Agenda and General Information

IEEE 802.3

100 Gb/s Backplane and Copper Cable

Study Group

John D'Ambrosia

Force10 Networks

Incline Village, NV, USA, May 2011

Agenda

- Welcome and Introductions
- Approve Agenda
- Approve Mar 11 Minutes
- Goals for this Meeting
- Reflector and Web
- Ground Rules
- IEEE
  - Structure
  - Bylaws and Rules
  - Call for Patents
  - IEEE Standards Process
- Liaisons and Communications
- Review of Action Items from Mar 2011 Mtg
- Presentations
- Motions and Closing Business
- Future Meetings

100Gb/s Backplane and Copper Cable Study Group

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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

Goals for the Week

- Hear presentations related to Objectives and 5 Criteria

- Consensus on Objectives, PAR, 5 Criteria

- Approve requesting IEEE 802.3WG submit project documentation

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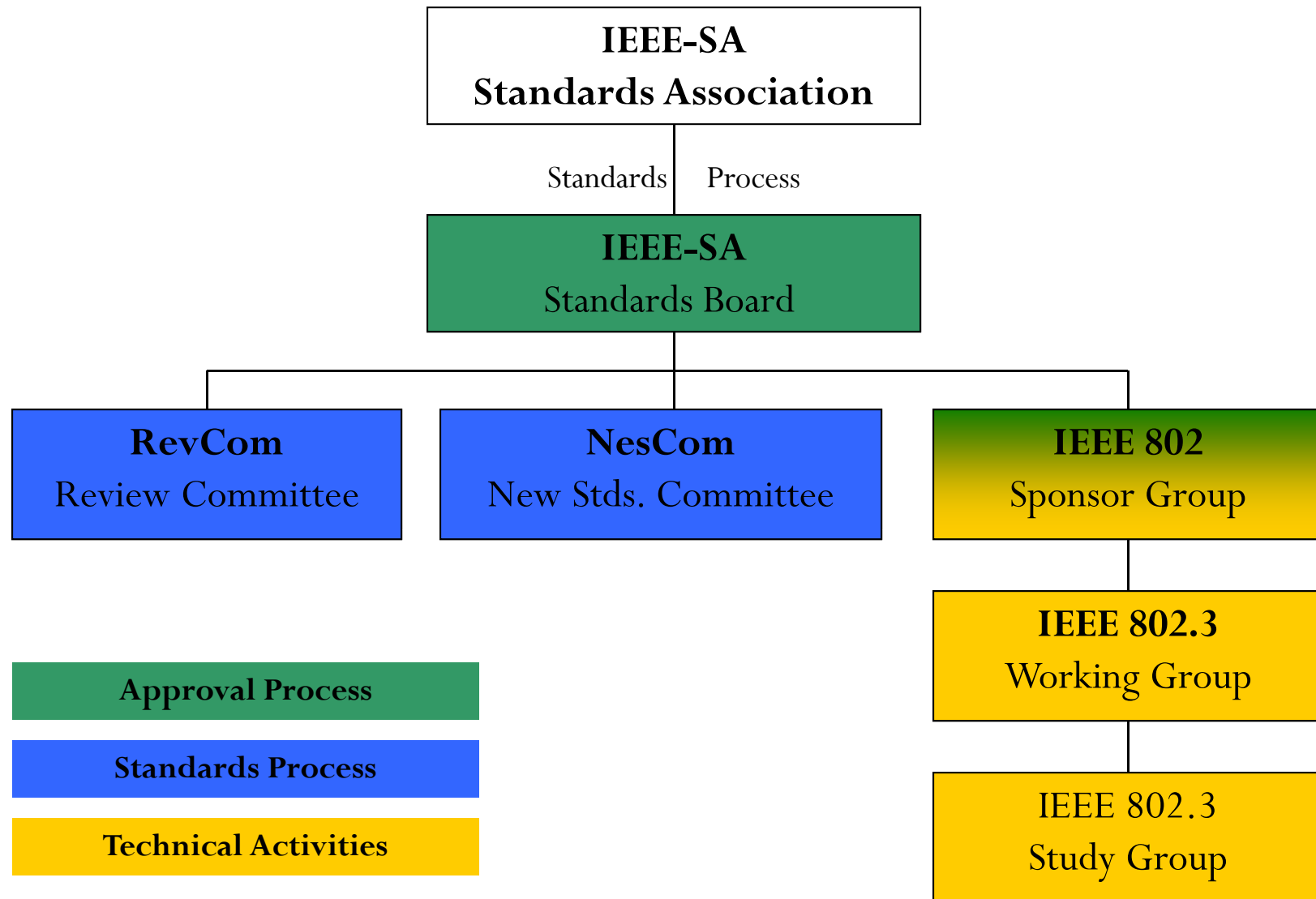 *STDS-802-3-100GCU@listserv.ieee.org*

