Agenda and General Information

IEEE P802.3bj 100 Gb/s Backplane and Copper Cable Task Force

John D'Ambrosia, Dell
Big Island, Hawaii, USA

Plenary: March 13 - 15, 2012

Agenda (Plenary)

- Welcome and Introductions
- Approve Agenda
- Approval of the Jan 12 Minutes
- Goals for this meeting
- Reflector and Web
- Ground Rules
- IEEE
    - Structure
    - Bylaws and Rules
    - Call for Patents
    - IEEE Standards Process
- Review of Action Items
- Liaisons and Communications
- Presentations
- Motions and Closing Business
- Future Meetings

Task Force Decorum

- Photography or recording by permission only (2010 SASB Op Manual 5.3.3.4)
- Cell phone ringers off
- Press (i.e., anyone reporting publicly on this meeting) are to announce their presence (5.3.3.5)
- 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

Goals for the meeting week

- Hear Technical Presentations
- Make Baseline Proposal Decisions!

- Lay the ground work for Draft 1.0 and 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
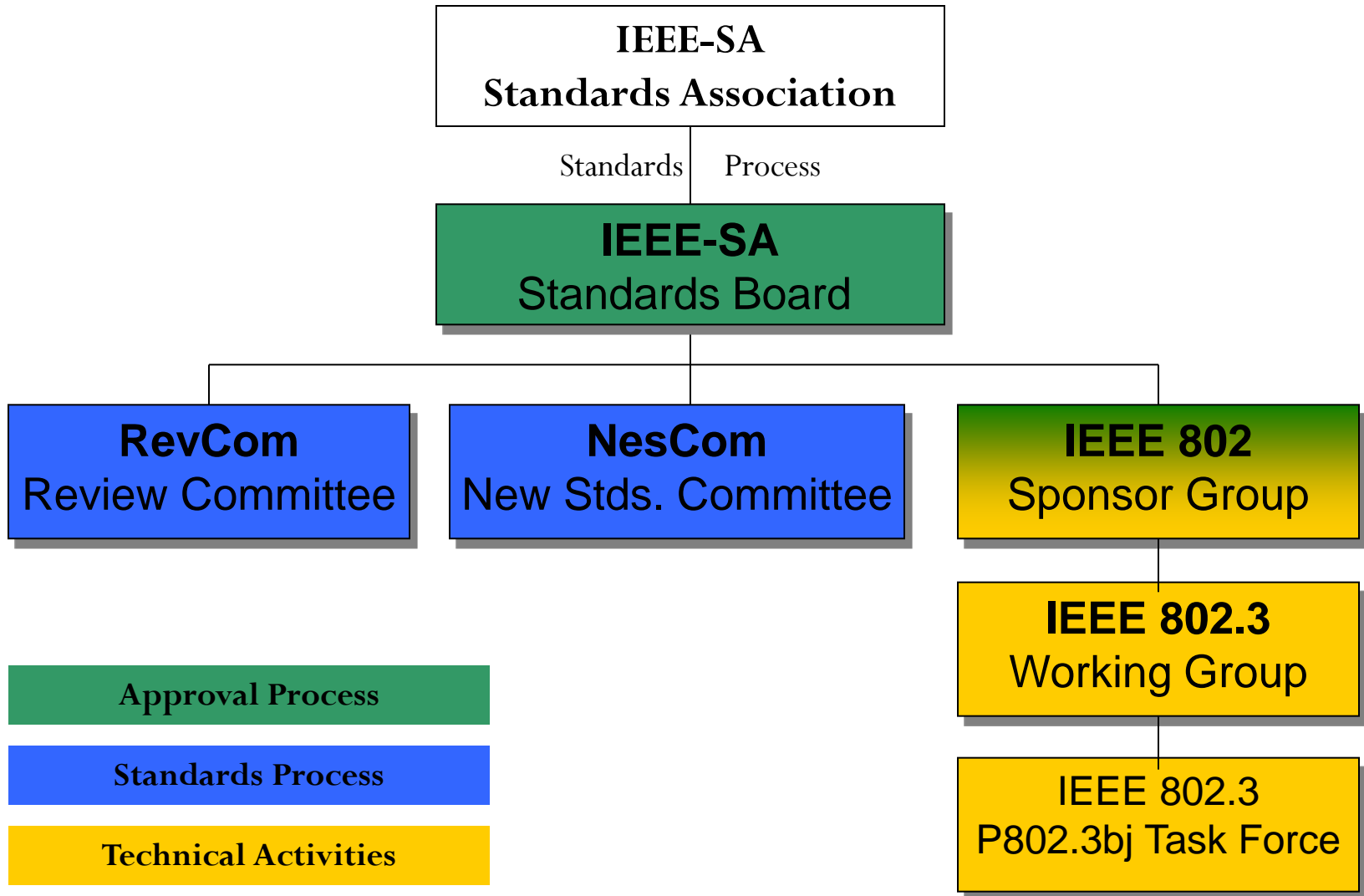
- Study Group web page URL:

