



# Agenda and General Information

IEEE 802.3

P802.3cz Multi-Gigabit Optical Automotive Ethernet  
Task Force

Robert M. (Bob) Grow

RMG Consulting / KDPOF

TF interim, 11, 12, 18, 19 Jan 2022

# 11, 12, 18, 19 Jan 2022 TF interim agenda

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- Approve Agenda
- Approve: November plenary minutes, 12 December TF interim minutes
- Announcements
- General information
  - TF review status
  - Attendance and voting
  - Reflector and Web
  - Ground Rules
  - IEEE
    - Structure, Bylaws and Rules
    - Call for Patents
    - IEEE Standards Process
- Project status and Chief Editor's report
- P802.3cz/D1.2 comment resolution
- PMD Motions and supporting presentations
- Other presentations
- To Do List
- Future meetings

# Attendance information

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- No registration required for this virtual meeting
- Attendance will be taken from WebEx participant list
  - Please include First and Last Name, Employer and any other affiliations
  - If you don't want to leave the meeting to update participant information, please provide the above information via the chat window
- Attendance credit requires logging attendance at [imat.ieee.org](https://imat.ieee.org)

# January Interim Attendance Credit

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- Attendance credit is gained by recording your attendance at [imat.ieee.org](http://imat.ieee.org)
  - Login with your IEEE SA username/password
  - Accept privacy policy, click to login
  - Select “IEEE 802.3 January interim meeting series
  - Enter meeting session code: <to be provided during teleconferences>
  - Select “C/LM/WG802.3 Attendance”
  - Click on the desired meeting during the meeting (can only click one of any overlapping meetings)
- Attendance credit requires attendance on 4 days during the January interim meeting series

## 802.3 WG meeting

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- The 802.3 interim will will be Thursday, 20 January 2022, 1400 UTC
- The P802.3cz TF Chair will be reporting on status of our work
  - Please note that this report is scheduled under “Actions” ([https://www.ieee802.org/3/minutes/jan22/0122\\_agenda.pdf](https://www.ieee802.org/3/minutes/jan22/0122_agenda.pdf))

# Motions and Presentations

Title	Presenter(s)/Author(s)	Affiliation(s)	Time
Agenda and General Information	Robert Grow	RMG Consulting/KDPOF	0:15
<b>Comment related presentations</b>			
#146 - PHY quality criterion RS-FEC Frame Error Ratio (RFER)	Rubén Pérez-Aranda	KDPOF	
#86 - 50GBASE-AU LFSR example	Rubén Pérez-Aranda	KDPOF	
<b>Motion presentations</b>			
<b>Other presentations</b>			

\*Top Agenda presentation is administrative and as usual split between opening and closing of meeting.

# TF Review

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- Our editor, Luisa Torres, released P802.3cz/D1.2 as planned on 7 Dec 2021
- TF review was extended to 28 Dec 2021
- Please note the draft is known to not be technically complete, detailed proposals with text that can be merged into the draft were encouraged
  - Some comments did include or reference proposals for additional draft content

# Voting on motions

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- The suspension of IEEE 802.3 rules allowing this interim TF teleconference requires that all votes be either unanimous consent or by roll call, and this rule will be applied to this interim meeting
- Only 802.3 members may vote:  
[https://www.ieee802.org/3/minutes/jan22/0122\\_voters.pdf](https://www.ieee802.org/3/minutes/jan22/0122_voters.pdf)



# Task Force Teleconference Decorum



- An officer is permitted to make an audio or slideshow recording of this meeting exclusively for the purpose of generating minutes which recording 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. (December 2020 IEEE-SA Standards Board Ops Manual 5.3.3.2)
- Privacy of "private chats" nor anonymity of polls cannot be guaranteed
- Press (i.e., anyone reporting publicly on this meeting) are to announce their presence (December 2020 IEEE-SA Standards Board Ops Manual 5.3.3.3)
- Please mute when not speaking to the group
- Please observe proper decorum in meetings

# P802.3cz email reflector

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- To subscribe to the Multi-Gigabit Optical Automotive Ethernet (OMEGA) 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-OMEGA <yourfirstname> <yourlastname>

*end*

- Send Multi-Gigabit Optical Automotive Ethernet (OMEGA) reflector messages to:

