



Agenda and General Information

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

John D'Ambrosia

Dell

Atlanta, GA, USA,

Interim: Nov 7, 2011

Plenary: Nov 8 – Nov 10, 2011

Agenda (Interim)

- Welcome and Introductions
- Approve Agenda
- Approve Sept 2011 Minutes
- Goals for this meeting
- Reflector and Web
- Ground Rules
- IEEE
 - Structure
 - Bylaws and Rules
 - Call for Patents
 - IEEE Standards Process
- Liaisons and Communications
- Presentations

Agenda (Plenary)

- Welcome and Introductions
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- Goals for this meeting
- Reflector and Web
- Ground Rules
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 - 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
- Liaison Response & Informal Communications
- 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/bj/index.html>

Task Force Private Area

- URL: <http://www.ieee802.org/3/bj/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.

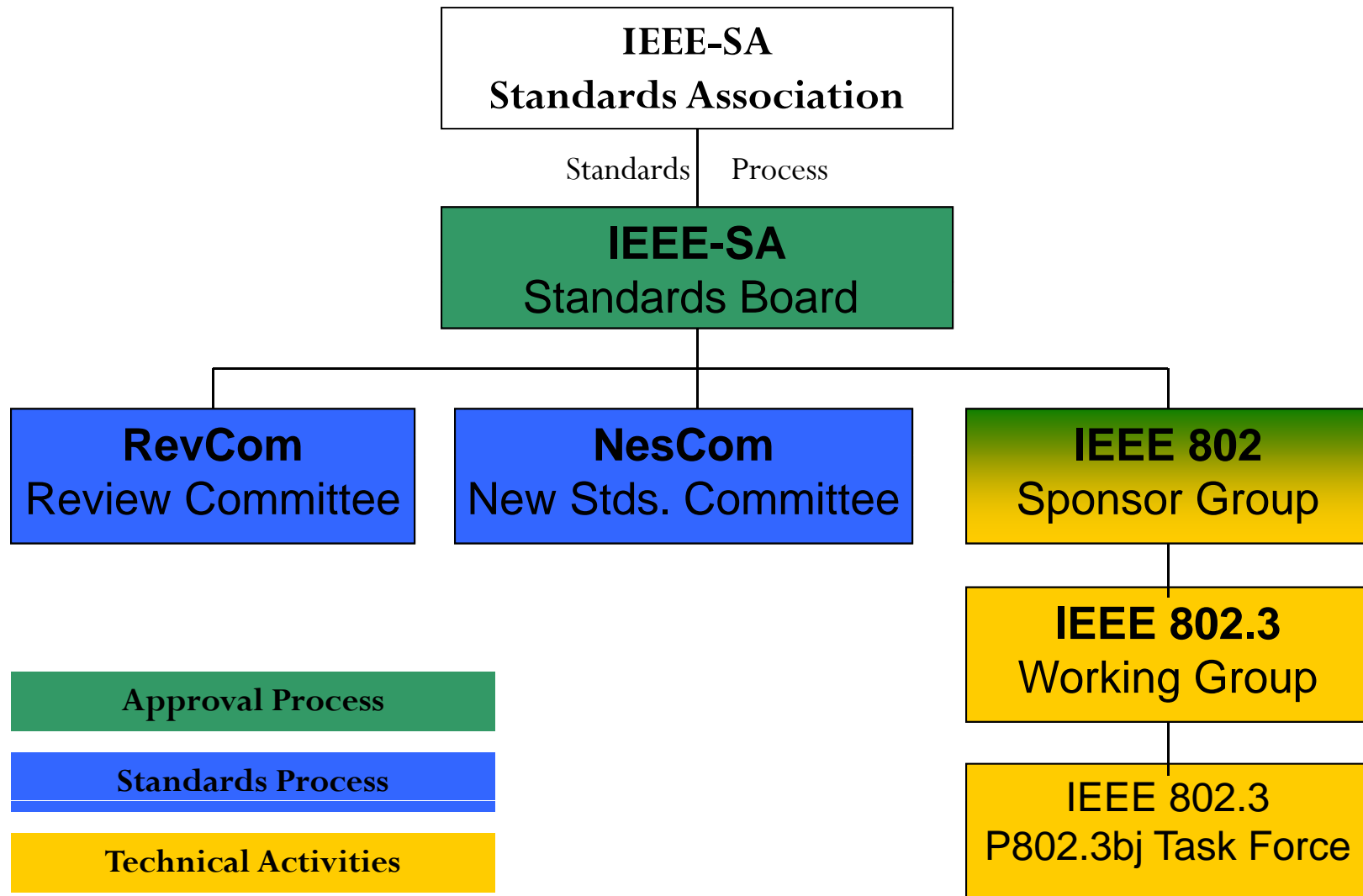
Ground Rules

- 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

Attendance

- Tutorial Material on attendance tool
 - http://ieee802.org/3/minutes/jul11/0711_imat.pdf
- URL (Valid for this meeting only)
 - <http://murphy.events.ieee.org/imat/> or
 - <http://seabass.ieee.org/imat/index>
 - There is no session access code
- The server cannot be reached from outside of the local network
 - You MUST disconnect your VPN software