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

Task Force Private Area

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

- Write it down…

- Note - The draft, and any other content, is posted for your review only, and neither the content 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

```
                    ┌─────────────────────────┐
                    │         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 P802.3bj Task Force

Approval Process

Standards Process

Technical Activities

Important 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/about/sasb/audcom/pnp/LMSC.pdf

- **IEEE 802 LAN/MAN Standards Committee (LMSC) Operations Manual**
  http://www.ieee802.org/PNP/2010-07/IEEE_802_LMSC_OM_approved_100716.pdf

- **IEEE 802 LAN/MAN Standards Committee (LMSC) Working Group (WG) Policies and Procedures**
  http://www.ieee802.org/PNP/2010-07/IEEE_802_LMSC_WG_PandP_approved_100716.pdf

- **IEEE 802.3 Working Group Operating Rules**
  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:**
  - The IEEE's patent policy is consistent with the ANSI patent policy and 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 the IEEE is not aware. Additionally, neither the 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 12 and 12a 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.

25 March 2008 (updated 29 March 2011)

IEEE

(Optional to be shown)

Participants, Patents, and Duty to Inform

All participants in this meeting have certain obligations under the IEEE-SA Patent Policy.

- **Participants [Note: Quoted text excerpted from IEEE-SA Standards Board Bylaws subclause 6.2]:**
  - **"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**
    - **"Personal awareness" means that the participant "is personally aware that the holder may have a potential Essential Patent Claim," even if the participant is not personally aware of the specific patents or patent claims**
  - **"Should inform the IEEE (or cause the IEEE to be informed)" of the identity of "any other holders of such potential Essential Patent Claims" (that is, third parties that are not affiliated with the participant, with the participant's employer, or with anyone else that the participant is from or otherwise represents)**
- **The above does not apply if the patent claim is already the subject of an Accepted Letter of Assurance that applies to the proposed standard(s) under consideration by this group**
- **Early identification of holders of potential Essential Patent Claims is strongly encouraged**
- **No duty to perform a patent search**

25 March 2008 (updated 29 March 2011)

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Patent Related Links

All participants should be familiar with their obligations under the IEEE-SA Policies & Procedures for standards development.