[stds-802-3-omega@listserv.ieee.org](mailto:stds-802-3-omega@listserv.ieee.org)

- Task Force web page URL (yet to be set up):

<http://www.ieee802.org/3/cz/index.html>

# Web site

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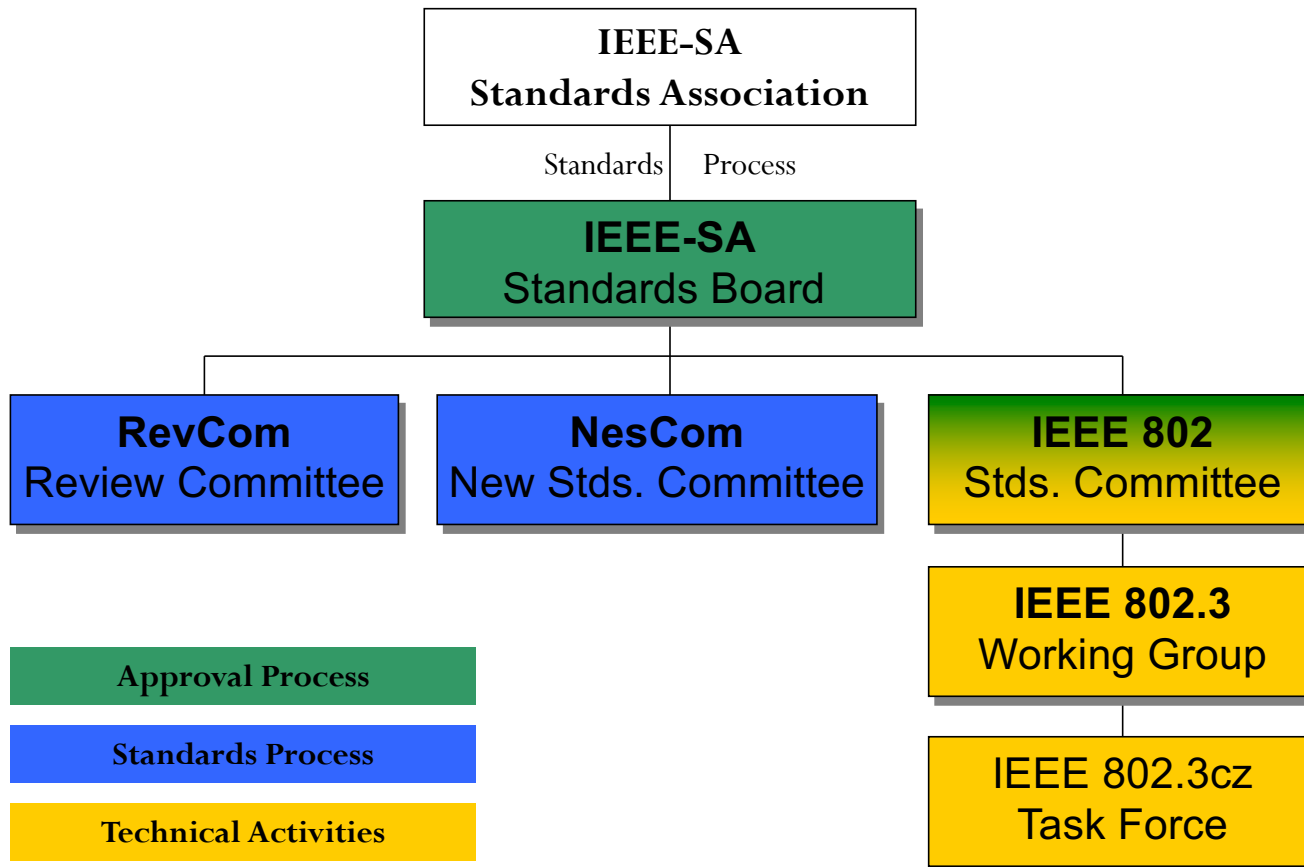
- TF home page: [www.ieee802.org/3/cz](http://www.ieee802.org/3/cz)
- Private area access:
  - [www.ieee802.org/3/cz/private](http://www.ieee802.org/3/cz/private)
  - Access will be possible with:
    - Username: 802.3cz
    - Password: <provided during meeting>
  - The IEEE 802.3 username and password will also provide access

