AGENDA AND GENERAL INFORMATION
100Gb/s per Lane for Electrical Interfaces and Electrical PHYs Study Group

BETH KOCHUPARAMBIL – ACTING STUDY GROUP CHAIR

EMPLOYED BY AND AFFILIATED WITH CISCO SYSTEMS

GENEVA, SWITZERLAND, JANUARY 25-26, 2018

AGENDA

- Confirmation of Chair
- Welcome and Introductions
- Approve Agenda
- Ground Rules
- IEEE structure and policies
- Reflector and Web
- **Group Update & Goals for the Meeting**
- Liaison and Communications
- Presentations
- Motions and closing business
- Future Meetings

INTRODUCTIONS

Beth Kochuparambil - Cisco Systems, Inc.

Study Group Chair

Kent Lusted – Intel

Study Group Vice Chair & Recording Secretary

STUDY GROUP 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 2017 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 2017 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

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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/

  - (For interim) Password will be provided

- Please ALSO initial on the attendance book by the door. [6]

IEEE STRUCTURE

IEEE-SA
Standards Association

Standards | Process

IEEE-SA
Standards Board

RevCom
Review Committee

NesCom
New Stds. Committee

IEEE 802
Sponsor Group

IEEE 802.3
Working Group

IEEE 802.3
Study Group

Approval Process

Standards Process

Technical Activities

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**
  http://standards.ieee.org/about/sasb/audcom/pnp/LMSC.pdf

- **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

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 … 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
If you have questions, contact the IEEE-SA Standards Board Patent Committee Administrator at patcom@ieee.org
This slide can be found at https://development.standards.ieee.org/myproject/Public/mytools/mob/preparslides.pdf
02 January 2018

