
Agenda and General Information

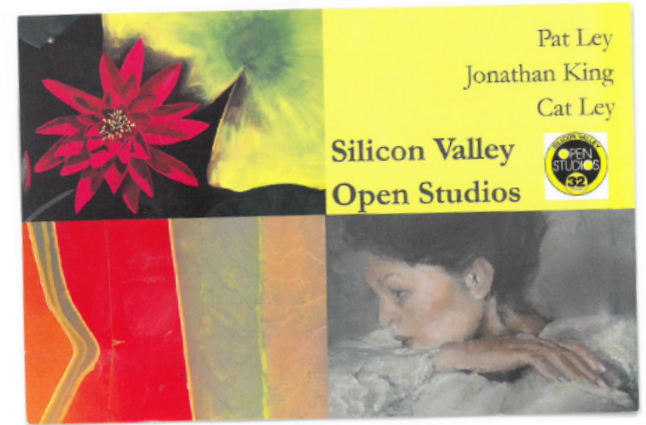
IEEE P802.3cu 100 Gb/s and 400 Gb/s over SMF
at 100 Gb/s per Wavelength Task Force

Mark Nowell, Cisco

Indianapolis, IN

Week of Sept 9th, 2019

In memoriam - Jonathan King



Agenda

- Welcome and Introductions
- Approve Agenda
- Approve Minutes
- Reflector and Web
- Ground Rules
- IEEE
 - Structure, Bylaws and Rules
 - Call for Patents
 - IEEE Standards Process
- Liaisons and Communications
- Ad hocs
- Goals for this meeting
- Meeting Schedule
- Future Meetings
- Motions and Closing Business

P802.3cu Task Force Organization

- Chair: Mark Nowell, Cisco
- Recording Secretary: Kenneth Jackson, Sumitomo
- Chief Editor: Gary Nicholl, Cisco
- Ad hoc chair: ad hoc 😊

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. (December 2018 IEEE-SA Standards Board Ops Manual 5.3.3.2)
- Press (i.e., anyone reporting publicly on this meeting) are to announce their presence (December 2018 IEEE-SA Standards Board Ops Manual 5.3.3.3)
- Cell phone ringers off
- Wear your badges at all times in meeting areas
 - Help the hotel security staff improve the general security of the meeting rooms
 - **PCs HAVE BEEN STOLEN** at previous meetings
 - **DO NOT** assume that meeting areas are secure
- Please observe proper decorum in meetings

Reflector and Web

- To subscribe to the Study Group's reflector, send an email to:
ListServ@ieee.org
with the following in the body of the message (do not include "<>"):
subscribe stds-802-3-100G-OPTX <yourfirstname> <yourlastname>
end
- Send Study Group reflector messages to:
stds-802-3-100G-OPTX@listserv.ieee.org
- Study Group's web page URL:
<http://www.ieee802.org/3/cu/index.html>

Task Force Private Area:

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

U: 802.3cu

P: *****

(The global 802.3 WG password will always work too)