- Task Force web page URL:
  http://www.ieee802.org/3/100GCU/index.html

Study Group Private Area

- URL: http://www.ieee802.org/3/100GCU/private/index.html
  - Username: xxxxxxx
  - Password: xxxxxxxx

- Write it down…

- Note - The draft is posted for your review only, and neither the draft nor access information should be copied or redistributed to others in violation of document copyrights.

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

IEEE Structure

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

Standards Process

Technical Activities

100Gb/s Backplane and Copper Cable Study Group

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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.
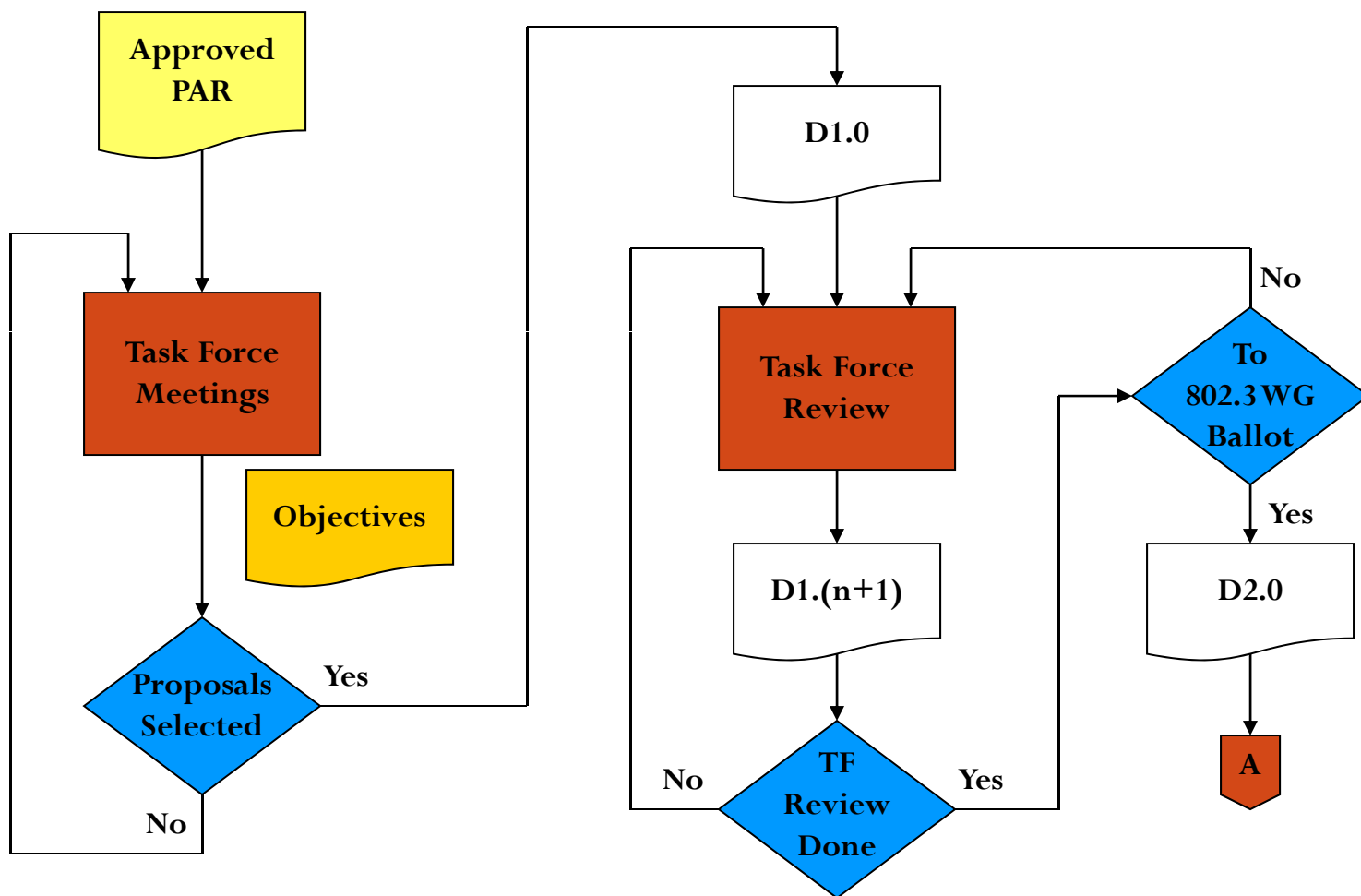
This slide set is available at https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.ppt
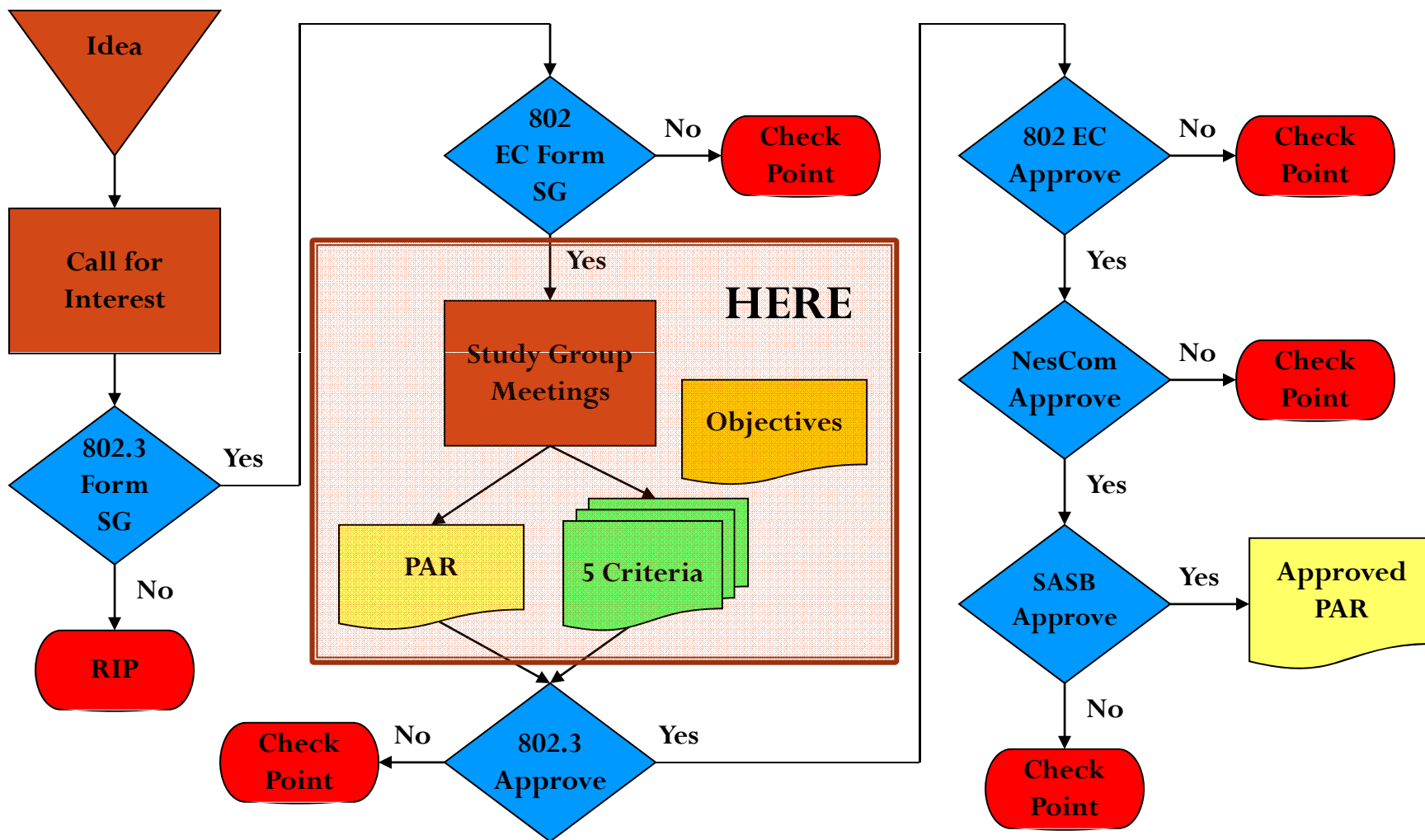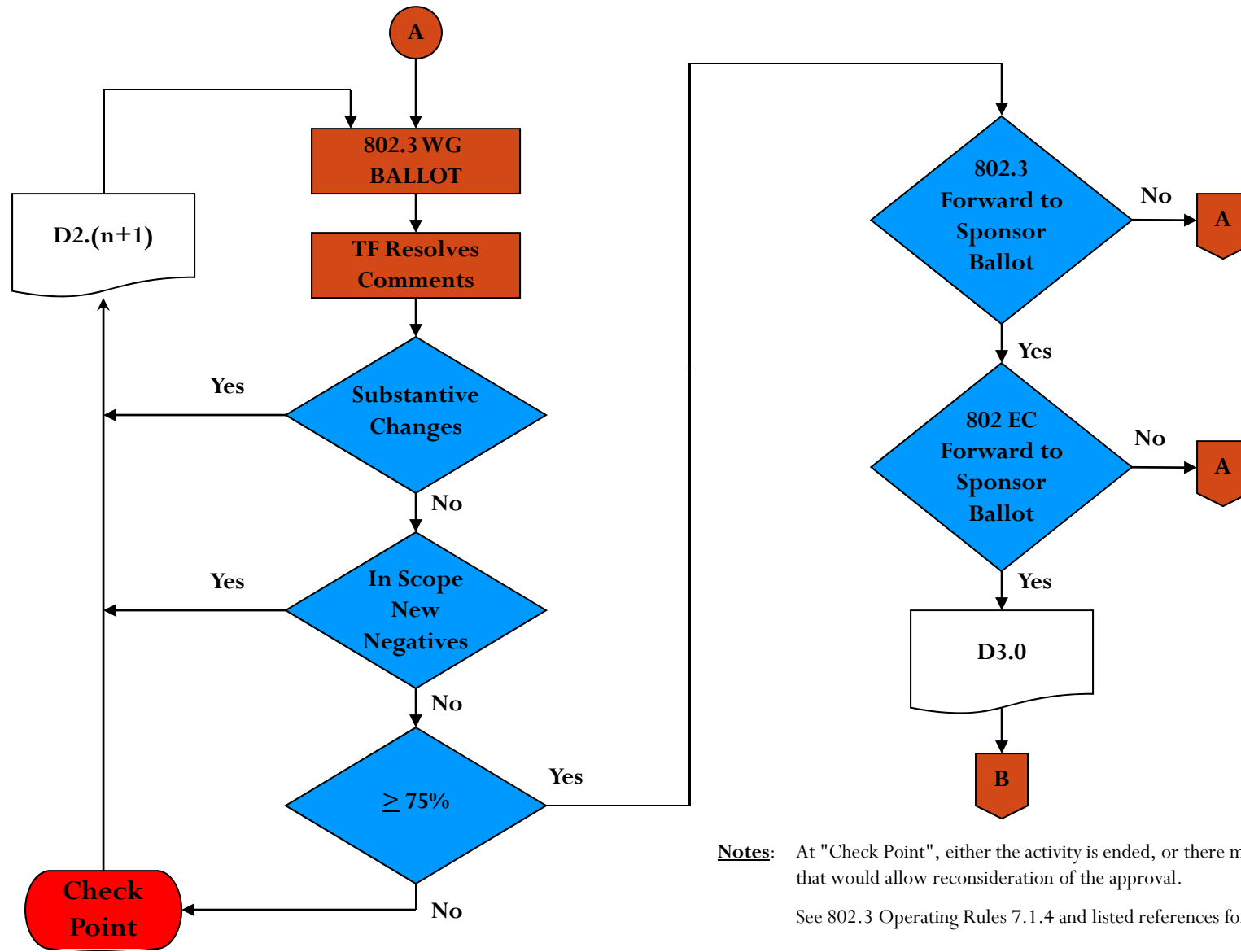
◈IEEE