Patent Policy is stated in these sources:

IEEE-SA Standards Boards 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 or visit http://standards.ieee.org/about/sasb/patcom/index.html

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

IEEE

25 March 2008 (updated 29 March 2011)
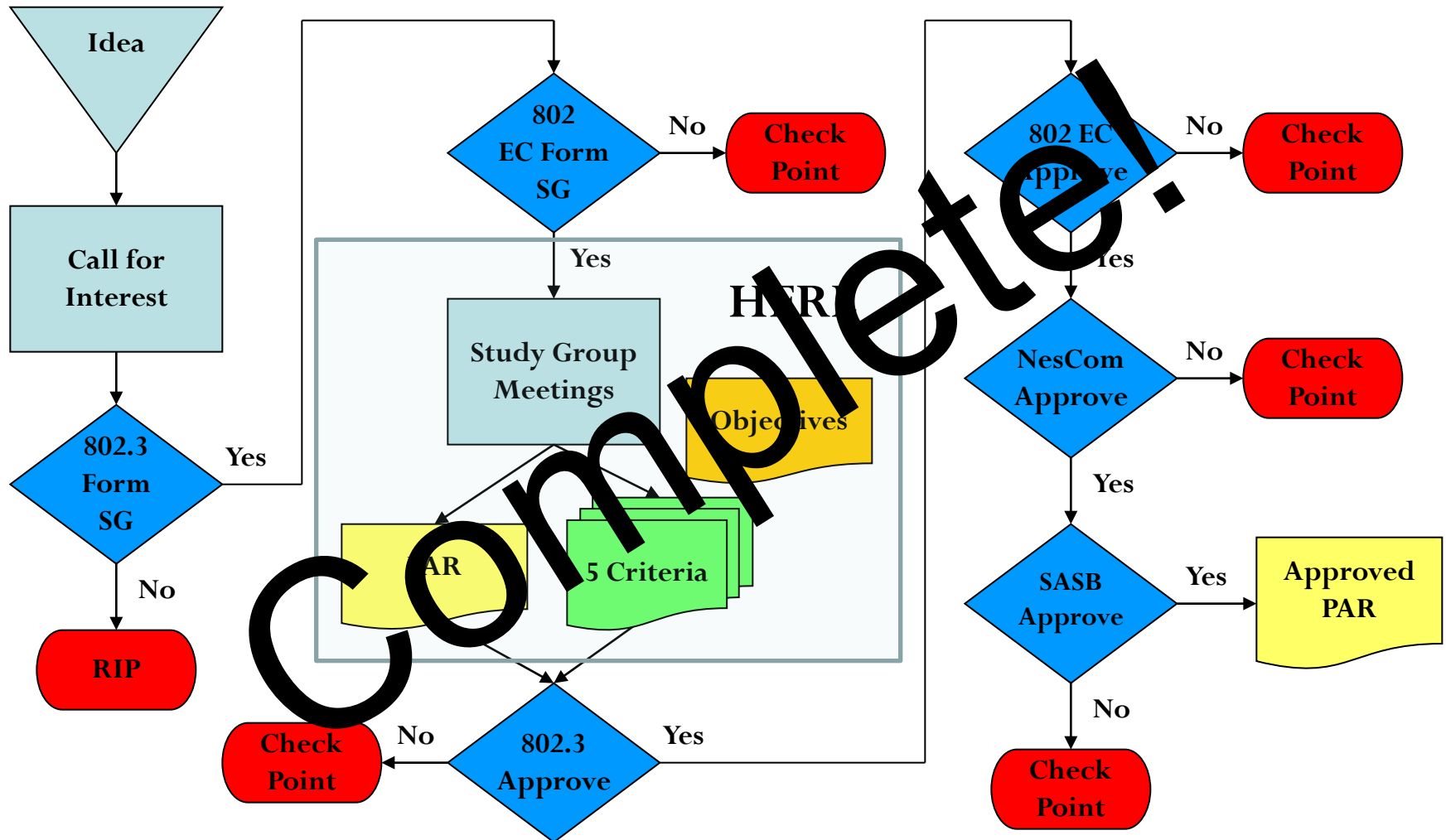
Call for Potentially Essential Patents

- 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:

  - Either speak up now 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
  - Cause an LOA to be submitted

◆IEEE

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, 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.**

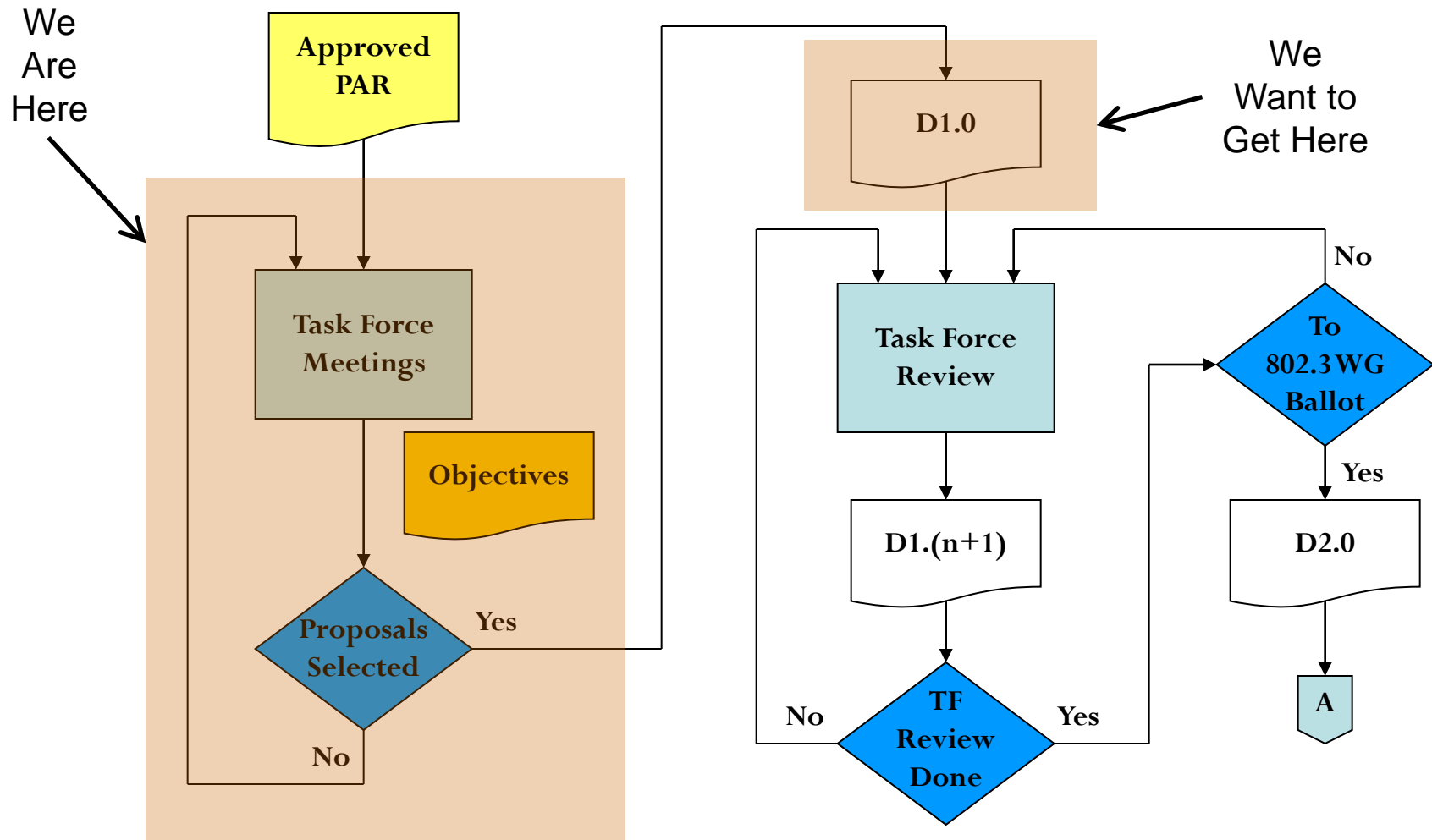---

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.

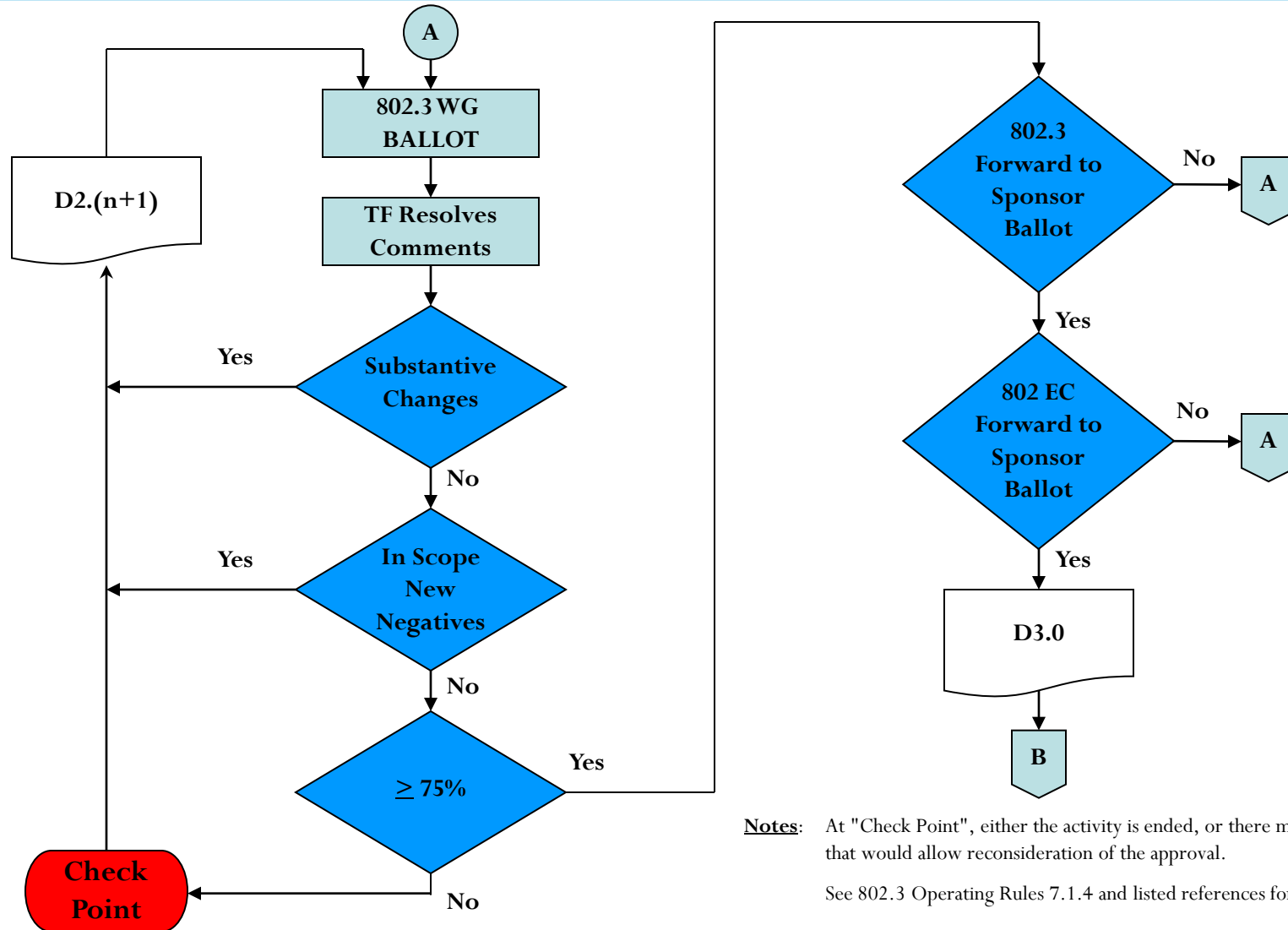**25 March 2008 (updated 29 March 2011)**

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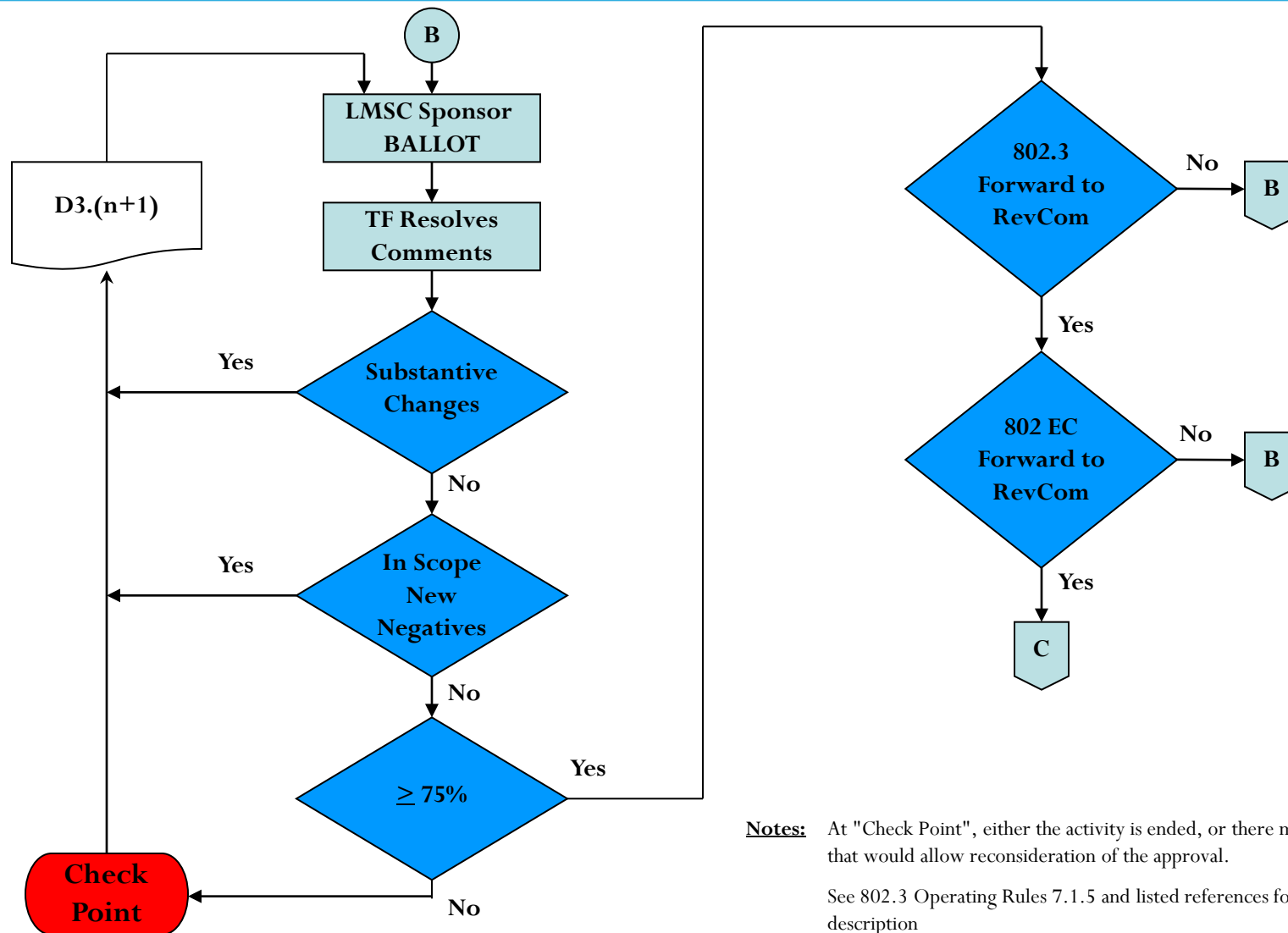
Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase

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 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.

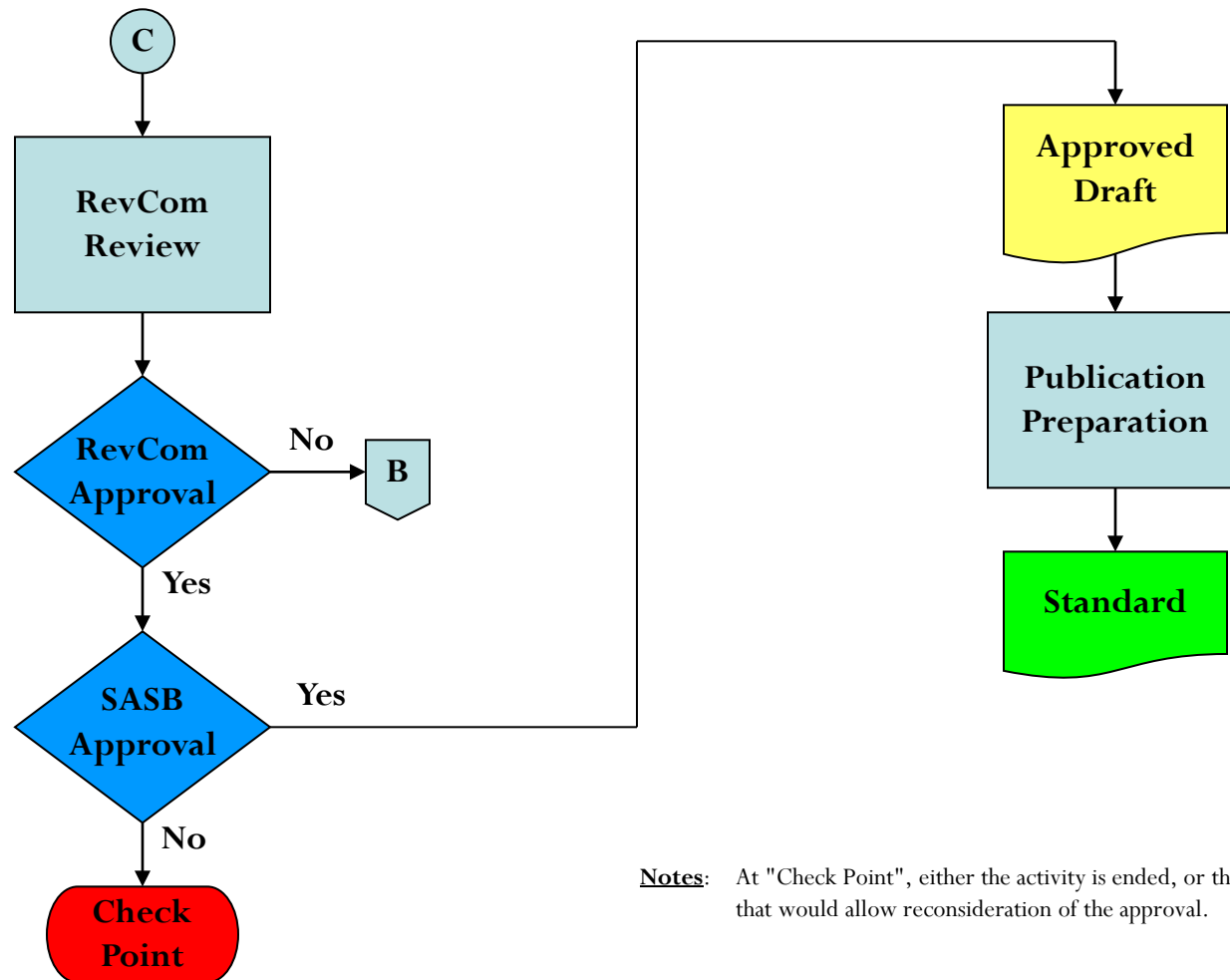See 802.3 Operating Rules 7.1.5 and listed references for complete description

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

Liaisons and Communications

- None