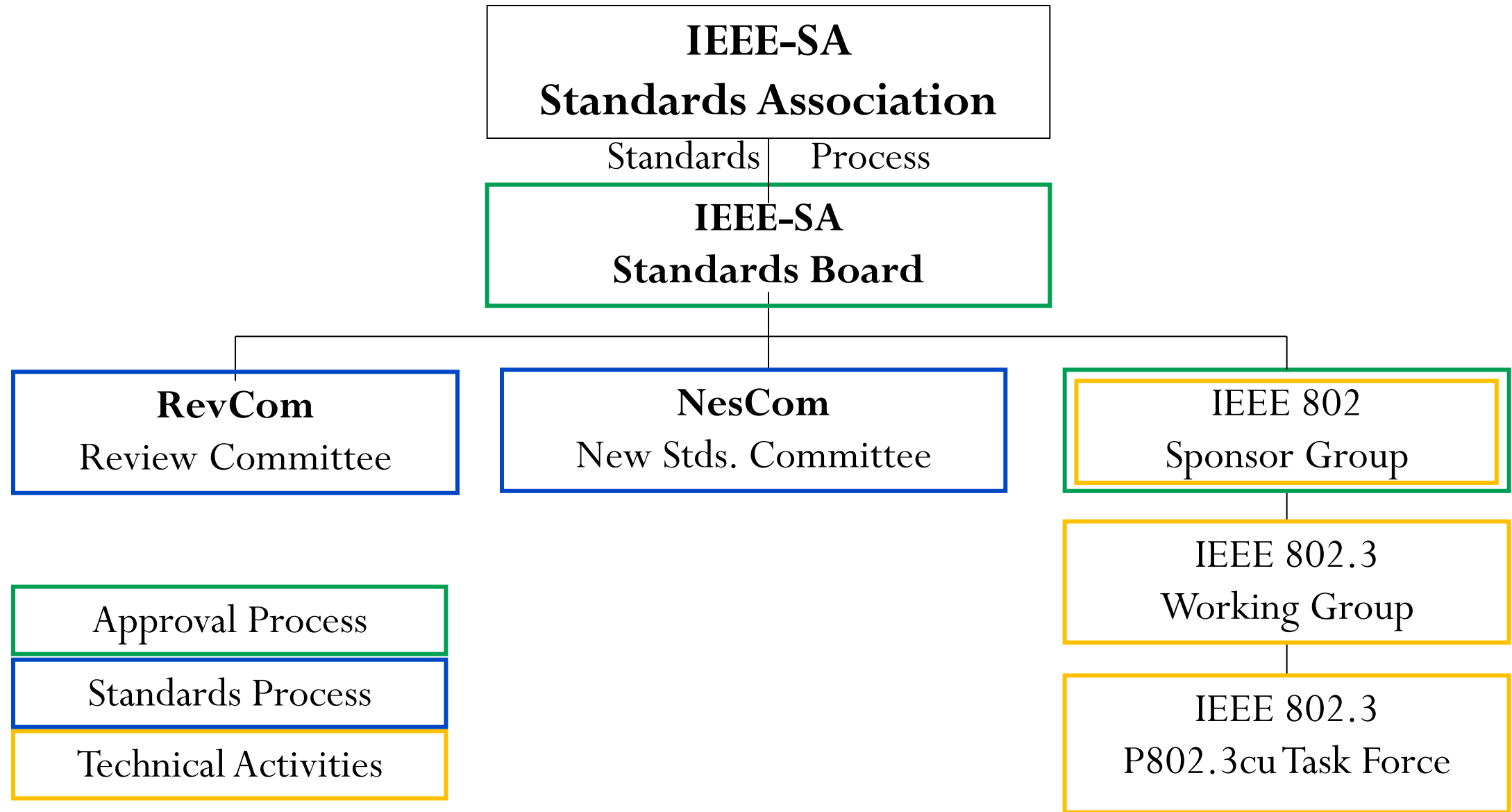
Ground Rules

- 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

Attendance

- Tutorial Material on attendance tool
 - http://ieee802.org/3/minutes/attendance_procedures.pdf
- Access details
 - URL: <http://imat.ieee.org/>
 - Use your imat login
 - (must be on meeting SSID – no VPN)

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

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 WG 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 ... do formally object.