# Ground Rules

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- Based upon IEEE 802.3 Rules
  - Foundation based upon Robert's Rules of Order
  - Anyone attending the meeting may speak and participate in straw polls
  - On teleconferences, only IEEE 802.3 WG members may vote, for in-person meetings, anyone attending may vote
- **RESPECT**... give it, get it
- NO product pitches
- NO corporate pitches
- NO prices!!!
  - This includes costs, ASPs, etc. no matter what the currency
- NO restrictive notices

# IEEE Structure



# Important Bylaws and Rules

- **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**

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- **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>  
08 June 2021 – Slide 3

## **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)**

## **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](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>

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## 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>

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## 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

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Approved by SASB in June 2019

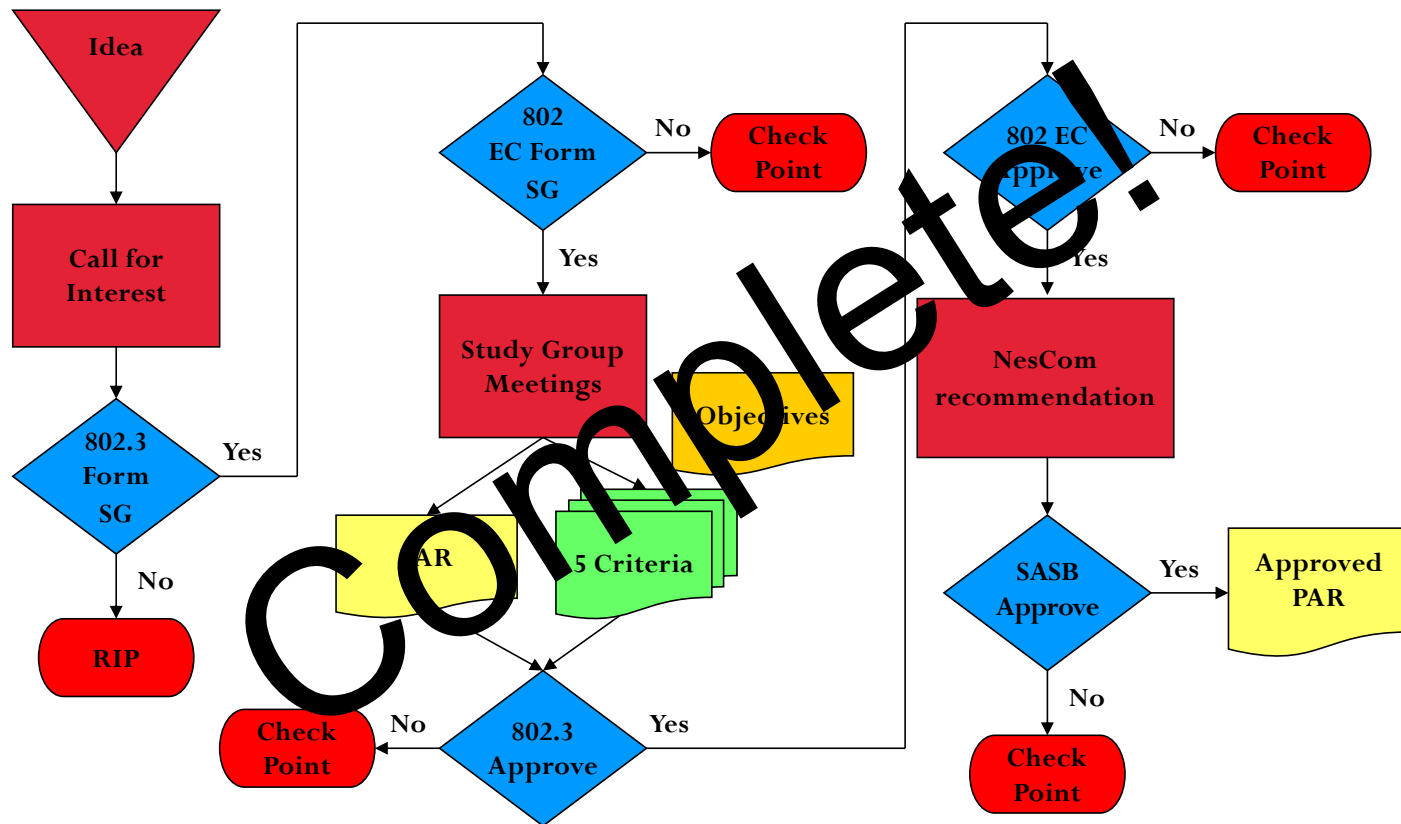
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## IEEE-SA standards activities shall allow the fair & equitable consideration of all viewpoints