IEEE Structure



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)

(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

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>

Call for Potentially Essential Patents

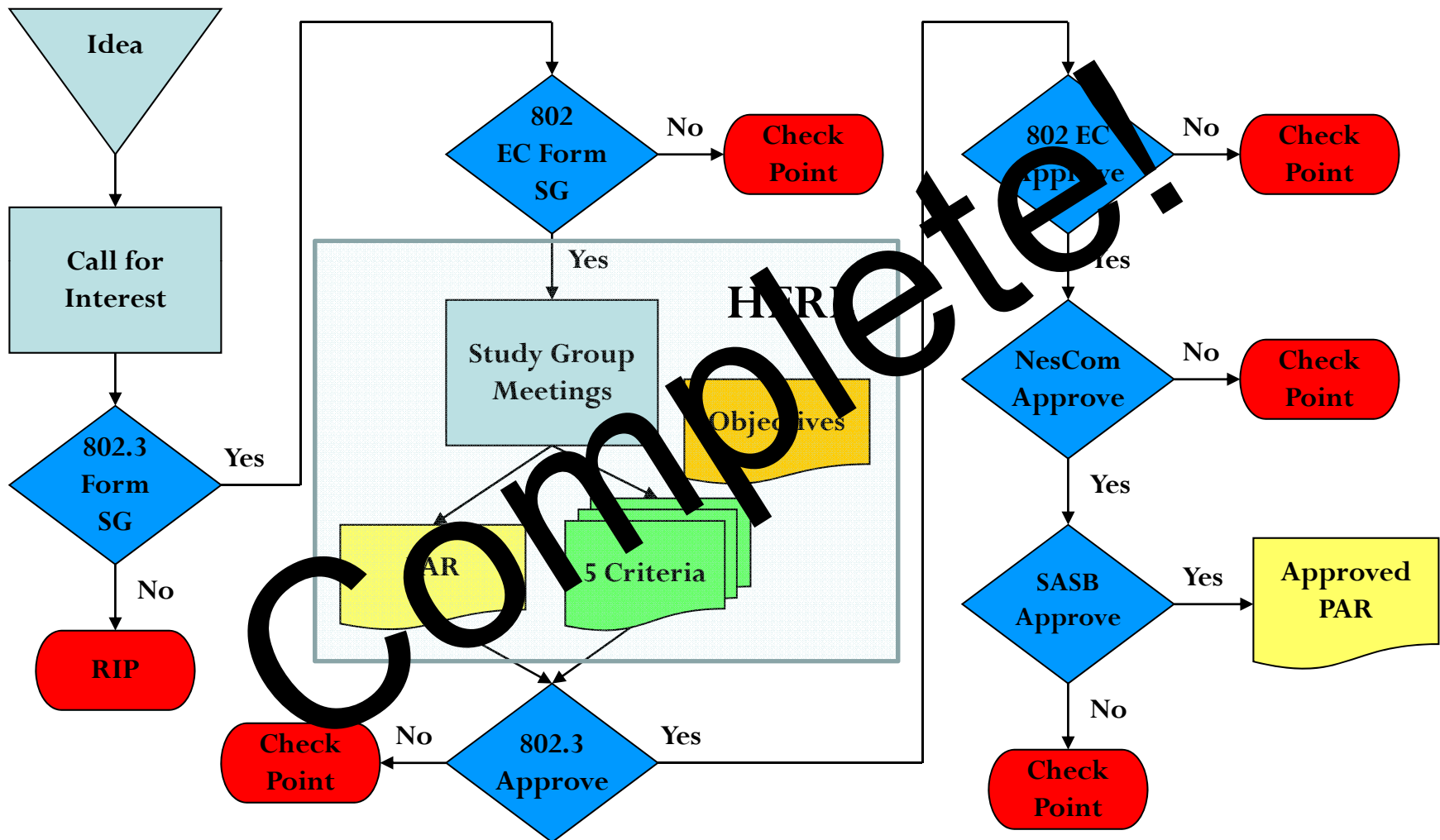
- If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance:
 - Either speak up now or
 - Provide 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