IEEE P802.3bj 100 Gb/s Backplane and Copper Cable Task Force Project Documents

- ## PAR

  - http://www.ieee802.org/3/100GCU/par_a_0511.pdf

- ## 5 Criteria

  - http://www.ieee802.org/3/100GCU/5C_0511.pdf

- ## Objectives

  - http://www.ieee802.org/3/100GCU/objectives_0711.pdf

- ## Adopted Timeline

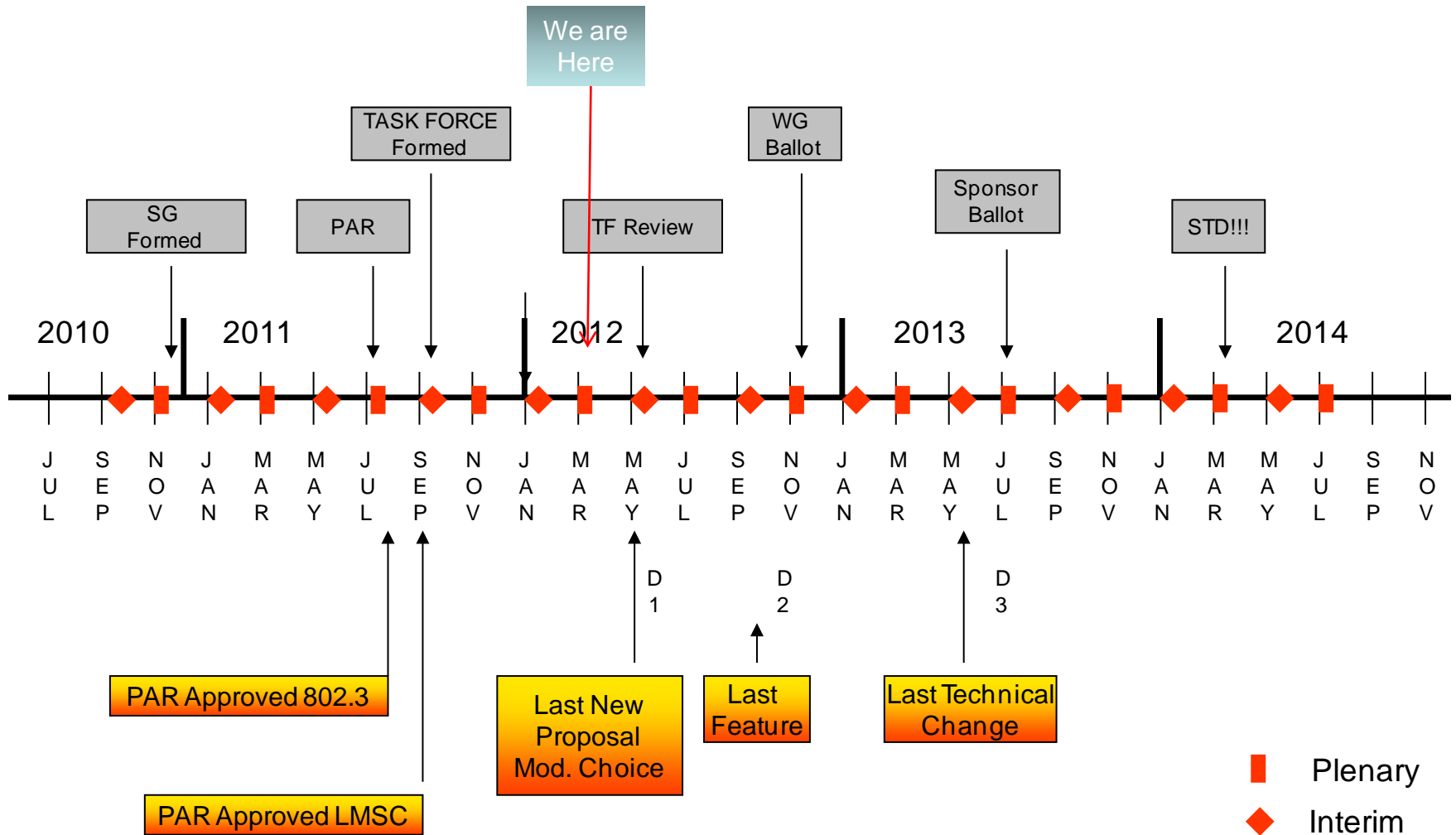 - http://www.ieee802.org/3/bj/timeline_0911.pdf

IEEE P802.3bj Task Force 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 of better than or equal to 10^{-12} at the MAC/PLS service interface

- Define a 4-lane 100 Gb/s backplane PHY for operation over links consistent with copper traces on "improved FR-4" (as defined by IEEE P802.3ap or better materials to be defined by the Task Force) with lengths up to at least 1m.

- Define a 4-lane 100 Gb/s PHY for operation over links consistent with copper twin-axial cables with lengths up to at least 5m.

- To define optional Energy-Efficient Ethernet operation for 100G Backplane and Twinaxial cable PHYs specified in P802.3bj*

Objectives approved by IEEE 802.3 WG July 2011 IEEE 802 Plenary
*Objective approved by IEEE 802.3 WG Nov 2011 IEEE 802 Plenary

Adopted Timeline

We are Here

TASK FORCE Formed

WG Ballot

SG Formed

PAR

TF Review

Sponsor Ballot

STD!!!

2010   2011   2012   2013   2014

JUL SEP NOV JAN MAR MAY JUL SEP NOV JAN MAR MAY JUL SEP NOV JAN MAR MAY JUL SEP NOV JAN MAR MAY JUL SEP NOV