- 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

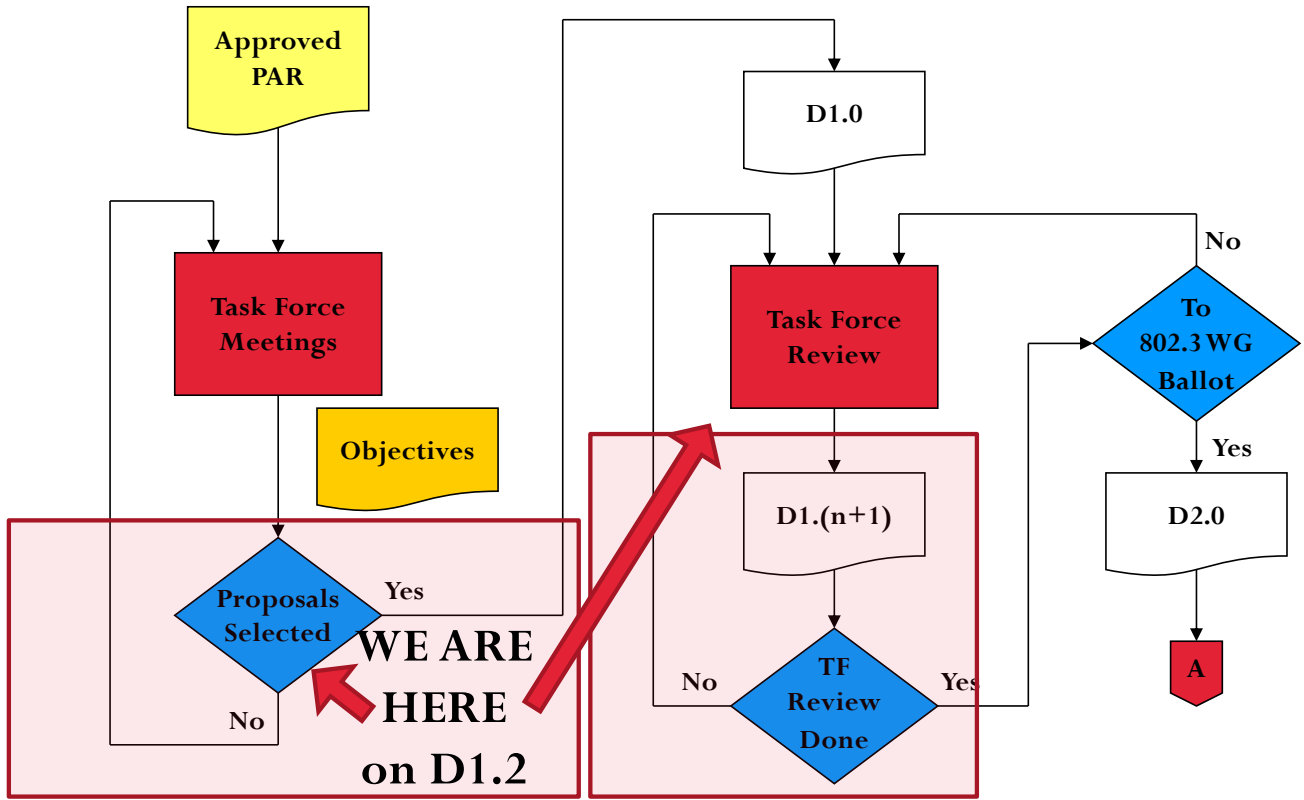


# Overview of IEEE 802.3 Standards Process (1/5)- Study Group