Agenda and General Information

IEEE 802.3 100Gb/s Ethernet Electrical Backplane and

Twinaxial Copper Cable Assemblies Study Group

Ft. Lauderdale, FL, USA

January 2011

Agenda

- Appointment of Recording Secretary
- Confirmation of Chair
- Welcome and Introductions
- Goals for this Meeting
- Reflector and Web
- Ground Rules
- IEEE
  - Structure
  - Bylaws and Rules
  - Call for Patents
  - IEEE Standards Process
- Liaisons and Communications
- Presentations
- Motions and Closing Business
- Future Meetings

100Gb/s Ethernet Electrical Backplane and Twinaxial Copper Cable Assemblies Study Group

IEEE 802.3 Interim, Jan 2011
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Task Force Decorum

- Press (i.e., anyone reporting publicly on this meeting) are to announce their presence (2007 SASB Op Manual 5.3.3.5)
- Photography or recording by permission only (5.3.3.4)
- Cell phone ringers off
- Wear your badges at all times in meeting areas

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Goals for the Week

- Hear presentations related to Objectives and 5 Criteria

- Start developing consensus on Objectives

- Lay the ground work for the next meeting

Reflector and Web

- To subscribe to the 100GCU reflector, send an email to:

  ListServ@ieee.org

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

  subscribe stds-802-3-100GCU <yourfirstname> <yourlastname>

  end

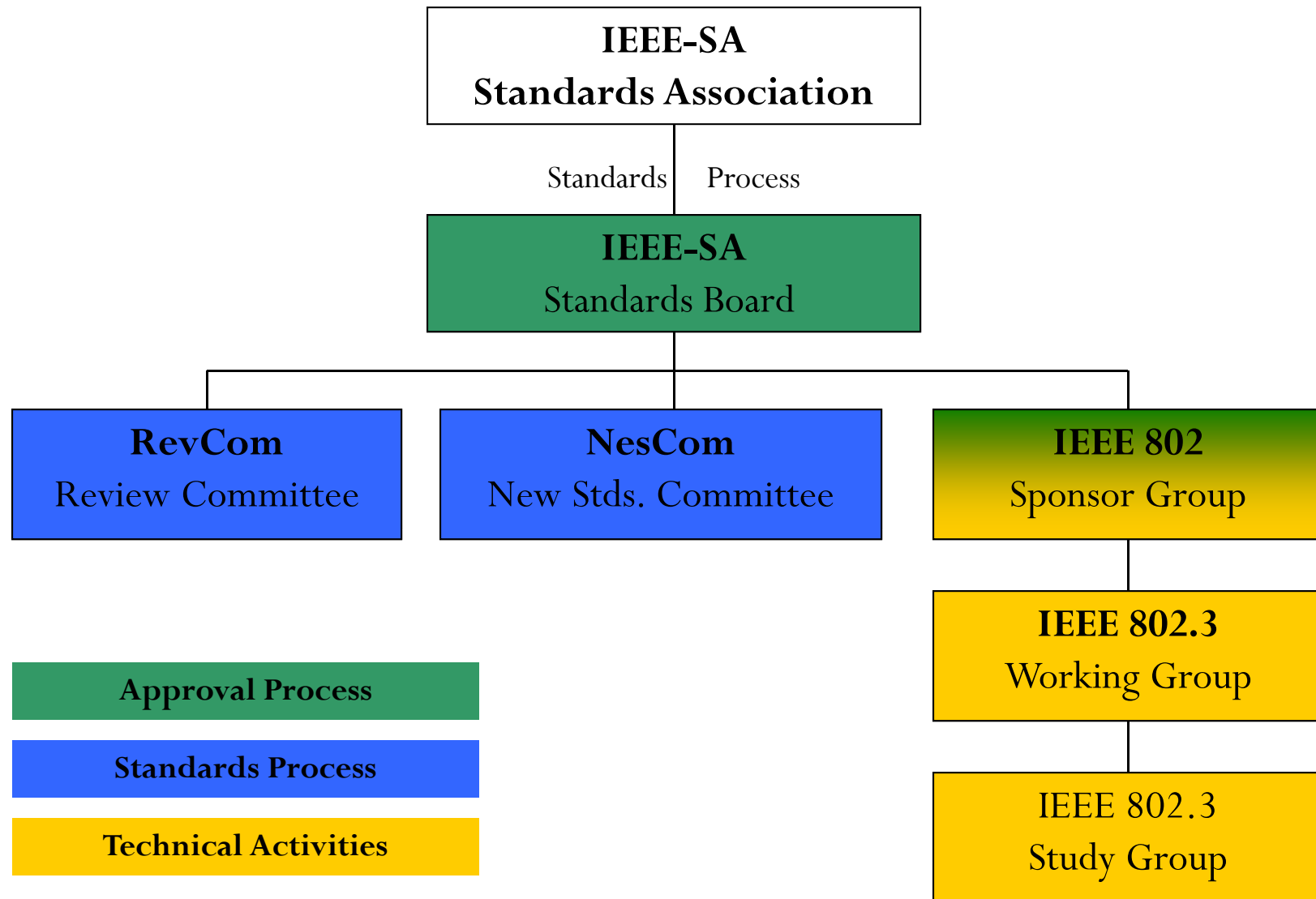- Send 100GCU reflector messages to:

  STDS-802-3-100GCU@listserv.ieee.org

- Task Force web page URL:

  http://www.ieee802.org/3/100GCU/index.html

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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

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IEEE Structure

```
          ┌─────────────────────────────┐
          │         IEEE-SA             │
          │   Standards Association     │
          └─────────────────────────────┘
                       │
              Standards │ Process
          ┌─────────────────────────────┐
          │         IEEE-SA             │
          │     Standards Board         │
          └─────────────────────────────┘
                       │
      ┌────────────────┼─────────────────────┐
┌──────────────┐ ┌──────────────────┐ ┌──────────────────┐
│   RevCom     │ │     NesCom       │ │    IEEE 802      │
│ Review       │ │ New Stds.        │ │  Sponsor Group   │
│ Committee    │ │ Committee        │ └──────────────────┘
└──────────────┘ └──────────────────┘          │
                                       ┌──────────────────┐
                                       │   IEEE 802.3     │
                                       │  Working Group   │
                                       └──────────────────┘
                                                │
                                       ┌──────────────────┐
                                       │   IEEE 802.3     │
                                       │   Study Group    │
                                       └──────────────────┘
```

Legend:
- **Approval Process** (green)
- **Standards Process** (blue)
- **Technical Activities** (yellow)

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Bylaws and Rules

- **IEEE-SA Operations Manual:**
  - http://standards.ieee.org/sa/sa-om.pdf
- **IEEE-SA Standards Board Bylaws:**
  - http://standards.ieee.org/guides/bylaws/sb-bylaws.pdf
- **IEEE-SA Standards Board Operations Manual:**
  - http://standards.ieee.org/guides/opman/sb-om.pdf
- **IEEE 802 LAN/MAN Standards Committee (LMSC) Policies and Procedures:**
  - http://standards.ieee.org/board/aud/LMSC_2009.pdf
- **IEEE 802 LAN/MAN Standards Committee (LMSC) Operations Manual:**
  - http://www.ieee802.org/PNP/2009-11/LMSC_OM_approved_091120_rev_100213.pdf
- **IEEE 802 LAN/MAN Standards Committee (LMSC) Working Group (WG) Policies and Procedures:**
  - http://www.ieee802.org/PNP/2009-11/LMSC_WG_PandP_approved_091120_rev_100213.pdf
- **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, including licensing costs of essential patent claims, of different technical approaches may be discussed in standards development meetings.

        - Technical considerations remain 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.**

If you have questions, contact the IEEE-SA Standards Board Patent Committee Administrator at patcom@ieee.org or visit http://standards.ieee.org/about/sasb/patcom/index.html