D1   D2   D3

PAR Approved 802.3

PAR Approved LMSC

Last New Proposal Mod. Choice

Last Feature

Last Technical Change

Plenary

Interim

Meeting Map

	Mon	Tues	Wed	Thur
8:00				
8:30				
9:00	Next Gen 100G Optics (Common Time with P802.3bj TF)	All	All	All
9:30				
10:00				
10:30				
11:00				
11:30				
12:00	Lunch	Lunch	Lunch	Lunch
12:30				
13:00	IEEE 802.3WG Opening Plenary	All	All	IEEE 802.3WG Closing Plenary
13:30				
14:00				
14:30				
15:00				
15:30				
16:00				
16:30				
17:00				
17:30		Break	Break	
18:00	Break			
18:30			Social	
19:00	Call-For-Interest #1	Call-For-Interest #3		
19:30				
20:00				
20:30	Call-For-Interest #2	Call-For-Interest #4		
21:00				
21:30				

Presentations (Plenary - Tues)

Time	Presenter	Affiliation	Title	File Name
9:00 AM	John D'Ambrosia	Dell	Agenda and General Information	agenda_01_0312.pdf
9:45 AM	Pravin Patel	IBM	Two Backplane Markets, Two Backplane Channels, Two Signaling Schemes, Two PHYs	patel_01_0312.pdf
10:15 AM			Break	
10:30 AM	Mike Dudek	Qlogic	Baseline Proposal for 100G Backplane Specification using PAM2	dudek_01_0312.pdf
11:00 AM	Matt Brown	Applied Micro	100G backplane PAM4 PHY encoding (revised)	brown_01_0312.pdf
11:30 AM	Charles Moore	Avago	Specifying receiver and transmitter for 100GCu	moore_02_0312.pdf
12:00 PM			Lunch	
1:30 PM	Arthur Marris	Cadence	Baseline Proposal for 802.3bj Auto-Negotiation	marris_01_0312.pdf