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.**

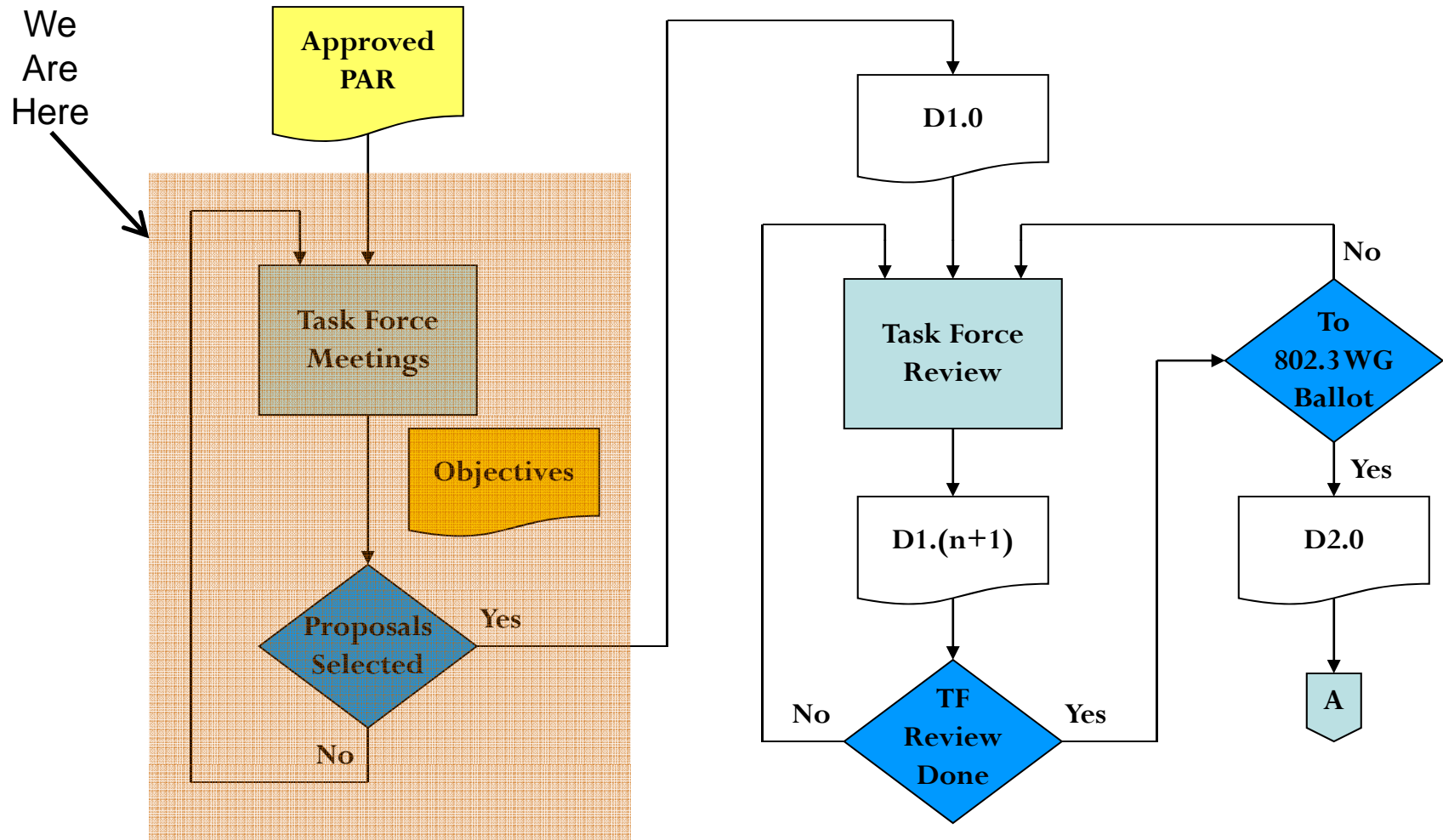
See *IEEE-SA Standards Board Operations Manual*, clause 5.3.10 and “Promoting Competition and Innovation: What You Need to Know about the IEEE Standards Association's Antitrust and Competition Policy” for more details.