See *IEEE-SA Standards Board Operations Manual*, clause 5.3.10 and "Promoting Competition and Innovation: What You Need to Know about the IEEE Standards Association's Antitrust and Competition Policy" for more details.
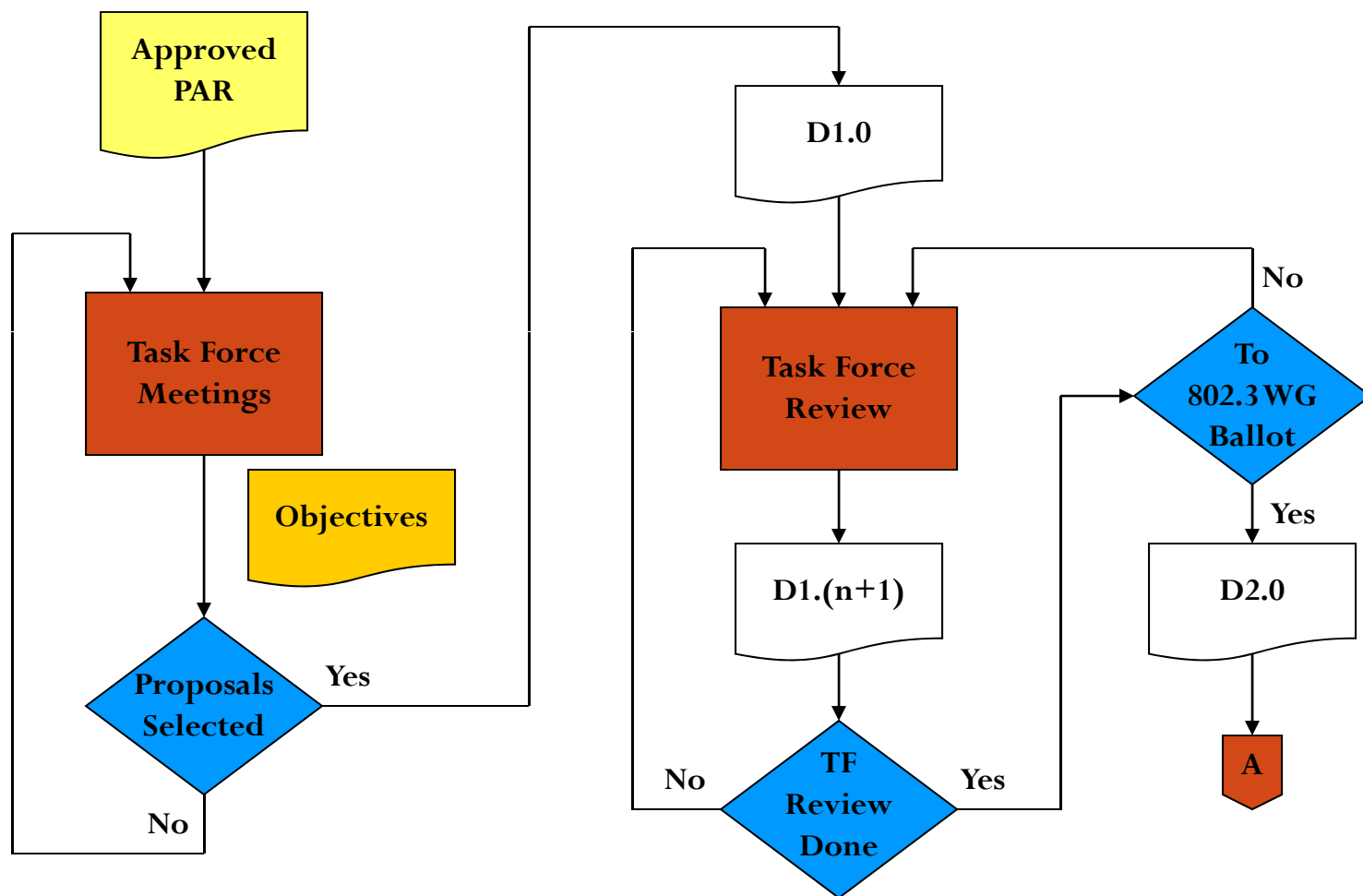
This slide set is available at https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.ppt