REFLECTOR AND WEB

- To subscribe to the 100GEL reflector, send an email to:
  ListServ@ieee.org

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

  subscribe **STDS-802-3-100GEL** *<yourfirstname> <yourlastname>*

  end

- Send 100GEL reflector messages to:
  STDS-802-3-100GEL@LISTSERV.IEEE.ORG

- Study Group web page URL:
  http://www.ieee802.org/3/100GEL/index.html

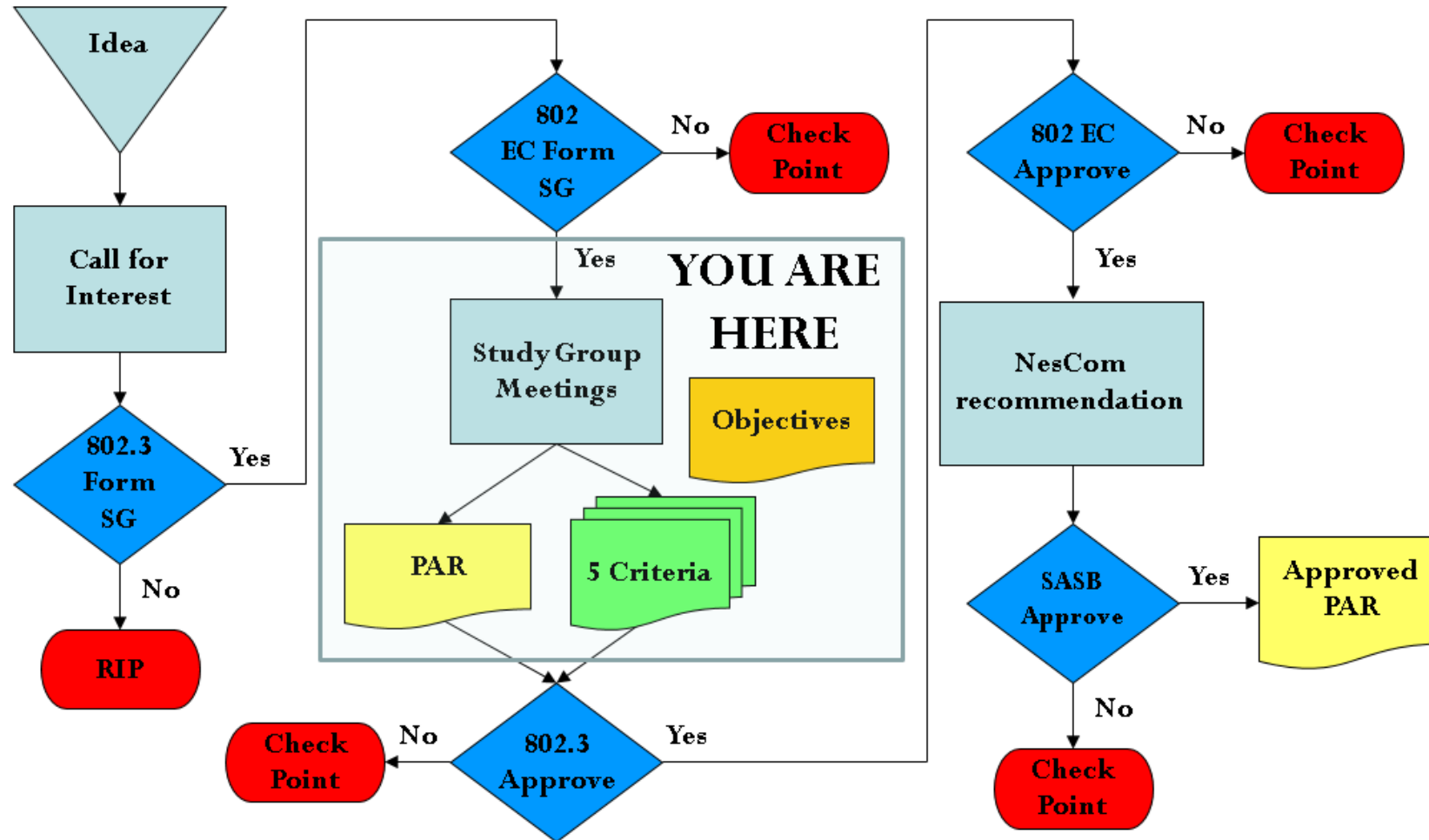# GROUP UPDATE AND GOALS FOR THE MEETING

PROJECT STATUS – CFI RECAP

- 146 gathered on Tuesday. Nov 7th for Consensus building

- Presentation given discussing market need, technical feasibility, and why now topics for 100Gb/s per lane for electrical interfaces and electrical PHYs.

  - http://www.ieee802.org/3/cfi/1117_3/CFI_03_1117.pdf
  - No questions brought forward on the floor.

- Study group, or even Task Force, -like material presented already back in May 2017

- Straw poll: **I would participate** in a "100Gb/s per lane for Electrical Interfaces and PHYs" study group in IEEE 802.3.   **Tally: 80**

- Straw poll: **My company would support participation** in a "100Gb/s per lane for Electrical Interfaces and PHYs" study group.   **Tally: 45**