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

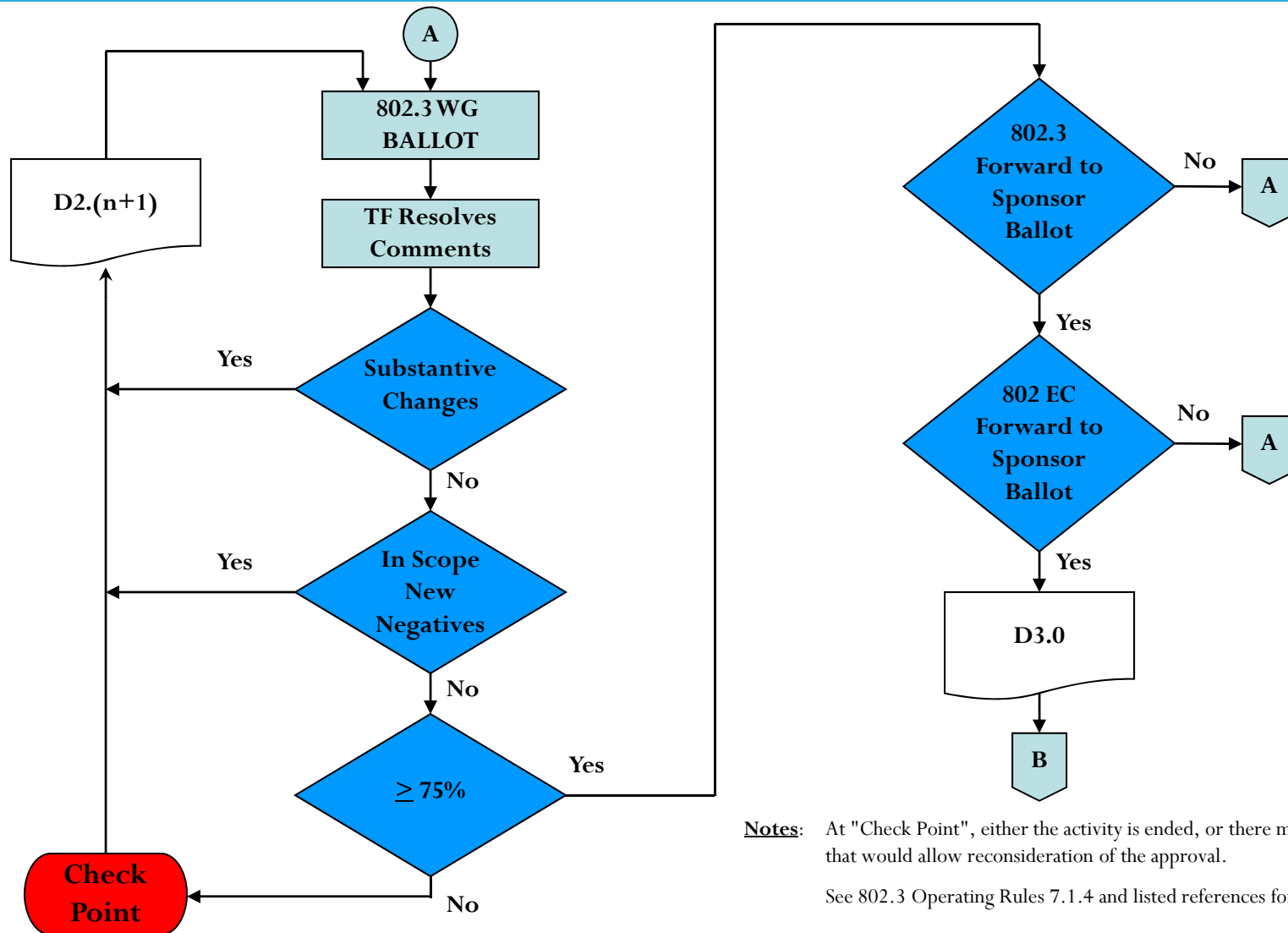


Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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