2:00 PM	Mark Gustlin	Xilinx	Backplane NRZ FEC baseline	gustlin_01_0312.pdf
2:30 PM	Roy Cideciyan	IBM	256b/257b Transcoding for 100 Gb/s Backplane and Copper Cable	cideciyan_01_0312.pdf
3:00 PM			Break	
3:20 PM	Mike Dudek	Qlogic	Use of FEC in PAM2 backplane and copper	dudek_02_0312.pdf
3:50 PM	Mounir Meghelli	IBM	Mandatory or Optional FEC for the NRZ PHY?	meghelli_01_0312.pdf
4:20 PM	Hugh Barrass	Cisco	Detailed baseline for EEE in 100G	barrass_01_0312.pdf
4:50 PM			Discussion & Straw Polls	
5:30 PM			Break for Day	

Note –Times listed are subject to change.

Presentations (Plenary- Wed)

Time	Presenter	Affiliation	Title	File Name
9:00 AM	John D'Ambrosia	Dell	Day's Opening Comments	agenda_01_0312.pdf
9:10 AM	Elizabeth Kochuparambil	Cisco	Update of DkDf Algebraic Model	kochuparambil_01_0312.pdf
9:40 AM	Pavel Zivny	Tektronix	Backplane Test Points and Fixtures	zivny_01_0312.pdf
10:10 AM			Break	
10:30 AM	Joel Goergen	Cisco	Defining Test Points in a Copper Back Plane / Mid Plane Implementation	goergen_01_0312.pdf
11:00 AM	Ryan Latchman	Mindspeed	Host Channel Loss Budget	latchman_01_0312.pdf
11:30 AM	Chris Cole	Finisar	PAM-N Tutorial Material	cole_01_0312.pdf
12:00 PM			Lunch	
1:15 PM	Charles Moore	Avago	Improvements to the dibit gain--SN method presented in moore_01_0311	moore_01_0312.pdf
1:45 PM	Ali Ghiasi	Broadcom	Use of Advance Scope for Measurement of TP2/TP4 and	ghiasi_01_0312.pdf