PROJECT STATUS – STUDY GROUP FORMATION

- Move that the IEEE 802.3 Working Group request the formation of a Study Group *to develop a Project Authorization Request (PAR) and Criteria for Standards Development (CSD)* responses for "100Gb/s per Lane for Electrical Interfaces and Electrical PHYs".
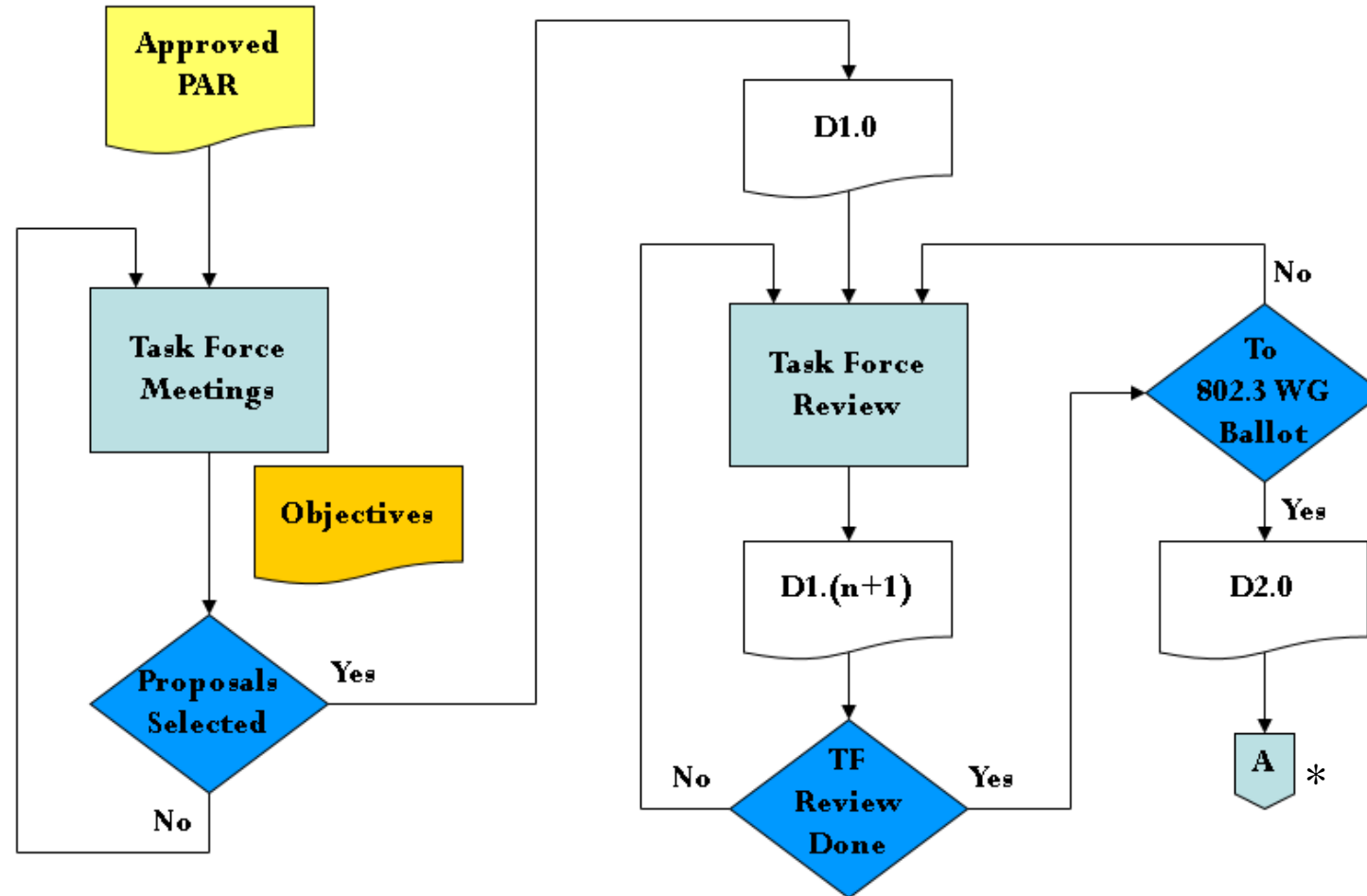
Yes: 93 No: 0 Abstain: 5

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.

*NOTE: Further steps (pages 3,4,5 of this process) are moved to the backup slides

STUDY GROUP – AD HOCS

- Met Dec 20, Jan 3, and Jan 8 via teleconference
- Presentation and discussion topics
    - Work to be done as a Study Group
    - CSD/PAR completion impact on timing
    - System architecture
    - Objective forms
    - CSD language
    - Initial channel data
- http://www.ieee802.org/3/100GEL/public/adhoc/index.html

STUDY GROUP – AD HOCS

- Goal of Study Group is to study the problem and develop the following:
  - PAR
  - CSD Responses
  - Objectives (owned by the working group)
- Solving the problem, developing solutions, writing specifications are all Task Force activities
- Impact of timing
  - Complete PAR/CSD this week → May Task Force
  - Complete PAR/CSD March or May → Nov Task Force
  - Straw poll on Ad Hoc call shows incentive to move

Questions		Results
1. I would support		
⦿ A.	Targeting TF in May	16/47 (...
◯ B.	Targeting TF in Nove...	11/47 (...
◯ C.	Targeting TF later tha...	1/47 (2...
◯ D.	Need more information	8/47 (1...
	No Answer	11/47 (...