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**

Participation in IEEE 802 Meetings

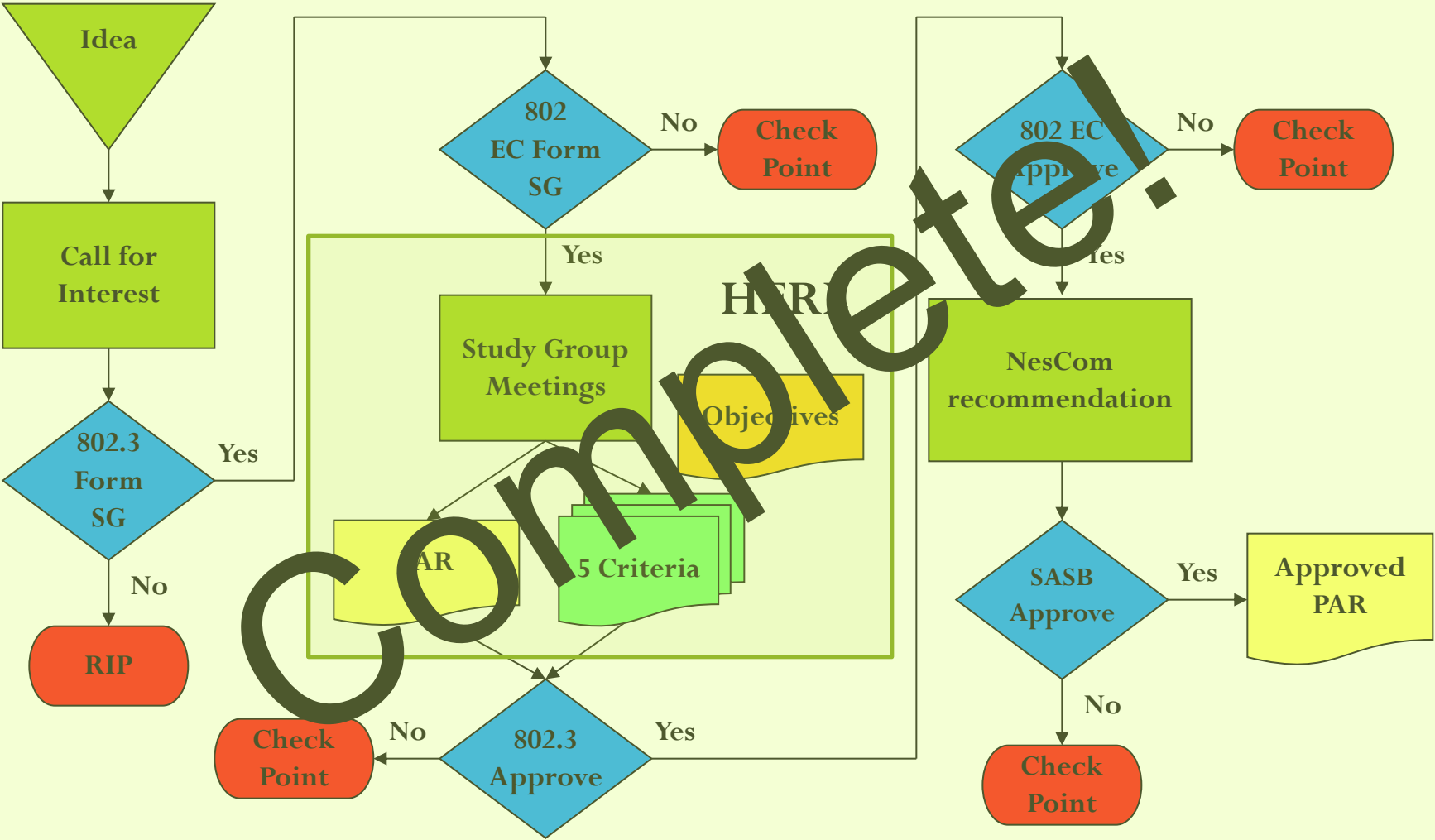
Participation in any IEEE 802 meeting (Sponsor, Sponsor subgroup, Working Group, Working Group subgroup, etc.) is on an individual basis

- **Participants in the IEEE standards development individual process shall act based on their qualifications and experience. (https://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf section 5.2.1)**
- **IEEE 802 Working Group membership is by individual; “Working Group members shall participate in the consensus process in a manner consistent with their professional expert opinion as individuals, and not as organizational representatives”. (subclause 4.2.1 “Establishment”, of the IEEE 802 LMSC Working Group Policies and Procedures)**
- **Participants have an obligation to act and vote as an individual and not under the direction of any other individual or group. A Participant’s obligation to act and vote as an individual applies in all cases, regardless of any external commitments, agreements, contracts, or orders.**
- **Participants shall not direct the actions or votes of any other member of an IEEE 802 Working Group or retaliate against any other member for their actions or votes within IEEE 802 Working Group meetings, see https://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf section 5.2.1.3 and the IEEE 802 LMSC Working Group Policies and Procedures, subclause 3.4.1 “Chair”, list item x.**

By participating in IEEE 802 meetings, you accept these requirements. If you do not agree to these policies then you shall not participate.