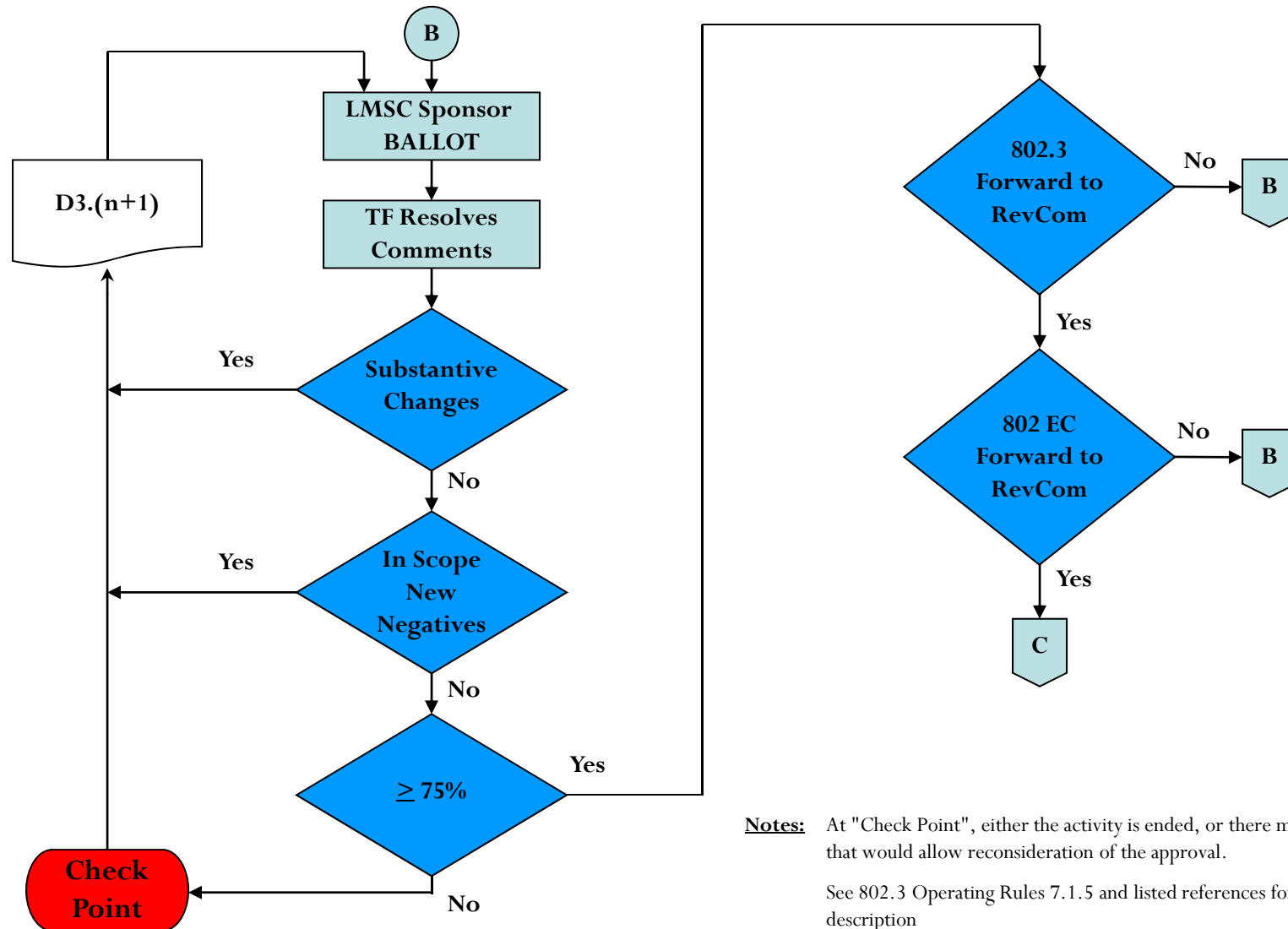
Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase



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 Operating Rules 