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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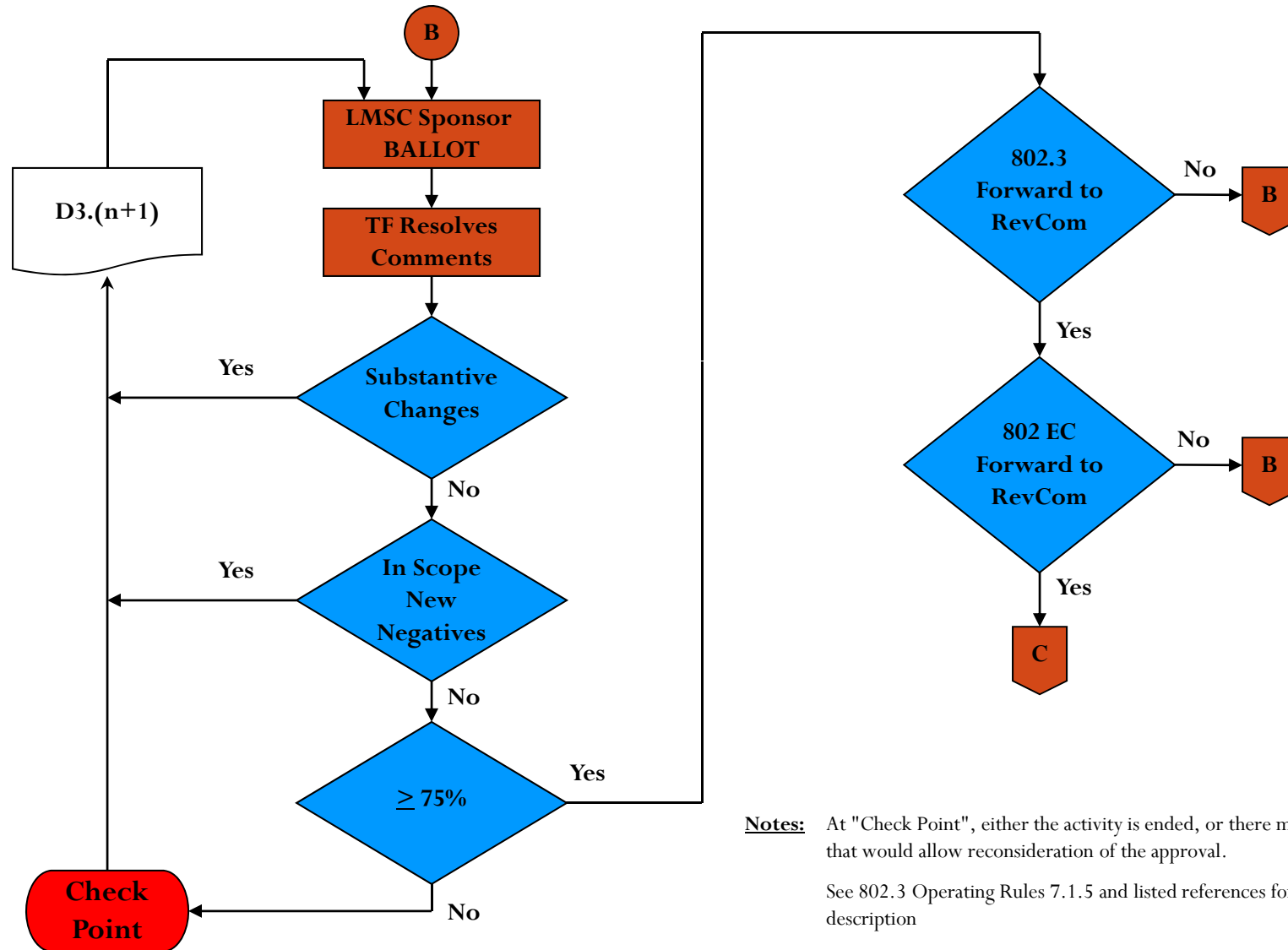Incline Village, NV, USA