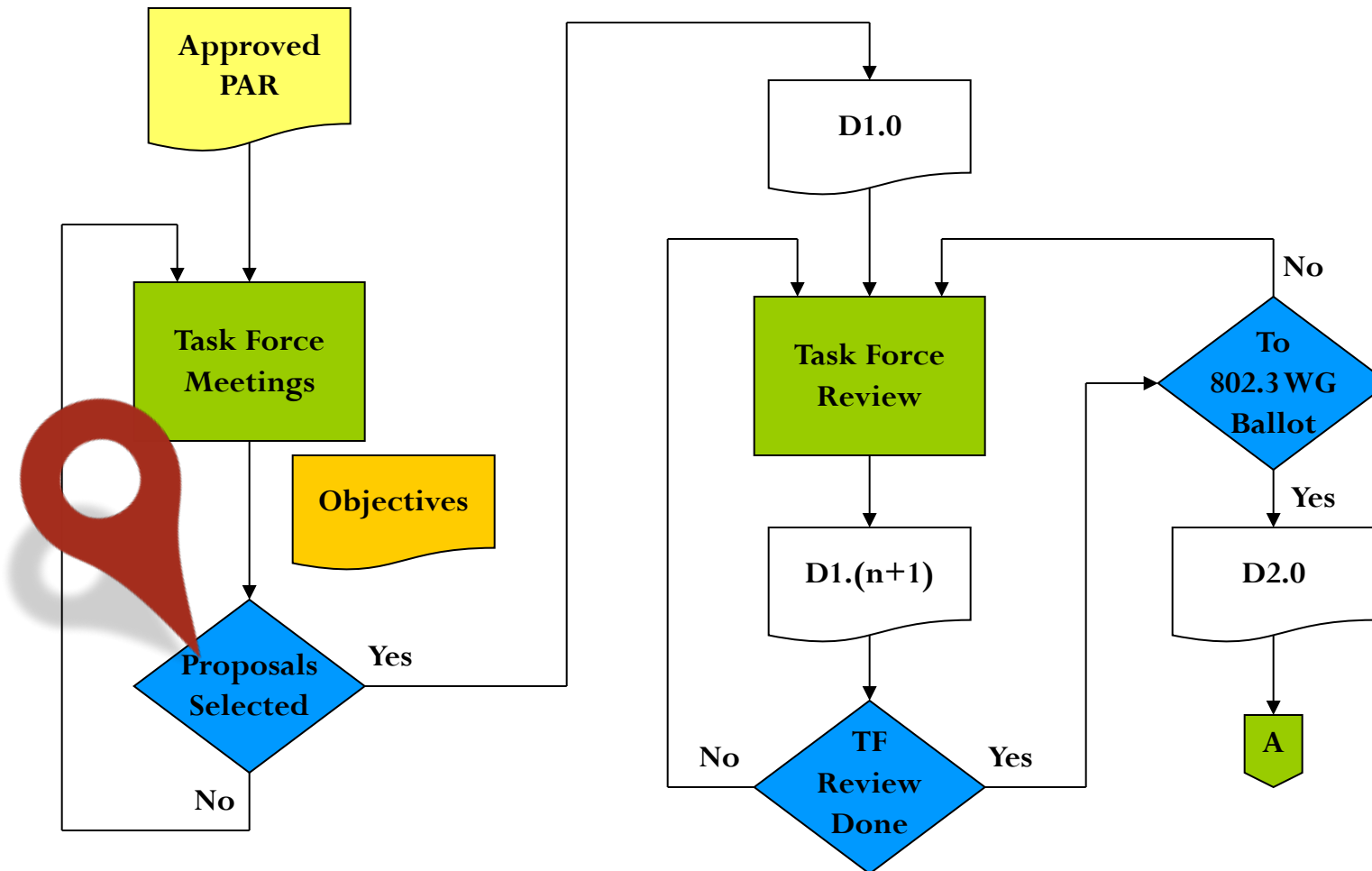
(Latest revision of IEEE 802 LMSC Working Group Policies and Procedures: <http://www.ieee802.org/devdocs.shtml>)