7.1.4 and listed references for complete description

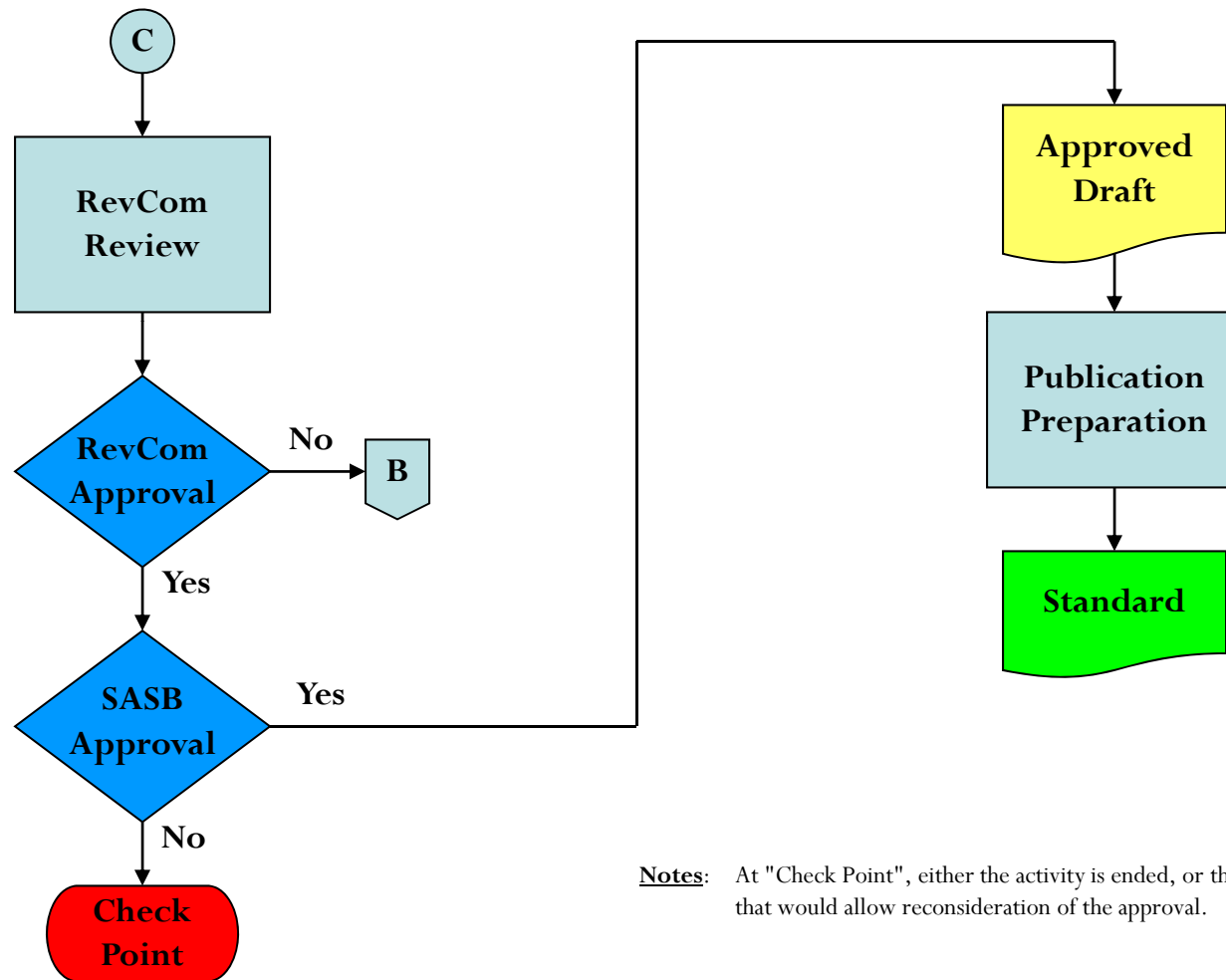
Overview of IEEE 802.3 Standards Process (4/5)- Sponsor Ballot Phase