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

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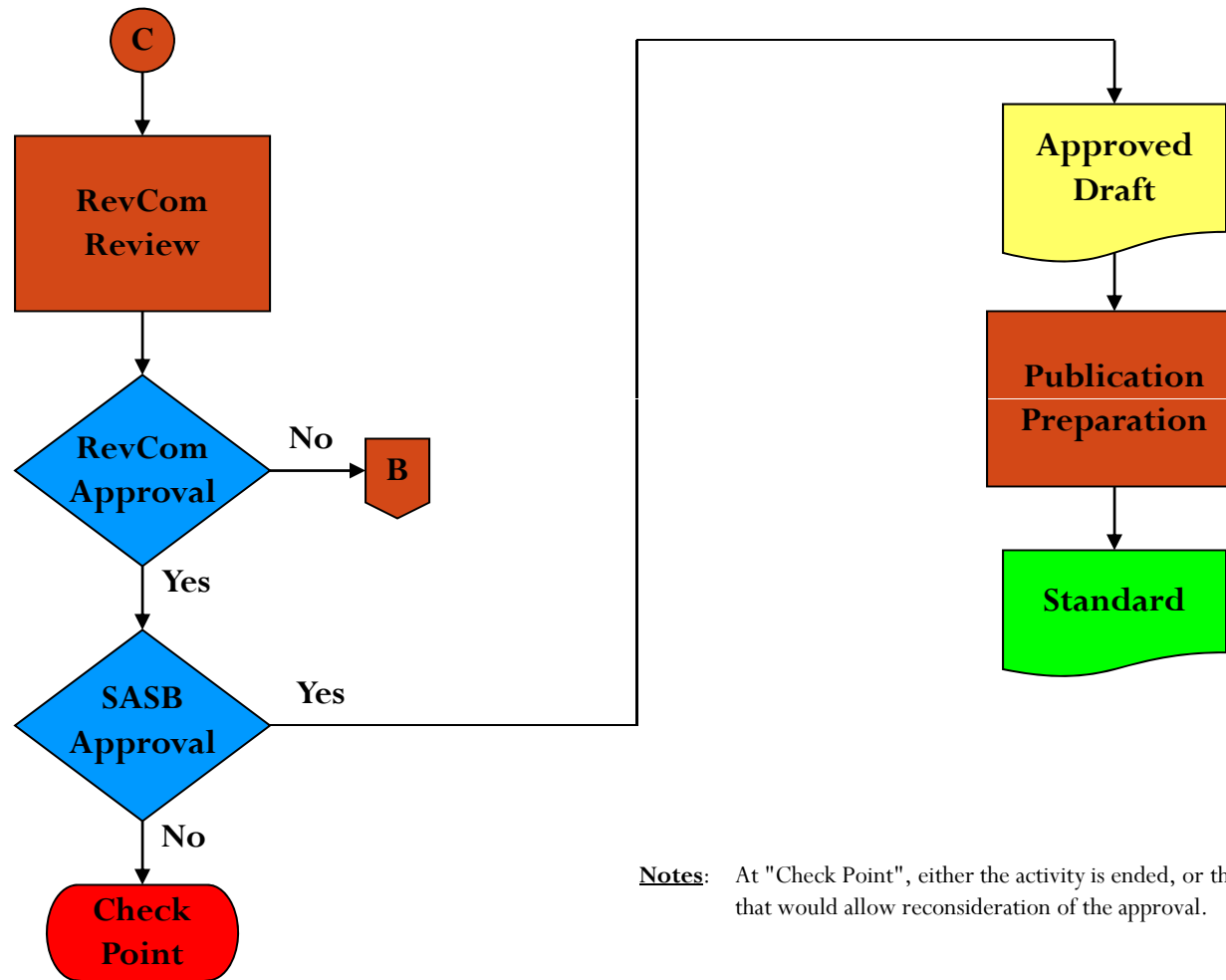
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Overview of IEEE 802.3 Standards Process (5/5) – Final Approvals / Standard Release