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

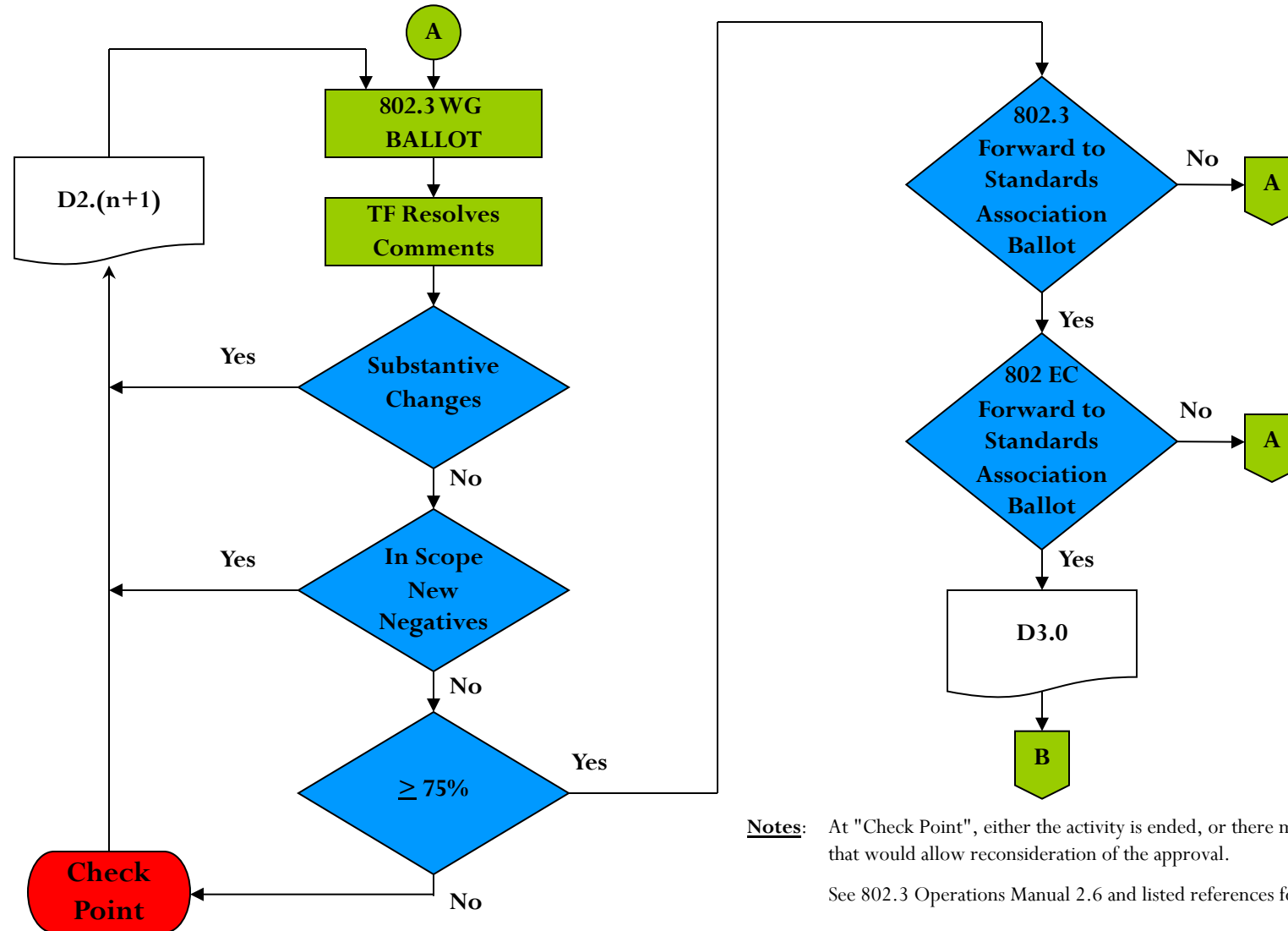


Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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



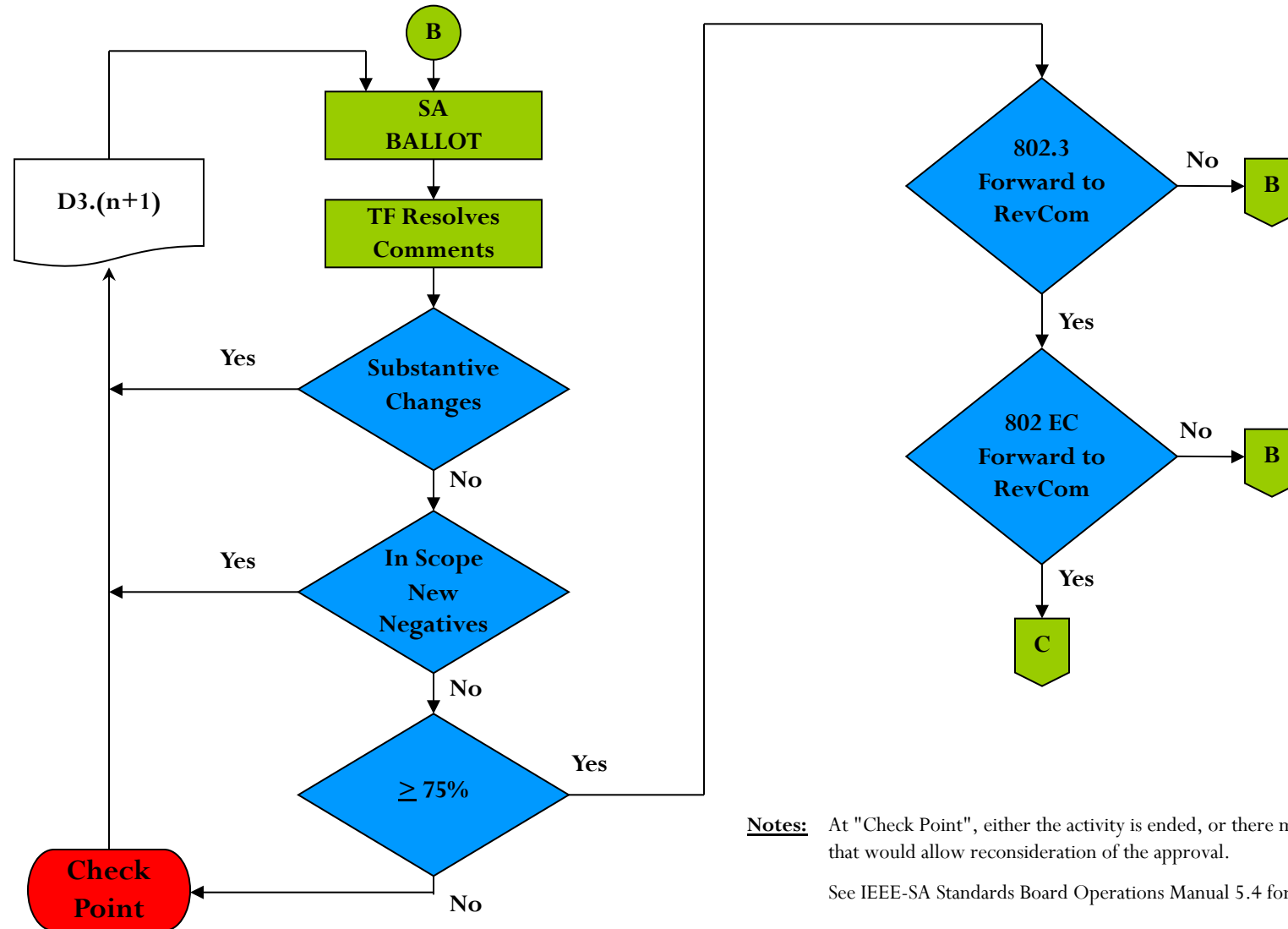
Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase



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

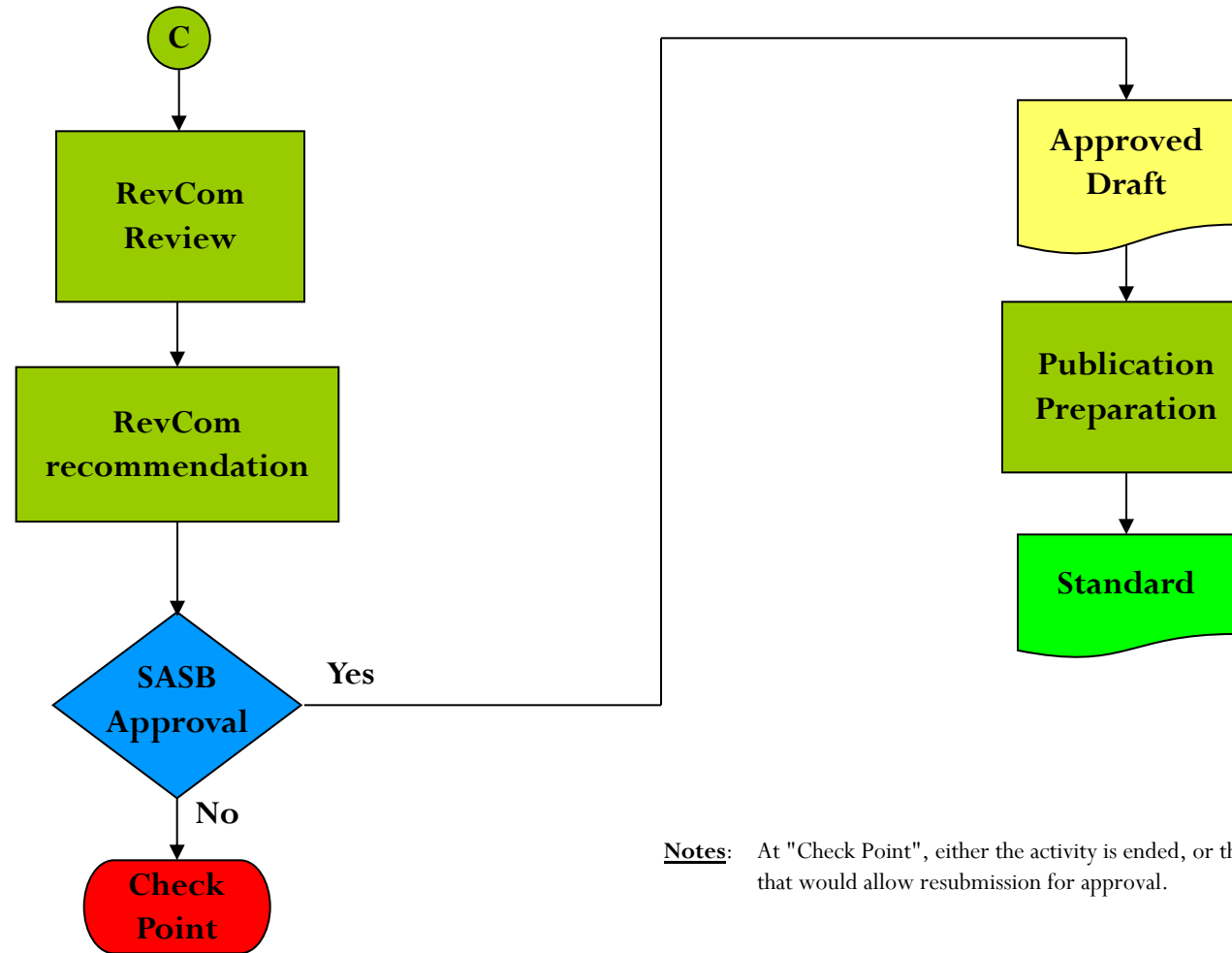
Overview of IEEE 802.3 Standards Process (4/5)- IEEE Standards Association (SA) Ballot Phase