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



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

- Interim
 - OIF Liaison: MLG
 - http://www.ieee802.org/3/minutes/nov11/incoming/OIF_IEEE_liaison_27_Oct11.pdf
- Plenary
 - Proposed Informal Communication to PICMG
 - http://www.ieee802.org/3/bj/public/nov11/lusted_03_1111.pdf

Action Items

Volunteer	Action	Date Assigned	Status
Adam Healey	Update spreadsheet to add name & affiliation, FEC parameters, and simulation tool used. Also update example reference.	9/13/2011	
Joel Goergen	Provide loss calculator spreadsheet to group	9/13/2011	
Ed Sayre	Provide channel data for legacy backplanes with updated line cards.	9/14/2011	
Ali Ghiasi	Ali to send update presentation correcting proposed HCB trace loss (page 3)	9/14/2011	
Joel Goergen	Provide relative cost analysis of board technologies/materials based on Goergen_02_0911.pdf	9/14/2011	
Joel Goergen	Provide topology definition/relative frequencies of interest spreadsheet	9/14/2011	
Joel Goergen	Provide update of surface roughness calculation in Goergen_02_0911	9/14/2011	
Chris Cole	Present CFP4 MSA update to 802.3bj at November meeting. (Note 1)	9/14/2011	

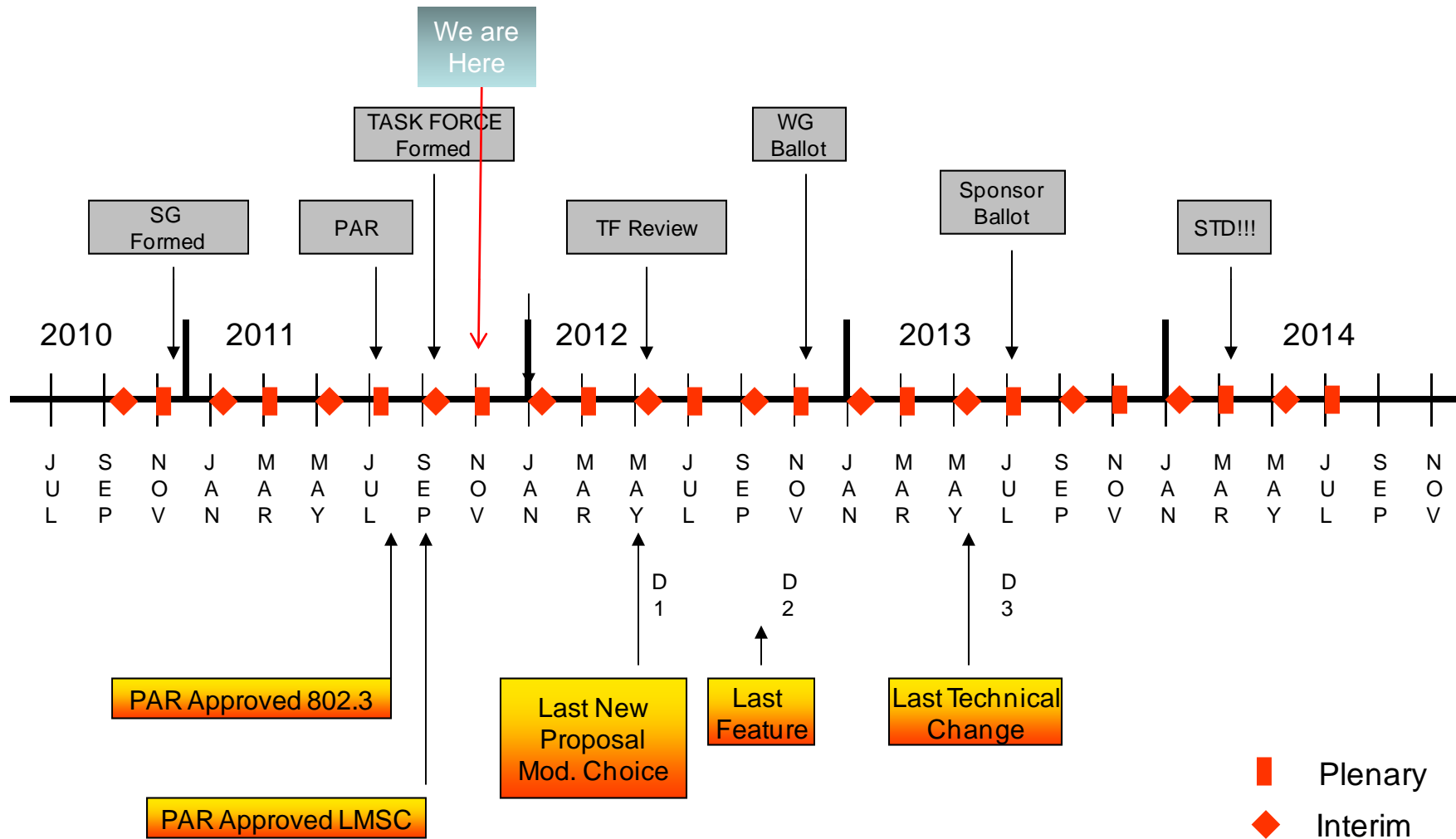
IEEE P802.3bj 100 Gb/s Backplane and Copper Cable Task Force Project Documents

- PAR
 - http://www.ieee802.org/3/bj/PAR_approved_0911.pdf
- 5 Criteria
 - http://www.ieee802.org/3/bj/5C_0911.pdf
- Objectives
 - http://www.ieee802.org/3/bj/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.

Adopted Timeline



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

Meeting Map

	Mon	Tues	Wed	Thur	Fri
8:00	P802.3bj & Next Gen 100G Optics	All	All	All	
8:30					
9:00					
9:30					
10:00					
10:30					
11:00					
11:30					
12:00	Lunch	Lunch	Lunch	Lunch	
12:30	IEEE 802.3WG Opening Plenary	All	All	IEEE 802.3WG Closing Plenary	
13:00					
13:30					
14:00					
14:30					
15:00					
15:30					
16:00					
16:30					
17:00					
17:30					
18:00		Break	Break		
18:30					
19:00					
19:30					
20:00		Call For Interest	Social		
20:30					
21:00					
21:30					

Presentations (Interim - Mon)

Time	Presenter	Affiliation	Title	File Name
8:00 AM	John D'Ambrosia	Dell	Agenda and General Information	agenda_01_1111.pdf
8:30 AM	Steve Trowbridge	Alcatel-Lucent	OIF Liaison	
8:40 AM	Gary Nicholl	Cisco	System OEM design guidelines for chip to module	nicholl_01_1111.pdf
9:10 AM	Mark Gustin	Cisco	FEC architectural considerations	gustlin_01_1111.pdf
9:35 AM	Adam Healey	LSI	Channel Specifications Discussions	dambrosia_01_1111.pdf
10:00 AM			Break	
10:20 AM	Ali Ghiasi	Broadcom	100GBASE-CR4 Compliance Board and MDI Definition	ghiasi_01_1111.pdf
10:45 AM	Nathan Tracy	TE Connectivity	MDI for 4x25G Copper and Fiber Optic I/O	tracy_01_1111.pdf
11:05 AM	Mike Dudek	Qlogic	Marrying Copper and Optical.	dudek_01_1111.pdf
11:30 AM	Tom Palkert	Molex	Active Optical cable	palkert_01_1111.pdf
11:55 AM			Discussion	
12:00 PM			Adjourn	

Note –Times listed are subject to change.