Phase

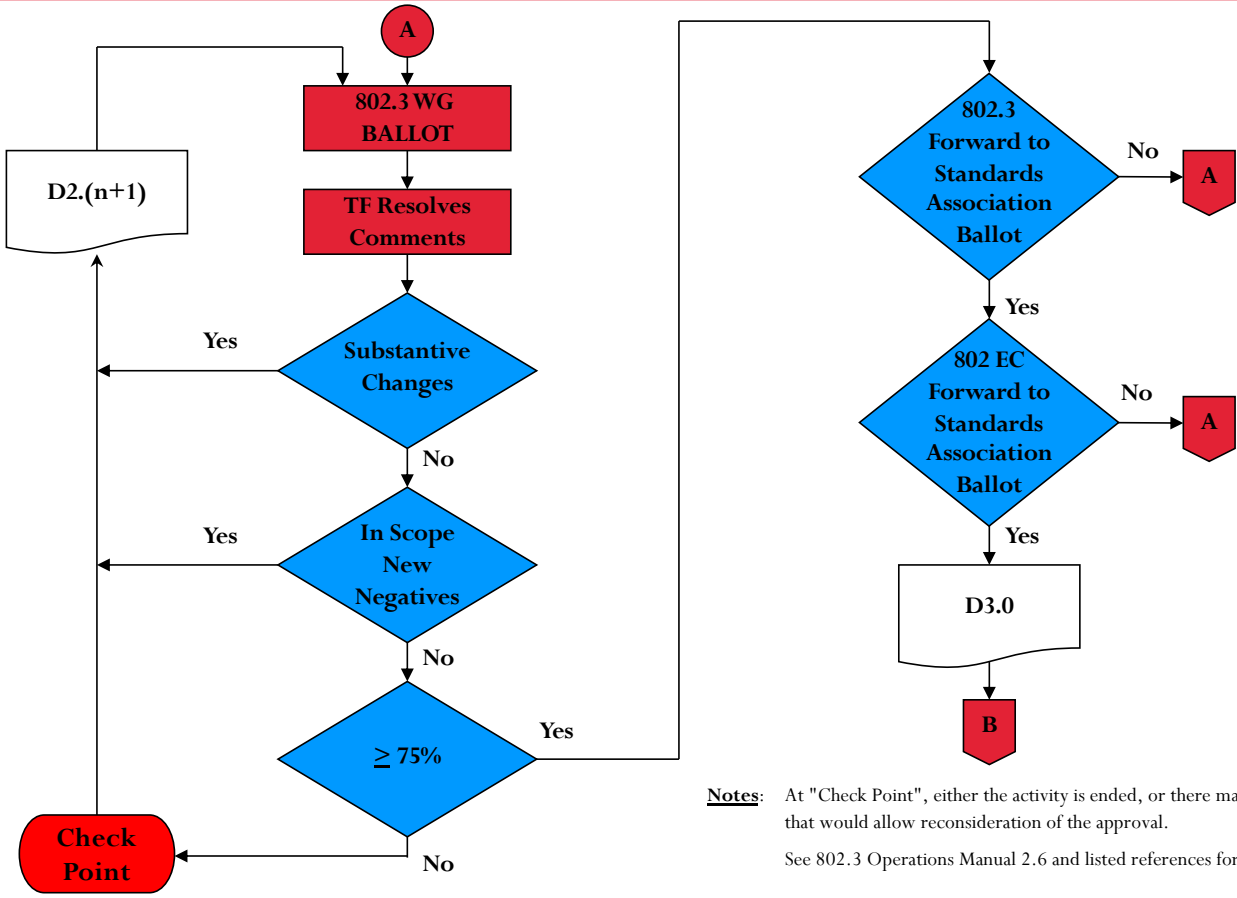


Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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