GOALS FOR THIS MEETING

- Completed PAR
- Completed CSD Responses
- Adopt Objective forms

LIAISONS AND COMMUNICATIONS

- Liaison from OIF on CEI-112G projects and scope
  - http://www.ieee802.org/3/minutes/jan18/incoming/OIF_to_IEEE_802d3_112G_Jan_2018.pdf
- Next OIF meeting is in April

MEETING SCHEDULE – THURSDAY PRESENTATIONS

Time	Presenter	Affiliation	Title	File Name	Duration
1:00 PM	Beth Kochuparambil	Cisco	Agenda and General Information	agenda_100GEL_01_0118.pdf	0:50
1:50 PM	Mark Nowell	Cisco	Study Group Crash Course	nowell_100GEL_01_0118.pdf	0:20
2:10 PM	Dave Ofelt	Juniper	100 Gb/s Electrical Links System View	ofelt_100GEL_01_0118.pdf	0:30
2:40 PM	Ali Ghiasi	Ghiasi Quantum LLC	Architectural consideration for 100 Gb/s/lane Systems	ghiasi_100GEL_01_0118.pdf	0:30
3:10 PM			BREAK		0:15
3:25 PM	Kent Lusted	Intel	Proposed CSD Language	lusted_100GEL_01_0118.pdf	0:30
3:55 PM	Beth Kochuparambil	Cisco	Proposed PAR Language	kochuparambil_100GEL_01_0118.pdf	0:30
4:25 PM	George Zimmerman	CME Consulting/Aquantia	One lane electrical – what do we really mean?	zimmerman_100GEL_01_0118.pdf	0:10
4:35 PM	Gary Nicholl	Cisco	Initial thoughts on 100Gb/s per lane AUI Objectives	nicholl_100GEL_01_0118.pdf	0:20
4:55 PM			Objectives discussion, Straw Polls		0:45
5:40 PM			BREAK FOR THE DAY - Working group meeting @ 7:00 PM		

MEETING SCHEDULE – FRIDAY PRESENTATIONS

Time	Presenter	Affiliation	Title	File Name	Duration
8:00 AM	Beth Kochuparambil	Cisco	Opening		0:10
8:10 AM	Mike Li	Intel	Update on OIF CEI-112G Activity	li_100GEL_01_0118.pdf	0:20
8:30 AM	Rob Stone	Broadcom	100G / Lane Electrical Interfaces for Datacenter Switching	stone_100GEL_01_0118.pdf	0:20
8:50 AM	Nathan Tracy	TE Connectivity	Measured Data for 112G Chip to Module Channel Analysis	tracy_100GEL_01_0118.pdf	0:20
9:10 AM	Tom Palkert	Molex	System impacts of CR variant	palkert_100GEL_01_0118.pdf	0:20
9:30 AM	Chris DiMinico	MC Communications/Pand	Considerations for 100 Gb/lane Electrical Interfaces	diminico_100GEL_01_0118.pdf	0:20
9:50 AM	Howard Heck	Intel	Host backplane channel models	heck_100GEL_01_0118.pdf	0:20
10:10 AM			BREAK		0:15
10:25 AM	Nathan Tracy	TE Connectivity	Channel Simulations for 112G Backplane Analysis	tracy_100GEL_03_0118.pdf	0:20
10:45 AM	Toshiaki Sakai	Socinet	Technical Feasibility of 100Gb/s per lane SerDes for Backplanes	sakai_100GEL_01/02/03_0118.pdf	0:20
11:05 AM	Ramin Farjadrad	Aquantia	An Alternative Proposal to Maximize 100Gbps/Lane Electrical Link Performance	farjadrad_100GEL_01_0118.pdf	0:20
11:25 AM	Phil Sun	Credo	100Gbps SERDES Discussion	sun_100GEL_01_0118.pdf	0:20
11:45 AM			Study Group Documentation (CSD, PAR, Objectives, etc), Discussion, Polls, Motions		0:45
12:30 PM			LUNCH		1:00
1:30 PM			Study Group Documentation (CSD, PAR, Objectives, etc), Discussion, Polls, Motions		2:00
3:30 PM			BREAK		0:15
3:45 PM			Study Group Documentation (CSD, PAR, Objectives, etc), Discussion, Polls, Motions		2:05
5:50 PM			Closing Business		0:10
6:00 PM			Adjurn		