◆IEEE

25 Mar 2008
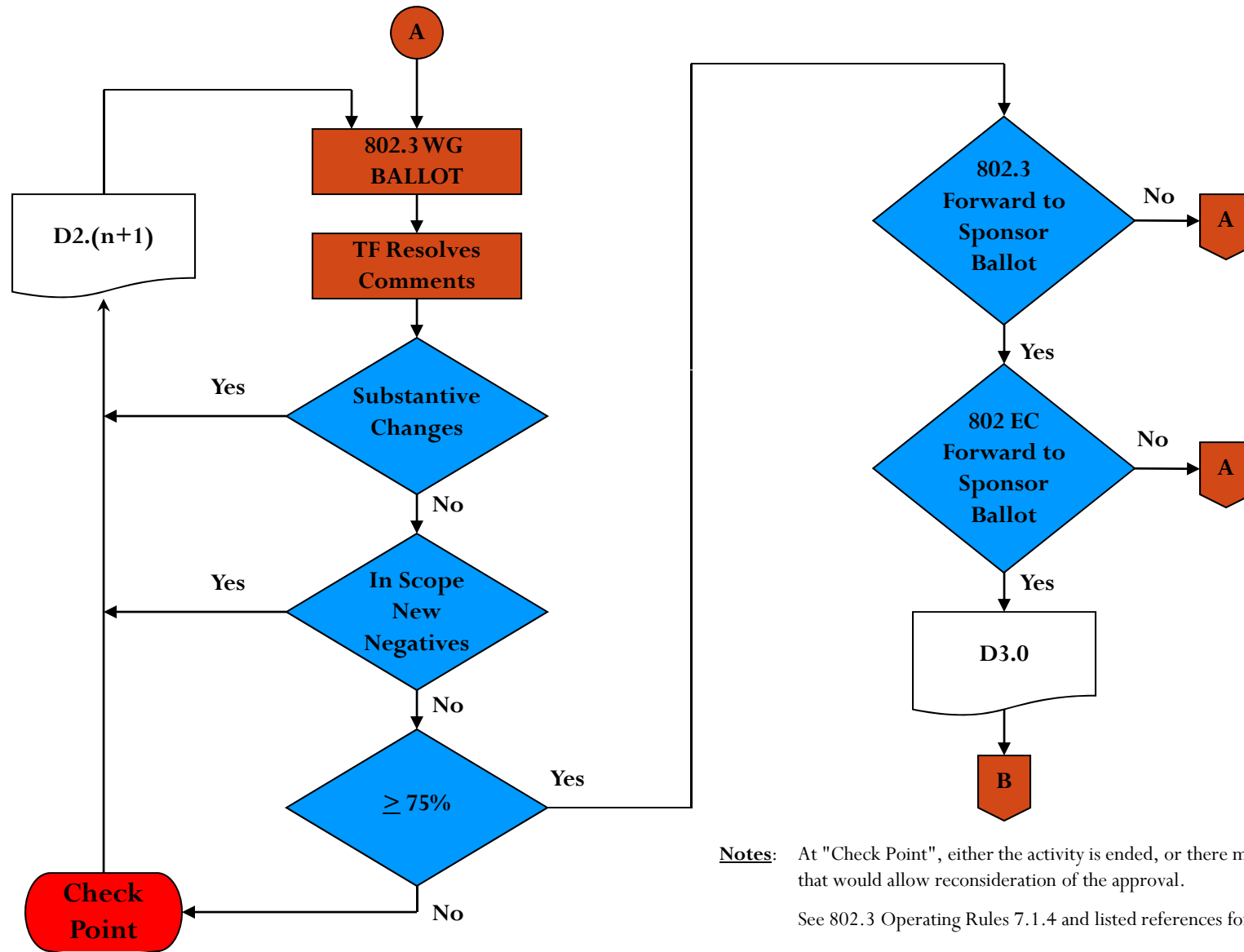
Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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A

802.3 WG BALLOT

D2.(n+1)