Presentations (Plenary - Tues)

Time	Presenter	Affiliation	Title	File Name
9:00 AM	John D'Ambrosia	Dell	Agenda and General Information	agenda_01_1111.pdf
9:45 AM	Kent Lusted	Intel	Informal Communication: PICMG	lusted_03_1111.pdf
9:55 AM			Break	
10:15 AM	Kent Lusted	Intel	The Case for Legacy Channels	lusted_01_1111.pdf
10:45 AM	Kent Lusted	Intel	Intro to PICMG	lusted_02_1111.pdf
11:15 AM	Vasu Parthasarathy	Broadcom	Channel Characteristics at 12.5 GHz	parthasarathy_01_1111.pdf
12:00 PM			Lunch	
1:30 PM	Scott Kipp	Brocade	PAM-2 Broad Market Potential	kipp_01_1111.pdf
2:00 PM	John D'Ambrosia	Dell	Blade Servers & The Relative Cost Impact of Materials	dambrosia_02_1111.pdf
2:20 PM	Dr. Karl Minten	Gold Circuit Electronics	PCB Technology Future Trend	minten_01_1111.pdf
2:50 PM	Ted Tanabe	Hitachi-Chemical	Low Transmission Loss Multi-layer Material for High speed & High Frequency Application	tanabe_01_1111.pdf
3:20 PM			Break	
3:40 PM	Chris DiMinico	MC Communications	IEEE 802.3bj Twinaxial Cu cable assembly objective	diminico_01_1111.pdf
4:10 PM	Mark Gustlin	Cisco	EEE Support for 100 Gb/s	gustlin_02_1111.pdf
4:40 PM	Sanjay Kasturia	PLX/ Inphi	A PAM-2 based solution for legacy backplane channels	kasturia_01_1111.pdf
5:10 PM			Pending Time Availability - Discussions & Straw Polls	
5:30 PM			Break	

Note –Times listed are subject to change.

Presentations (Plenary- Wed)

Time	Presenter	Affiliation	Title	File Name
9:00 AM	John D'Ambrosia	Dell	Opening Comments	
9:10 AM	Charles Moore	Avago	Evaluation of various channels	moore_02_1111.pdf
9:40 AM	Walter Katz	SiSoft	Analysis of 30dB Channel Using IBIS-AMI Models	katz_01_1111.pdf
10:10 AM			Break	
10:30 AM	Vittal Balasubramanian	FCI	Feasibility of PAM-2 on a 1 Meter Backplane Channel	balasubramanian_01_1111.pdf
11:00 AM	Troy Beukema	IBM	Line Signaling Performance Comparison on 1m Improved FR4 Channel	beukema_01_1111.pdf
11:30 AM	Charles Moore	Avago	S/N comparison for NRZ and PAM4	moore_01_1111.pdf
12:00 PM			Lunch	
1:30 PM	William Bliss	Broadcom	Sensitivity to Timing Error Jitter for NRZ and PAM-4	bliss_01_1111.pdf
2:00 PM	Dariush Dabiri	APM	Performance Analysis of PAM4 Receivers over Long Backplane Channels	dabiri_01_1111.pdf
2:30 PM	Adee Ran	Intel	Time-domain performance analysis for recently contributed channels using PAM-4 signaling	ran_01_1111.pdf
3:00 PM			Break	
3:20 PM	Ziad Hatab	Vitesse	Transmit Voltage Proposal for 100GbE	hatab_01_1111.pdf
3:50 PM	Phil Northcott	PMC-Sierra	FEC Requirements for 100G Backplane	northcott_01_1111.pdf
4:20 PM	Roy Cideciyan	IBM	Transcoding and FEC Options and Trade-Offs for 100 Gb/s Backplane and Copper Cable	cideciyan_01_1111.pdf
4:50 PM	Roy Cideciyan	IBM	Performance Evaluation of Transcoding and FEC Schemes for 100 Gb/s Backplane and Copper Cable	cideciyan_02_1111.pdf
5:20 PM	Zhongfeng Wang	Broadcom	Further Studies of FEC Code for 100G-KR	wang_01_1111.pdf
5:50 PM			Pending Time Availability - Discussions & Straw Polls	
6:00 PM			Break	

Note –Times listed are subject to change.

Presentations (Plenary - Thurs)

Time	Presenter	Affiliation	Title	File Name
9:00 AM	John D'Ambrosia	Dell	Opening Comments	
9:10 AM			Discussion, Strawpolls, Action Items	
10:15 AM			Break	
10:35 AM			Motions, Closing Business	
12:00 PM			Adjourn	

Note –Times listed are subject to change.

Future Meetings

- See: <http://www.ieee802.org/3/interims/index.html>
- Jan 2012 Interim (Hosted by Ethernet Alliance)
 - Date: week of Jan 23, 2012
 - Location: Fairmont Newport Beach, Newport Beach, CA, USA
- March 2012 Plenary
 - Date: week of March 11
 - Location: Hilton Waikoloa Village, Waikoloa, HI USA
- May 2012 Interim (Hosted by Cisco)
 - Date: TBD
 - Location: TBD
- 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!