FUTURE MEETINGS

- Ad Hocs – Mondays starting Feb 5th, 8:00-10:00am PST

- March Plenary – Rosemount, IL (near Chicago)
  - Week of March 5th
  - Early Registration ends Friday, 1/26
- May Interim – Pittsburg, PA
  - Week of May 21st
- July Plenary – San Diego, CA
  - Week of July 9th

- See http://www.ieee802.org/3/interims/index.html for more information
- Anyone interested in hosting a interim meeting contact me or the IEEE 802.3 Executive Secretary Steve Carlson.
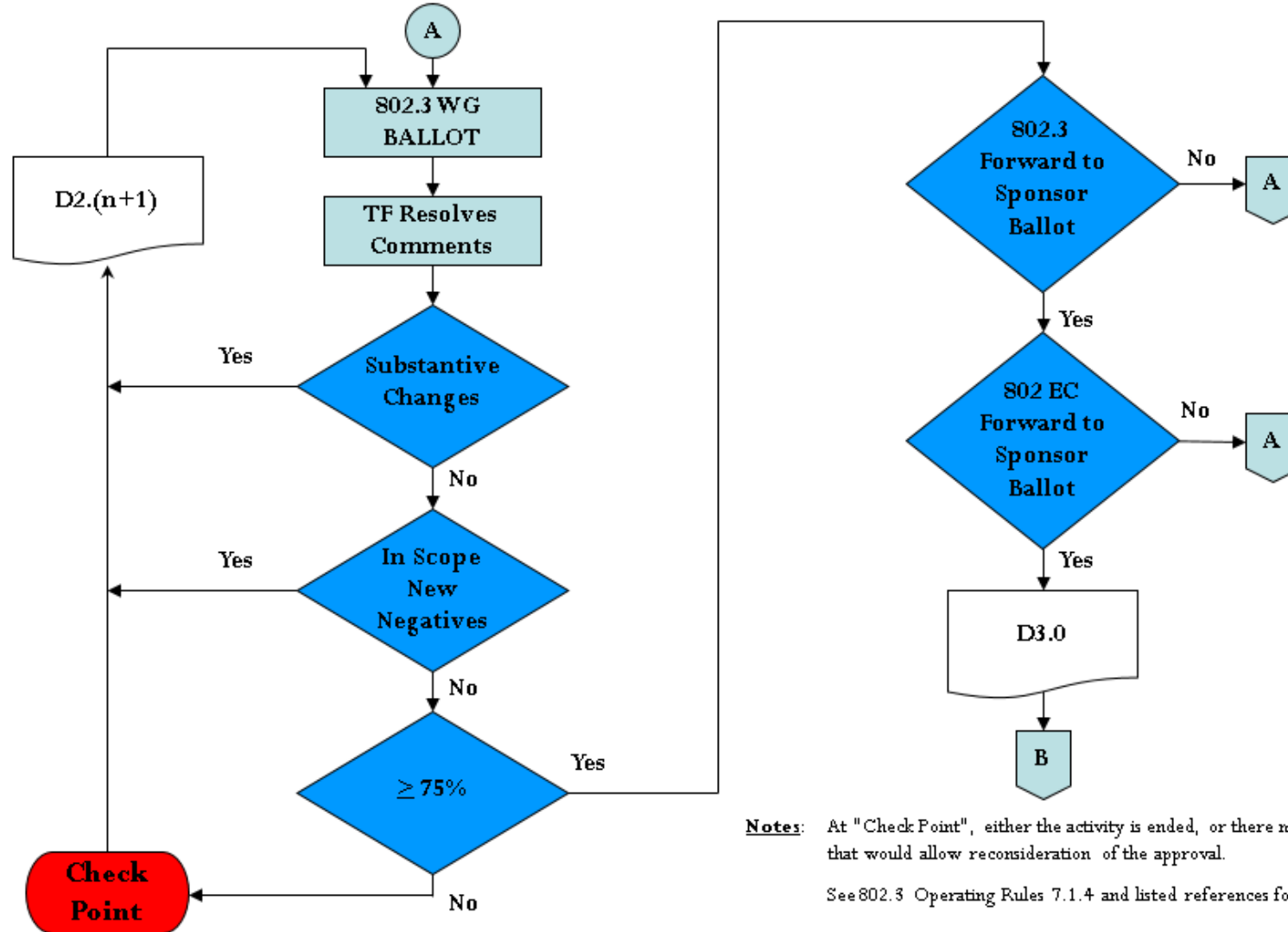
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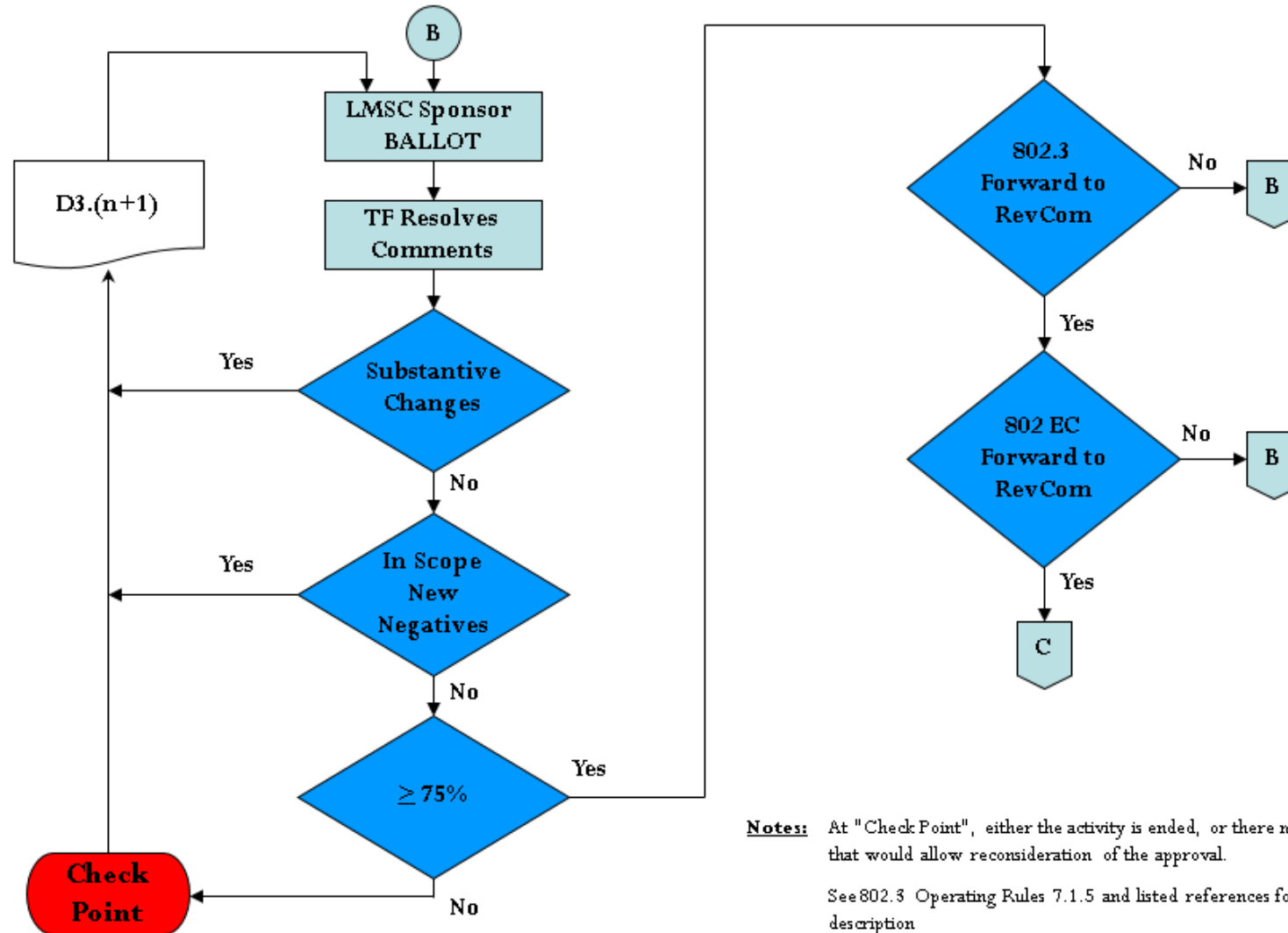
BACKUP SLIDES: REMAINING SLIDES OF STANDARDS PROCESS