2:15 PM	Mike Li	Altera	A Time/Frequency Domain Channel Specification Method	li_01_0312.pdf
2:45 PM	Chris DiMinico	MC Communications /	IEEE 802.3bj: 100GBASE-CR4 Test Points and Parameters	diminico_01_0312.pdf
3:15 PM			Break	
3:35 PM	Mark Bugg	Molex	100 Gbps Copper Cable Channels	bugg_01_0312.pdf
4:05 PM	Nathan Tracy	TE Connectivity	802.3bj MDI Baseline Proposal	tracy_01_0312.pdf
4:35 PM			Discussion & Strawpolls	
5:30 PM			Break for Day	

Note –Times listed are subject to change.

Presentations (Plenary - Thurs)

Time	Presenter	Affiliation	Title	File Name
9:00 AM	John D'Ambrosia	Dell	Day's Opening Comments	agenda_01_0312.pdf
9:10 AM			Discussion, Strawpolls, & Motions	
10:15 AM			Break	
10:35 AM			Discussion, Strawpolls, & Motions	
11:50 AM			Closing Business	
12:00 PM			Adjourn	

Note –Times listed are subject to change.

Future Meetings

- See: http://www.ieee802.org/3/interims/index.html

- May 2012 Interim (Hosted by Cisco)
  - Date: Week of May 14
  - Location: Hilton Minneapolis, Minneapolis, MN
- July 2012 Plenary
  - Date: Week of July 16
  - Location: Grand Hyatt Manchester, San Diego, CA, USA
- Sept 2012 Interim (Hosted by ITU)
  - Date: Week of Sept 24
  - Location: Geneva, CH
- Nov 2012 Plenary
  - Date: Week of Nov 12
  - Location, Grand Hyatt, San Antonio, San Antonio, TX, USA

- Anyone interested in hosting a meeting contact me.

Thank You!