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

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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."

100Gb/s Backplane and Copper Cable Study Group

Project Documentation (Slide 1 of 2)

- Objectives
  - See http://www.ieee802.org/3/100GCU/objectives_0311.pdf

  - Adopted by Study Group (not approved by 802.3)
    - 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

  - Objective Forms Adopted by Study Group
    - Define a 4-lane 100 Gb/s PHY for operation over links consistent with copper traces on "**improved FR-4**" with lengths up to at least "**X**" m.
    - Define a 4-lane 100 Gb/s PHY for operation over links consistent with copper twin-axial cables with lengths up to at least "**Y**" m.
    - Support a BER of better than or equal to $10^{-\text{"}N\text{"}}$ at the MAC/PLS service interface
    - Notes - **N**, **X, Y,** and **Improved FR-4** require definition

Project Documentation (Slide 2 of 2)

- PAR
  - Title – What are we calling this?
  - Scope – The Focus
  - Purpose – Why do we want to do this?
  - Proposed Responses - http://www.ieee802.org/3/100GCU/public/may11/dambrosia_01_0511.pdf

- 5 Criteria
  - Broad Market Potential
  - Compatibility with IEEE Std. 802.3
  - Distinct Identity
  - Technical Feasibility
  - Economic Feasibility
  - Proposed Responses - http://www.ieee802.org/3/100GCU/public/may11/frazier_01_0511.pdf

Liaisons and Communications

- None

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Action Items

Volunteer	Action	Date Assigned	Status
Adam Healey	Create spreadsheet related to simulation details	Mar-15-11	
Megha Shanbhag	Provide channel data related to presentation shanbhag_01_0311.pdf	Mar-15-11	
Megha Shanbhag	Provide channel data related to presentation tracy_01_0311.pdf	Mar-15-11	
Will Bliss	Action item from January on latency has been withdrawn	Mar-16-11	closed

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

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Incline Village, NV, USA

Attendance

- URL (Valid for this meeting only)
  - http://seabass.ieee.org/imat
  - Password will be provided

- Tutorial Material on attendance tool
  - http://ieee802.org/3/minutes/mar11/0311_imat.pdf

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

IEEE 802 Interim, May 2011
Incline Village, NV, USA

Presentations (1 of 2)

Note –Times listed are subject to change.