TF Resolves Comments

Substantive Changes — Yes

No

In Scope New Negatives — Yes

No

≥ 75% — Yes — No

Check Point

802.3 Forward to Sponsor Ballot — No — **A**

Yes

802 EC Forward to Sponsor Ballot — No — **A**

Yes

D3.0

B

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

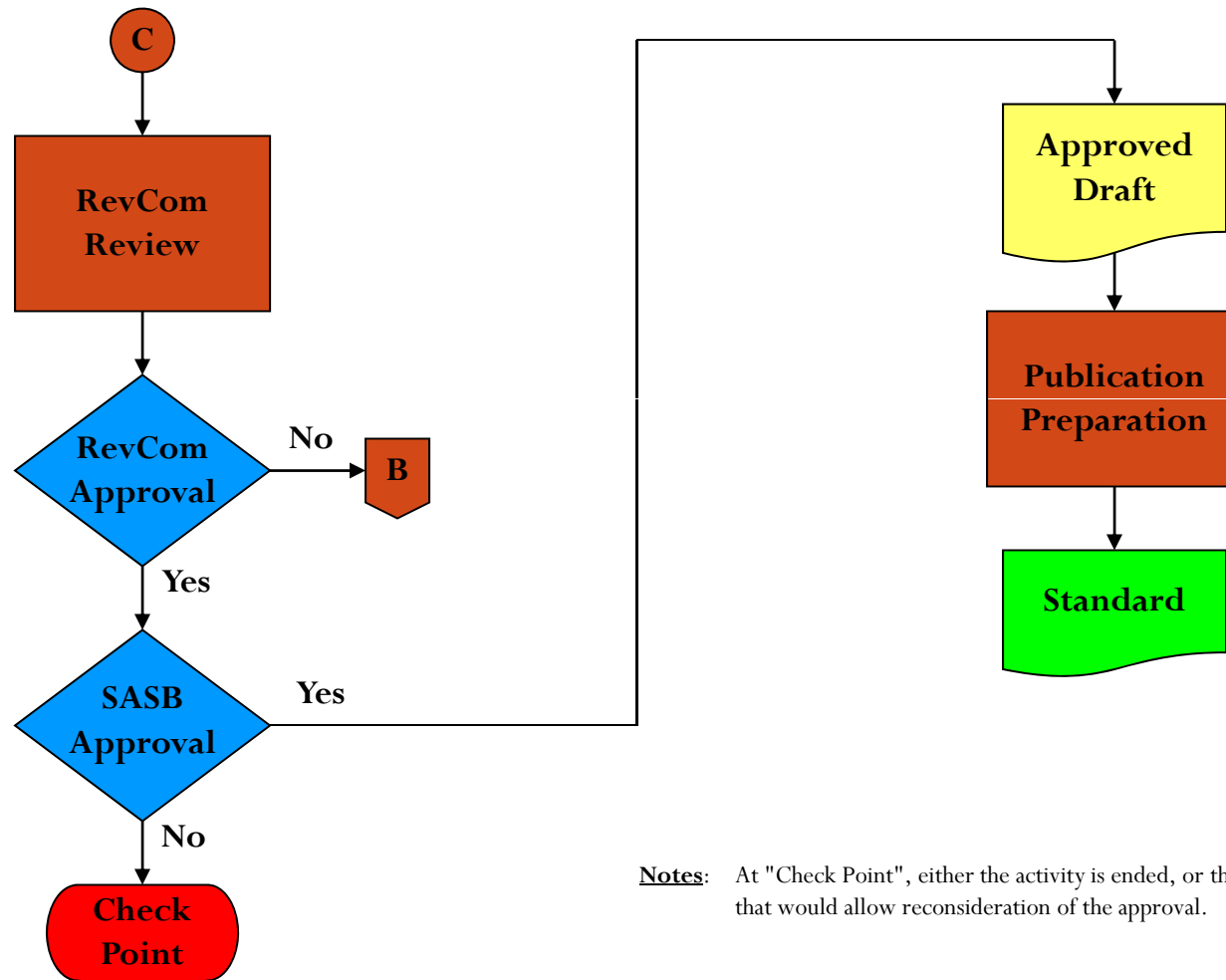See 802.3 Operating Rules 7.1.4 and listed references for complete description