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

Ad hocs

Charter: The charter of the IEEE 802.3cu Ad hoc is to discuss topics and provide contributions towards helping the Task Force with its decisions.

Chair: Mark Nowell (provisional)

http://www.ieee802.org/3/cu/public/cu_adhoc/cu_archive/index.html

Expected to continue the regular cadence.

- Timeslot: Typically Wed @ 8am PT

IEEE P802.3cu Task Force Approved Project Documents

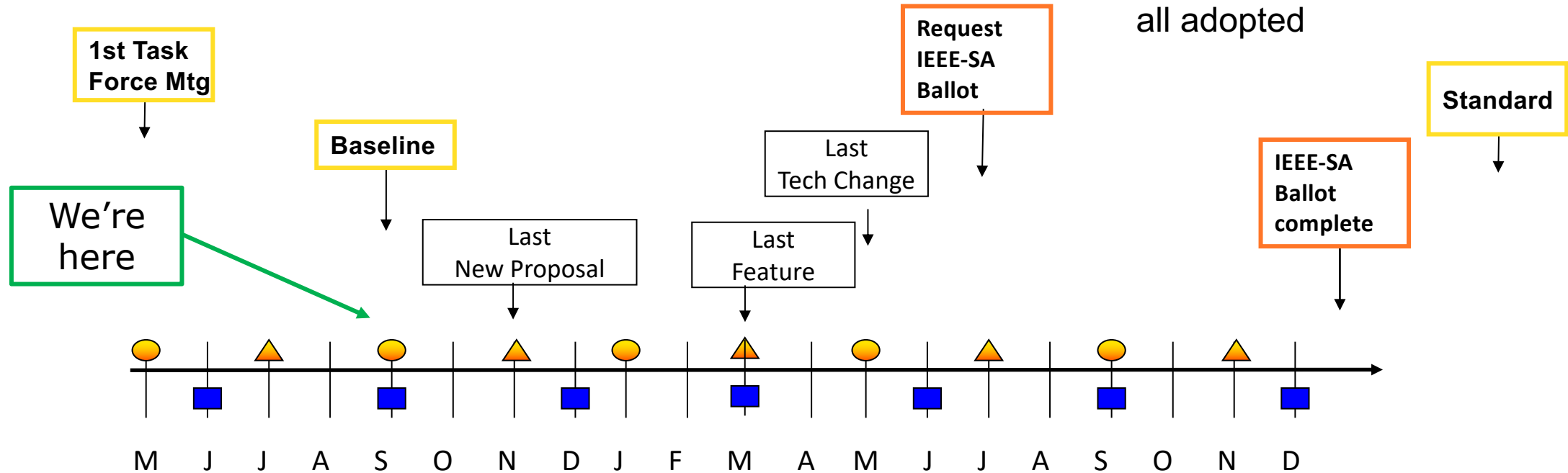
- PAR
 - http://www.ieee802.org/3/cu/P802_3cu_PAR.pdf
- CSD
 - <https://mentor.ieee.org/802-ec/dcn/19/ec-19-0062-00-ACSD-p802-3cu.pdf>
- Objectives
 - http://www.ieee802.org/3/cu/Objectives_Approved_Mar_2019.pdf
- Timeline
 - TBD

Approved Objectives (March 2019)