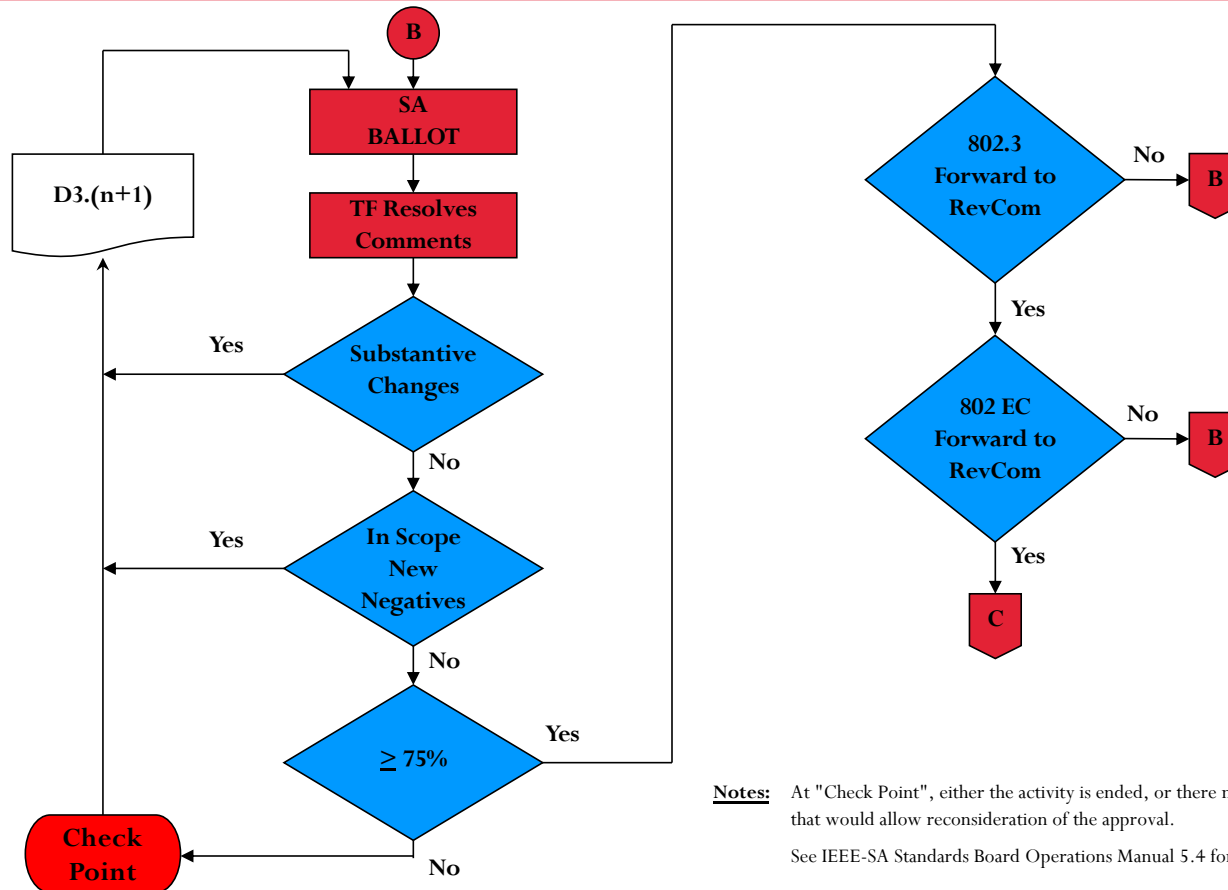


# Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase



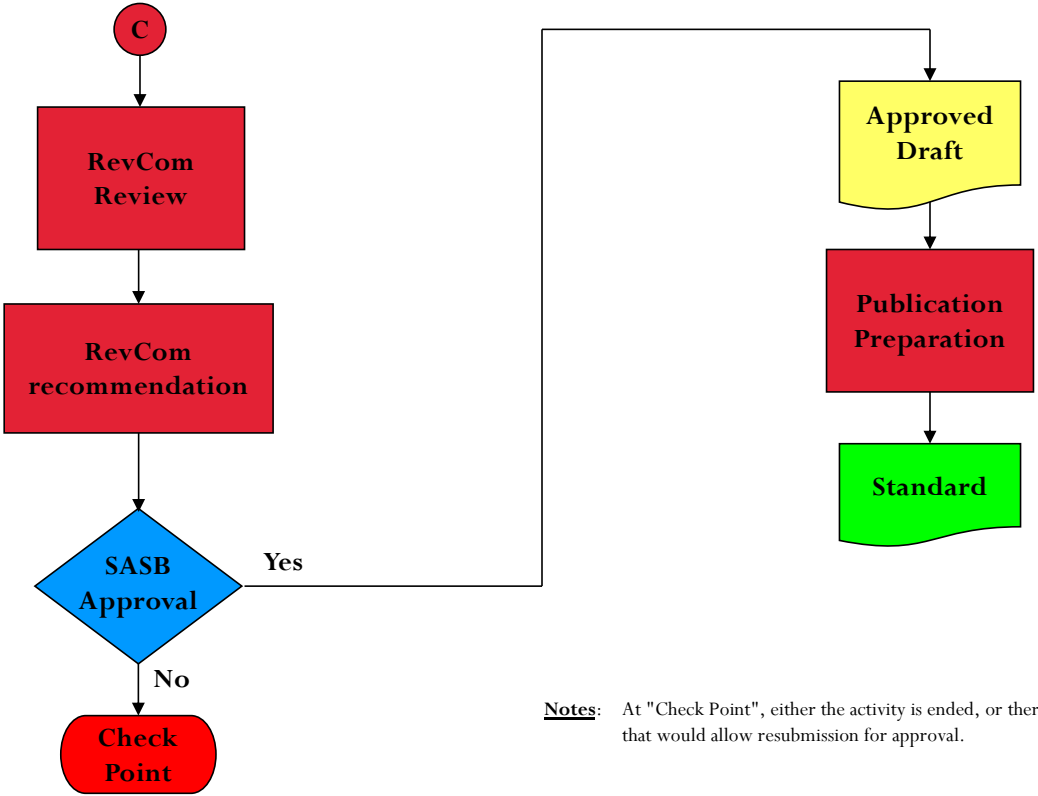
**Notes:** At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.  
See 802.3 Operations Manual 2.6 and listed references for complete description

# 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.

# IEEE P802.3cz Multi-Gigabit Optical Automotive Ethernet Approved Project Documents

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- PAR
  - [https://ieee802.org/3/cz/P802d3cz\\_PAR.pdf](https://ieee802.org/3/cz/P802d3cz_PAR.pdf)
- CSD (5 Criteria)
  - <https://mentor.ieee.org/802-ec/dcn/20/ec-20-0095-00-ACSD-p802-3cz.pdf>
- Objectives
  - [http://www.ieee802.org/3/cz/P802d3cz\\_objectives\\_01\\_0520.pdf](http://www.ieee802.org/3/cz/P802d3cz_objectives_01_0520.pdf)

# Approved Objectives (1 of 3)

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1. Preserve the IEEE 802.3/Ethernet frame format at the MAC client service interface
2. Preserve minimum and maximum frame size of the current IEEE 802.3 standard
3. Support full duplex operation only
4. Define optional startup procedure which enables the time from power\_on=FALSE to a state capable of transmitting and receiving valid data to be less than 100ms
5. Support data rates of 2.5 Gb/s, 5 Gb/s, 10 Gb/s, 25 Gb/s, and 50 Gb/s at the MAC/ PLS service interface
6. Support optional Energy Efficient Ethernet optimized for automotive applications
7. Support operation in automotive environments (e.g., EMC, temperature)
8. Do not preclude meeting FCC and CISPR EMC requirements

# Approved Objectives (2 of 3)

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9. Define the performance characteristics of an automotive link segment and an optical PHY to support 2.5 Gb/s point-to-point operation over this link segment supporting up to 4 inline connectors for at least 40 m on at least one type of automotive optical cabling
10. Define the performance characteristics of an automotive link segment and an optical PHY to support 5 Gb/s point-to-point operation over this link segment supporting up to 4 inline connectors for at least 40 m on at least one type of automotive optical cabling
11. Define the performance characteristics of an automotive link segment and an optical PHY to support 10 Gb/s point-to-point operation over this link segment supporting up to 4 inline connectors for at least 40 m on at least one type of automotive optical cabling
12. Define the performance characteristics of an automotive link segment and an optical PHY to support 25 Gb/s point-to-point operation over this link segment supporting up to 4 inline connectors for at least 40 m on at least one type of automotive optical cabling
13. Define the performance characteristics of an automotive link segment and an optical PHY to support 50 Gb/s point-to-point operation over this link segment supporting up to 2 inline connectors for at least 15 m on at least one type of automotive optical cabling