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Overview of IEEE 802.3 Standards Process (4/5)- Sponsor Ballot Phase
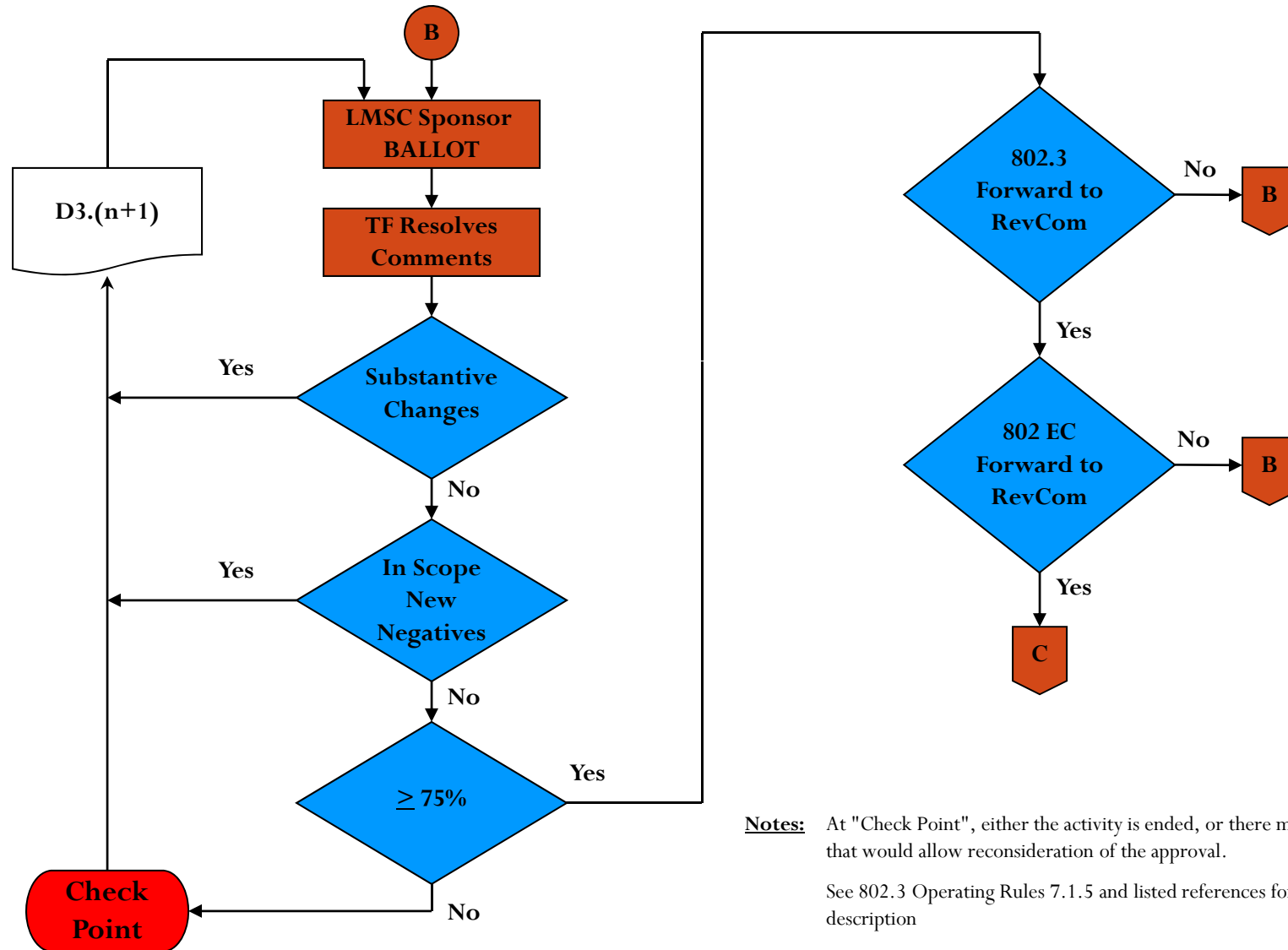
B

LMSC Sponsor BALLOT

D3.(n+1)

TF Resolves Comments

Substantive Changes — Yes

No

In Scope New Negatives — Yes

No

≥ 75% — Yes

No

Check Point

802.3 Forward to RevCom — No → B

Yes

802 EC Forward to RevCom — No → B

Yes

C

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

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The Study Group

- Normal function is to draft a complete PAR and Five Criteria
- Provide a plenary week tutorial to the LMSC.
- Gain approval at the WG 802.3, 802 SEC, IEEE NesCom and IEEE-SA Standards Board.
- SG only exists for 6 months
    - Extensions can be requested, voted on by 802.3, ratified by SEC
- Development of Objectives helps set the goals for the Task Force
- Consensus (>75%) required to move forward

- Not a goal – choosing a solution.

Request for Formation of Study Group
(as per Nov '10 Plenary Motion)

Move the IEEE 802.3 Working Group authorizes the formation of a study group for "100GbE Electrical Backplane and Twinaxial Copper Cable Assemblies."

Example #1 – IEEE P802.3ap Objectives

- **Preserve the 802.3/Ethernet frame format at the MAC Client service interface.**

- **Preserve min. and max. frame size of current 802.3 Std.**

- **Support existing media independent interfaces.**

- **Support operation over a single lane across 2 connectors over copper traces on improved FR-4 for links consistent with lengths up to at least 1m.**
  - **Define a 1 Gb/s PHY**
  - **Define a 10 Gb/s PHY**

- **Define a 4-lane 10Gb/s PHY for operation over the 802.3ap channel model.**

- **Consider auto-negotiation.**

- **Support BER of 10^{-12} or better.**

- **Meet CISPR/FCC Class A.**

Example #2 – IEEE P802.3ba Objectives

- Support full-duplex operation only
- Preserve the 802.3 / Ethernet frame format utilizing the 802.3 MAC
- Preserve minimum and maximum FrameSize of current 802.3 standard
- Support a BER better than or equal to 10^{-12} at the MAC/PLS service interface
- Provide appropriate support for OTN
- Support a MAC data rate of 40 Gb/s
- Provide Physical Layer specifications which support 40 Gb/s operation over:
    - at least 10km on SMF
    - at least 100m on OM3 MMF
    - at least 7m over a copper cable assembly
    - at least 1m over a backplane
- Support a MAC data rate of 100 Gb/s
- Provide Physical Layer specifications which support 100 Gb/s operation over:
    - at least 40km on SMF
    - at least 10km on SMF
    - at least 100m on OM3 MMF
    - at least 7m over a copper cable assembly