- Support a MAC data rate of 100 Gb/s
- Support a MAC data rate of 400 Gb/s
- Support full-duplex operation only
- Preserve the Ethernet frame format utilizing the Ethernet MAC
- Preserve minimum and maximum FrameSize of current IEEE 802.3 standard
- Provide appropriate support for OTN
- Support a BER of better than or equal to 10^{-12} at the MAC/PLS service interface (or the frame loss ratio equivalent) for 100 Gb/s operation
- Support a BER of better than or equal to 10^{-13} at the MAC/PLS service interface (or the frame loss ratio equivalent) for 400 Gb/s operation
- Define a single-wavelength 100 Gb/s PHY for operation over SMF with lengths up to at least 2 km
- Define a single-wavelength 100 Gb/s PHY for operation over SMF with lengths up to at least 10 km
- Define a four-wavelength 400 Gb/s PHY for operation over SMF with lengths up to at least 2 km
- Define a four-wavelength 400 Gb/s PHY for operation over SMF with lengths up to at least 10 km

IEEE P802.3cu Task Force draft Timeline

Review and adoption after baselines all adopted



2019 2020 2021

D1.0 D1.1 D1.2 D2.0 D2.1 D2.2 D3.0 D3.1 D3.2

TF Reviews WG Ballots IEEE-SA Ballots

Legend

- ▲ IEEE 802 Plenary
- IEEE 802.3 Interim
- IEEE-SA Standards Board

Goals for the meeting

- Review technical contributions
- Adopt remaining baseline if consensus exists
- Depending on progress, initiate working document for task force review
- Changes to objectives if necessary

Objectives

- *Current Objective:*
 - Define a four-wavelength 400 Gb/s PHY for operation *over SMF with lengths up to at least 10 km*
- Current baseline proposals:
 - 6 km, 7 km, 10 km
 - The objective will need to change if TF chooses to adopt a different baseline.
- Possible modifications to objective if < 10 km baseline gets consensus:
 - a) Define a four-wavelength 400 Gb/s PHY for operation over SMF with lengths up to at least **x** km. (x TBD assuming 6 or 7)
 - b) Define a four-wavelength 400 Gb/s PHY for operation over SMF with lengths up to at least **x** km with a total channel insertion loss of ≥ 6.3 dB.

If TF does a motion to adopt a 400GBASE-LR4 baseline, we can include language to modify objective at same time.

- Working Group approval required if we do this.

Meeting Logistics

- Meeting room: Grand 5
 - Monday
 - 9am start

Meeting Schedule – Mon

Note –Times listed are subject to change.
Updated versions will be captured with new
filename versions

Monday
09-Sep-19

<u>Time</u>	<u>Presenter</u>	<u>Affiliation</u>	<u>Title</u>	<u>File Name</u>	Dur.
9:00 AM	Mark Nowell	Cisco	Agenda and General Information	agenda_3cu_01_0919.pdf	0:35
9:35 AM	Gary Nicholl	Cisco	Editorial update	nicholl_3cu_01_0919.pdf	0:10
9:45 AM	Xu Yu	Huawei	Further test results for 400GBASE-LR4	yu_3cu_01_0919.pdf	0:20
10:05 AM	Brian Welch	Cisco	400GBase-LR4 Dispersion Testing	welch_3cu_01_0919.pdf	0:20
10:25 AM	Break				0:15
10:40 AM	David Lewis	Lumentum	Feasibility Of 400GBASE-LR4 Using EML Transmitters On CWDM Grid Over 10 km (6.3 dB Channel Loss) of Single Mode Fiber	tamura_3cu_01_0919.pdf	0:20
11:00 AM	Chris Cole	Finisar	400GBASE-LR4 Link Budget Proposal	cole_3cu_01_0919.pdf	0:30
11:30 AM	Peter Stassar	Huawei	Maximum distance for 400GBASE-LR4	stassar_3cu_01_0919.pdf	0:30
12:00 PM	Break				1:00
1:00 PM	David Lewis	Lumentum	400GBASE-LR4 (7 km) Baseline Proposal	lewis_3cu_01_0919.pdf	0:30
1:30 PM	Discussion, Straw Poll, Motions				1:30
3:00 PM	Break				0:20
3:20 PM	Discussion, Straw Poll, Motions				1:30
4:50 PM	Adjourn				-

Future Meetings & Ad hocs

- Ad-hoc meeting plans
 - On-going quasi-bi-weekly meetings, agendas will be published.
 - Timeslot TBD
- See: <http://www.ieee802.org/meeting/index.html>
- Nov 2019 Plenary
 - Week of Nov 11th, 2019. Waikoloa Village, HI, USA
- Jan 2020, Interim
 - Week of Jan 20th 2020, Geneva, CH
- March 2020, Plenary
 - Week of March 16th, 2020. Atlanta, Ga.
- May 2020, Interim
 - Week of May 18th, 2020. Pasadena, Ca.

- Anyone interested in hosting an interim meeting contact me or the IEEE 802.3 Executive Secretary Steve Carlson.

Thank You!