Tues   24-May-11

Time	Presenter	Affiliation	Title	File Name
9:00 AM	John D'Ambrosia	Force10 Networks	Agenda and General Information	agenda_01_0311.pdf
9:30 AM	Mark Gustlin	Cisco	System Vendors View on 100 Gb/s Backplane and Copper Study Group Issues	gustlin_01_0511.pdf
9:50 AM	Joel Goergen	Cisco	Circuit Board Technology: An Introduction to Fabrication Issues in High Speed Channels	goergen_02_0311.pdf
10:30 AM	Break			
10:45 AM	Joel Goergen	Cisco	IEEE802.3ap Materials Review: Past Review and Future Recommendations	goergen_01_0511.pdf
11:25 AM	Vasu Parthasarathy	Broadcom	Scaling KR channel characteristics – Proposed channel targets for 100 Gb/s operation	parthasarathy_02_0511.pdf
11:55 AM	Lunch			
1:00 PM	Ziad Hatab	Vitesse	SNR Budget Analysis for 25 Gb/s over Backplane Channels	hatab_01_0511.pdf
1:30 PM	Mounir Meghelli	IBM	25Gb/s 100GbE Backplane Links	meghelli_01_0511.pdf
2:00 PM	Adee Ran	Intel	Time-domain SNR analysis or contributed channels	ran_01_0511.pdf
2:30 PM	Vasu Parthasarathy	Broadcom	Feasibility of 100 Gb/s operation on installed backplane channels	parthasarathy_01_0511.pdf
3:00 PM	Break			
3:15 PM	Mike Li	Altera	A Study of 25 Gbps Signaling Over Complied 10G-KR Channels	li_01_0511.pdf
3:45 PM	Mark Gustlin	Cisco	FEC Striping options	gustlin_02_0511.pdf
4:15 PM	Zhongfeng Wang	Broadcom	Feasibility of 100G-KR FEC	wang_01_0511.pdf
4:45 PM			Discussion & Straw Polls	
6:00 PM	Break for the Day			

Presentations (2 of 2)

Note –Times listed are subject to change.

Wed   25-May-11

Time	Presenter	Affiliation	Title	File Name
9:00 AM	John D'Ambrosia	Force10 Networks	Opening Comments	
9:05 AM	Charles Moore	Avago	Evaluation of Channels Submitted to Study Group	moore_01_0511.pdf
9:35 AM	Chris DiMinico	MC Communications	Media Reach Objectives for Twinaxial Cable Assemblies	diminico_01_0511.pdf
10:05 AM	Break			
10:25 AM	Mark Bugg	Molex	100Gbps Copper Cable Assemblies	bugg_01_0501.pdf
10:55 AM	Ali Ghiasi	Broadcom	100GbE Front Panel Ports Based on 4 Lanes	ghiasi_01_0511.pdf
11:25 AM	Howard Frazier	Broadcom	Proposed Responses to PAR Questions	dambrosia_01_0511.pdf
11:55 AM	Lunch			
1:15 PM	Howard Frazier	Broadcom	Proposed Responses 100Gb/s Backplane and Copper Cable 5 Criteria	frazier_01_0511.pdf
1:45 PM			Discussion / Straw Polls / Motions	
3:00 PM	Break			
3:20 PM			Discussion / Straw Polls / Motions / Action Items	
			Closing Business	
5:00 PM	Adjourn			

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Future Meetings (http://www.ieee802.org/3/interims/index.html)

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

- Sept 2011 Interim
  - Date: week of Sept 12, 2011
  - Location TBD

- Nov 2011 Plenary
  - Atlanta, GA, USA
  - Week of Nov 6
  - Hyatt Regency Atlanta

- Anyone interested in hosting a meeting contact me.

Thank You!

100Gb/s Backplane and Copper Cable Study Group