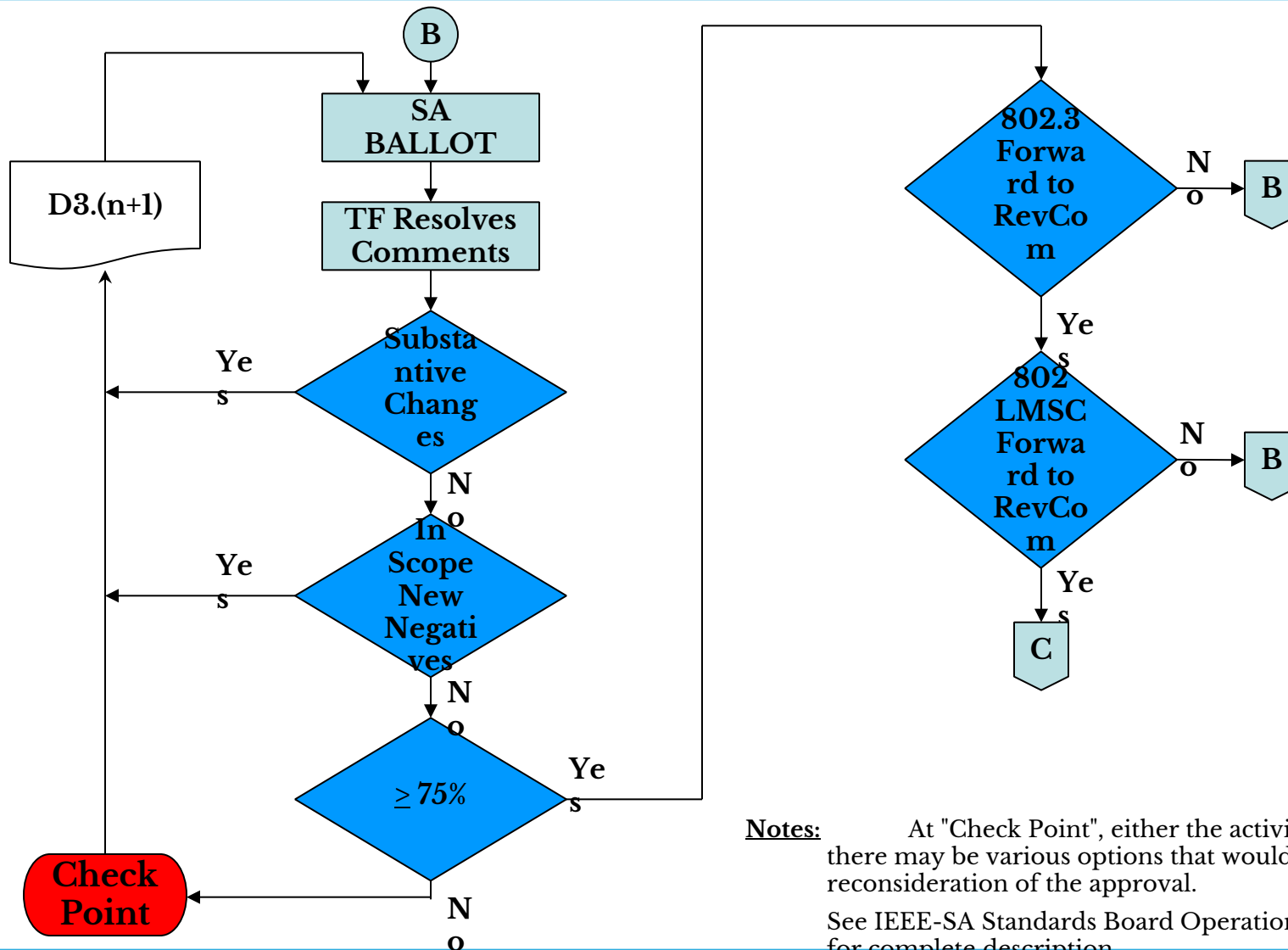
Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase



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

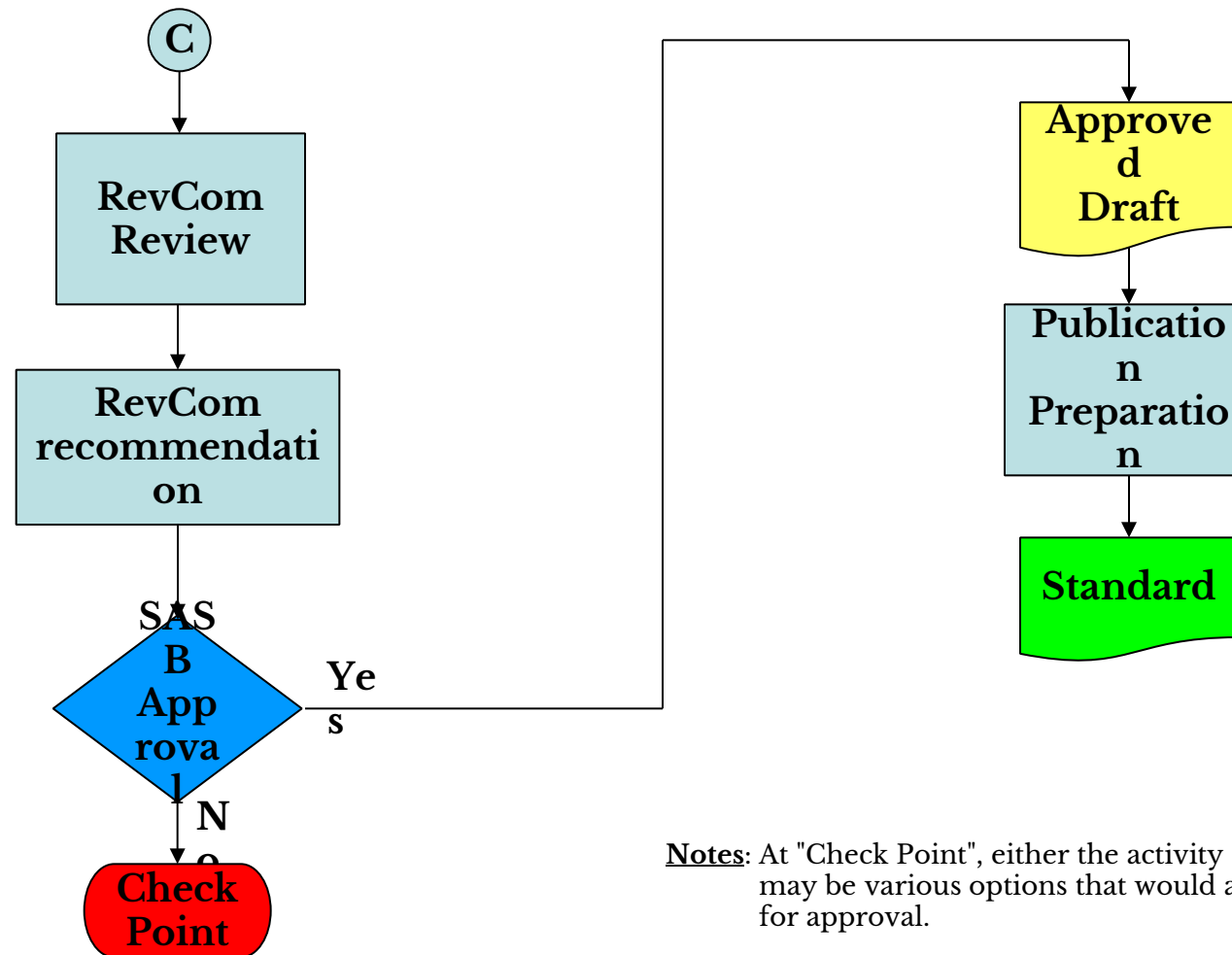
See 802.3 Operations Manual 2.6 and listed references for complete description

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.