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 Operating Rules 7.1.4 and listed references for complete description
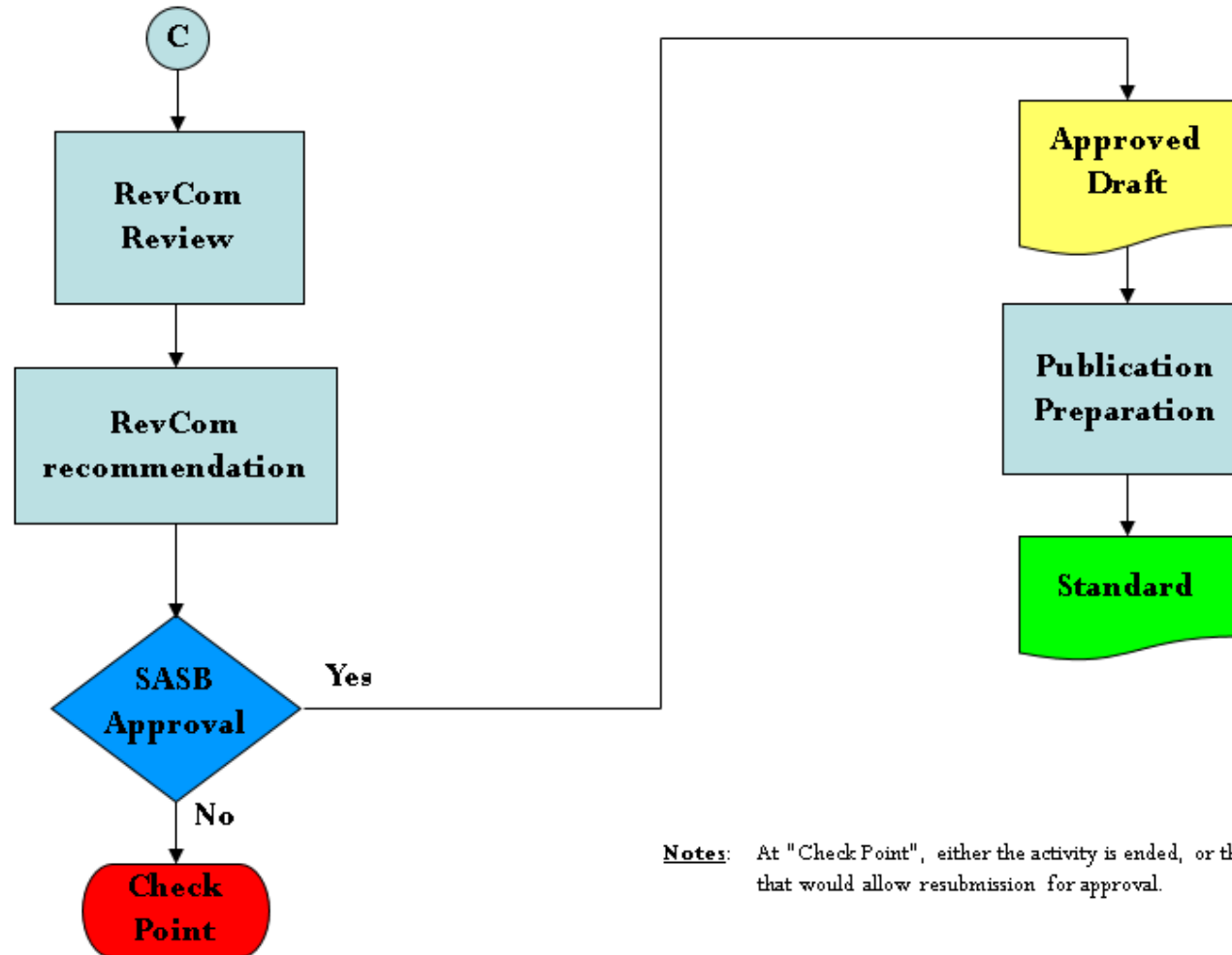
Overview of IEEE 802.3 Standards Process (4/5)- Sponsor Ballot Phase

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 Operating Rules 7.1.5 and listed references for complete description

Overview of IEEE 802.3 Standards Process (5/5) – Final Approvals / Standard Release

C

RevCom Review

RevCom recommendation

SASB Approval — Yes

No

Check Point

Approved Draft

Publication Preparation

Standard

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