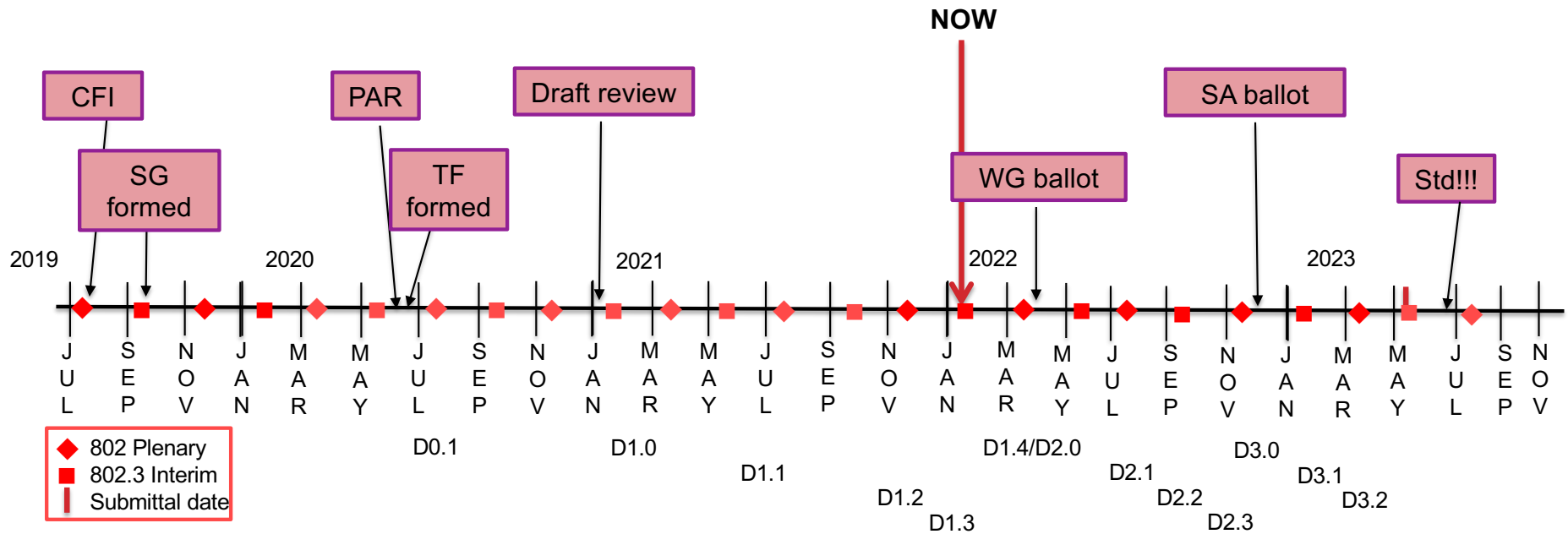
# Approved Objectives (3 of 3)

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14. Support a Bit Error Ratio better than or equal to  $10^{-12}$  at the MAC/PLS service interface (or the frame loss ratio equivalent)

# IEEE P802.3cz Multi-Gigabit Optical Automotive Ethernet Timeline

Revised: 12 Oct 2021  
 Adopted: 18 Nov 2020



# Meetings – December and beyond

- IEEE 802.3 January 2022 interim series will be virtual only (10-14 Jan and 17-21 Jan)
  - 802.3 Working Group: 20 Jan 2022
  - P802.3cz: 11, 12, 18, 19 Jan 2022 teleconferences as needed
- TF Chair will call P802.3cz interim meetings 1 Feb, and 15 Feb
- IEEE 802 March plenary will be virtual only (Orlando, Florida, USA cancelled)
  - Registration now open, meeting fee \$400 until 28 Jan 2022 (<http://802world.org/plenary>)
  - Those that registered very early (before registration was suspended) will be contacted
  - 802.3 Working Group meetings: opening 7 Mar 2022, mid-session 10 Mar 2022, closing 17 Mar 2022
  - Attendance 6 of 8 days required for credit (only 802.3 WG attendance will count on 802.3 meeting days)
- IEEE 802 is striving to return to in-person plenary meetings after March 2022 plenary

\*IEEE 802.3 Calendar: <https://www.ieee802.org/3/calendar.html>.

\*IEEE 802 plenary and IEEE 802.3 interim page: <https://ieee802.org/3/interims/index.html>



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# Thank You!