Project Documentation

- PAR
  - Title – What are we calling this?
  - Scope – The Focus
  - Purpose – Why do we want to do this?

- 5 Criteria
  - Broad Market Potential
  - Compatibility with IEEE Std. 802.3
  - Distinct Identity
  - Technical Feasibility
  - Economic Feasibility

Liaisons and Communications

- OIF
    - Ongoing communications between OIF and IEEE 802.3
        - during IEEE P802.3ba project
        - In regards to OIF CEI-25G-LR, CEI-28G-SR, and CEI-28GVSR

Presentations

Note –Times listed are subject to change.

Wednesday   12-Jan-11   All

Time	Presenter	Affiliation	Title	File Name
9:00 AM	John D'Ambrosia	Force10 Networks	Agenda and General Information	agenda_01_0111.pdf
9:45 AM	Wael Diab	Broadcom	Tutorial - Process	diab_01_0111.pdf
10:15 AM			Break	
10:30 AM	Howard Frazier	Broadcom	Review of the 5 Criteria	frazier_01_0111.pdf
11:00 AM	John D'Ambrosia	Force10 Networks	Process and Problems	dambrosia_01_0111.pdf
11:30 AM	Tom Palkert	Xilinx / Luxtera	OIF CEI-25G-LR overview	palkert_01_0111.pdf
12:00 PM			Lunch	
1:30 PM	Bengt Kvist	Ericsson AB	100GE in Telecom	kvist_01_0111.pdf
2:00 PM	Vittal Balasubramanian	FCI	Feasibility Study for: IEEE 802.3 100GbE Electrical Backplane / Copper Cabling Study Group	balasubramanian_01_0111.pdf
2:30 PM	Chris DiMinico	MC Communications / Leoni	IEEE 802.3 100GbE Electrical Backplane / Copper	diminico_01_0111.pdf
3:00 PM			Break	
3:30 PM	Megha Shanbhag	Tyco Electronics	Cabling Study Group	shanbhag_01_0111.pdf
4:00 PM	Mark Bugg	Molex	Technical Feasibility of Twinax Copper Cable for 4X25Gbps Data	bugg_01_0111.pdf
4:30 PM			Discussion and Straw Polls	
5:00 PM			Break	

Thur   13-Jan-11

Time	Presenter	Affiliation	Title	File Name
9:00 AM	John D'Ambrosia	Force10 Networks	Opening Comments	
9:05 AM	Adam Healey	LSI	Suggested Practices for Reporting Simulation Results	healey_01_0111.pdf
9:35 AM	Vasu Parthasarathy	Broadcom	Study of 100 Gb/s on 40GBASE-KR4 channel	parthasarathy_01_0111.pdf
10:05 AM			Break	
10:35 AM	Will Bliss	Broadcom	Bounds for communicating at 25Gbps over channels specified for 10G BASE KR	bliss_01_0111.pdf
11:05 AM	Ziad Hatab	Vitesse	Channel and System Analysis for Serial 25 Gb/s over Backplanes	hatab_01_0111.pdf
11:35 AM			Lunch	
1:00 PM	Sudeep Bhoja	Broadcom	100G FEC Requirements	bhoja_01_0111.pdf
1:30 PM	Zhongfeng Wang	Broadcom	FEC Options for 100G KR	wang_01_0111.pdf
2:00 PM			Discussion & Straw Polls	
3:00 PM			Break	
3:30 PM			Motions & Closing Business	
5:00 PM			Adjourn	

Future Meetings

- ## March 2011 Plenary
  - Singapore
  - Week of March 13
  - Marina Bay Sands Hotel

- ## May 2011 Interim
  - Date TBD
  - Location TBD

- ## July 2011 Plenary
  - San Francisco, CA, USA
  - Week of July 17
  - Hyatt Regency San Francisco at Embarcadero Center

- ## Anyone interested in hosting a meeting contact me.

Thank You!