IEEE 802.3az
Energy Efficient Ethernet

Agenda and General Information

Seoul, Korea
Sept, 2008

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Agenda

- Welcome and Introductions
- Appoint recording secretary
- Approve Meeting Minutes
- Don't forget to declare affiliation
- Goals for this Meeting
- Reflector and Web
- Rules
- Call for Patents
- IEEE
  - Structure
  - Bylaws and Rules
  - IEEE Standards Process
- Presentations
- Discussion and Motions
- Future Meetings

IEEE 802.3az EEE Contacts

- Task Force Chair
    - Mike Bennett (mjbennett@ieee.org)

- Web Master
    - Bruce Nordman (bnordman@lbl.gov)

- Editor-in-Chief
    - Sanjay Kasturia (kasturia@teranetics.com)

Remember to Declare Your Affiliation

- **From the IEEE SA Standards Board By-laws**
  - ❑ **5.2.1.5 Disclosure of affiliation (**(http://standards.ieee.org/guides/bylaws/sect5.html#5.2.1.5)
    - Every member and participant in a working group, Sponsor ballot, or other standards development activity shall disclose his or her affiliation. An individual is deemed "affiliated" with any individual or entity that has been, or will be, financially or materially supporting that individual's participation in a particular IEEE standards activity. This includes, but is not limited to, his or her employer and any individual or entity that has or will have, either directly or indirectly, requested, paid for, or otherwise sponsored his or her participation. Failure to disclose every such affiliation may result in complete or partial loss of rights to participate in IEEE-SA activities. An individual is not excused from compliance with this policy by reason of any claim of a conflicting obligation (whether contractual or otherwise) that prohibits disclosure of affiliation.

- **From the IEEE SA Standards Board Operations Manual**
  - ❑ **5.3.3.1 Disclosure of affiliation** (http://standards.ieee.org/guides/opman/sect5.html#5.3.3.1)
    - Each participant's affiliation shall be disclosed at any working group or project meeting. The chair or the chair's delegate shall inform the meeting of the requirement for disclosure of affiliation (see 5.2.1.5 of the *IEEE-SA Standards Board Bylaws*). This shall be via a sign-in (e.g., sign-in sheet, electronic sign-in, verbal disclosure, or electronic communication) that provides for disclosure of employer and any other affiliation, a reminder of the definition of affiliation, and possible penalties for non-compliance.
    - Whenever an individual is aware that the ownership of his or her employer or other affiliation may be material to the process, or when the Sponsor or the IEEE-SA Standards Board requests, that individual shall also declare the "ultimate parent entity" of their affiliation. The ultimate parent entity is an entity that directly or indirectly, through one or more intermediaries, controls the entity identified as the individual's affiliation. For the purposes of this definition, the term "control" and its derivatives, with respect to for-profit entities, means the legal, beneficial or equitable ownership, directly or indirectly, of more than fifty percent (50%) of the capital stock (or other ownership interest, if not a corporation) of an entity ordinarily having voting rights. "Control" and its derivatives, with respect to nonprofit entities, means the power to elect or appoint more than fifty percent (50%) of the Board of Directors of an entity.
  - ❑ **5.3.3.2 False or misleading disclosure** (http://standards.ieee.org/guides/opman/sect5.html#5.3.3.2)
    - A meeting attendee who fails to disclose affiliation shall not accrue any membership rights, including rights of or towards voting membership, until such disclosures have been made. The chair shall review the adequacy of disclosures. Failure to disclose affiliation, or materially false or misleading disclosure of affiliation, shall result in loss of membership privileges and may also result in loss of other participation privileges within the IEEE-SA for such participants and any affiliated entities

IEEE 802.3 Voting privileges

- The rules regarding obtaining and maintaining that privilege are found here: http://www.ieee802.org/3/rules/member.html
- To become a voter:
  - ❑ Contact information must be current in the 802.3 database
  - ❑ You must attend and sign attendance book for at least 75% of sessions of two 802.3 WG plenary meetings (within the last four)
    - Full attendance at a two-day 802.3 WG Interim can be substituted for <u>one</u> Plenary
  - ❑ Request to become a voter during the opening or closing Plenary meeting when solicited by the Chair from the "potential voters list"

- To remain a voter
  - ❑ Contact information must be current in the 802.3 database
  - ❑ 75% attendance during at least two of the last four plenary meetings
    - Attendance at an interim can substitute for attendance at no more than 1 plenary
  - ❑ Participate in Working Group ballots.
    - <u>You can be dropped for lack of participation !</u>

Goals for this Meeting

- Continue hearing proposals
  - Fill in TBDs and holes

- Review comments on D0.9

- Review draft D0.9 and proposed changes

- Direct editors to produce D1.0 for Task Force review

- Lay the ground work for the next meeting

Reflector and Web

- To subscribe to the Energy Efficient Ethernet (EEE) reflector, send your request to:
  ListServ@ieee.org

  with the following in the body of the message (do not include "<>"):
  subscribe stds-802-3-eee <yourfirstname> <yourlastname>
  end

- Send EEE reflector messages to:
  stds-802-3-eee@listserv.ieee.org

- For complete instructions on reflector usage, subscription, and unsubscription:
  http://www.ieee802.org/3/az/reflector.html

- EEE web page URL:
  http://www.ieee802.org/3/az/index.html

Ground Rules

- **Based upon IEEE 802.3 Rules**
  - ❑ Meetings conducted using 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, Average Sales Prices (ASP), etc. no matter what the currency
- **NO restrictive notices**

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*
- **LAN/MAN Standards Committee (LMSC) Policies and Procedures:**
  - *http://ieee802.org/policies-and-procedures.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.

Participants, Patents, and Duty to Inform

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

- ❑ **"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**

    Quoted text excerpted from IEEE-SA Standards Board Bylaws subclause 6.2

- ■ **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/guides/bylaws/sect6-7.html#6

IEEE-SA Standards Board Operations Manual

http://standards.ieee.org/guides/opman/sect6.html#6.3

Material about the patent policy is available at

http://standards.ieee.org/board/pat/pat-material.html

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

This slide set is available at http://standards.ieee.org/board/pat/pat-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.

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

Energy Efficient Ethernet
Task Force

Approval Process

Standards Process

Technical Activities
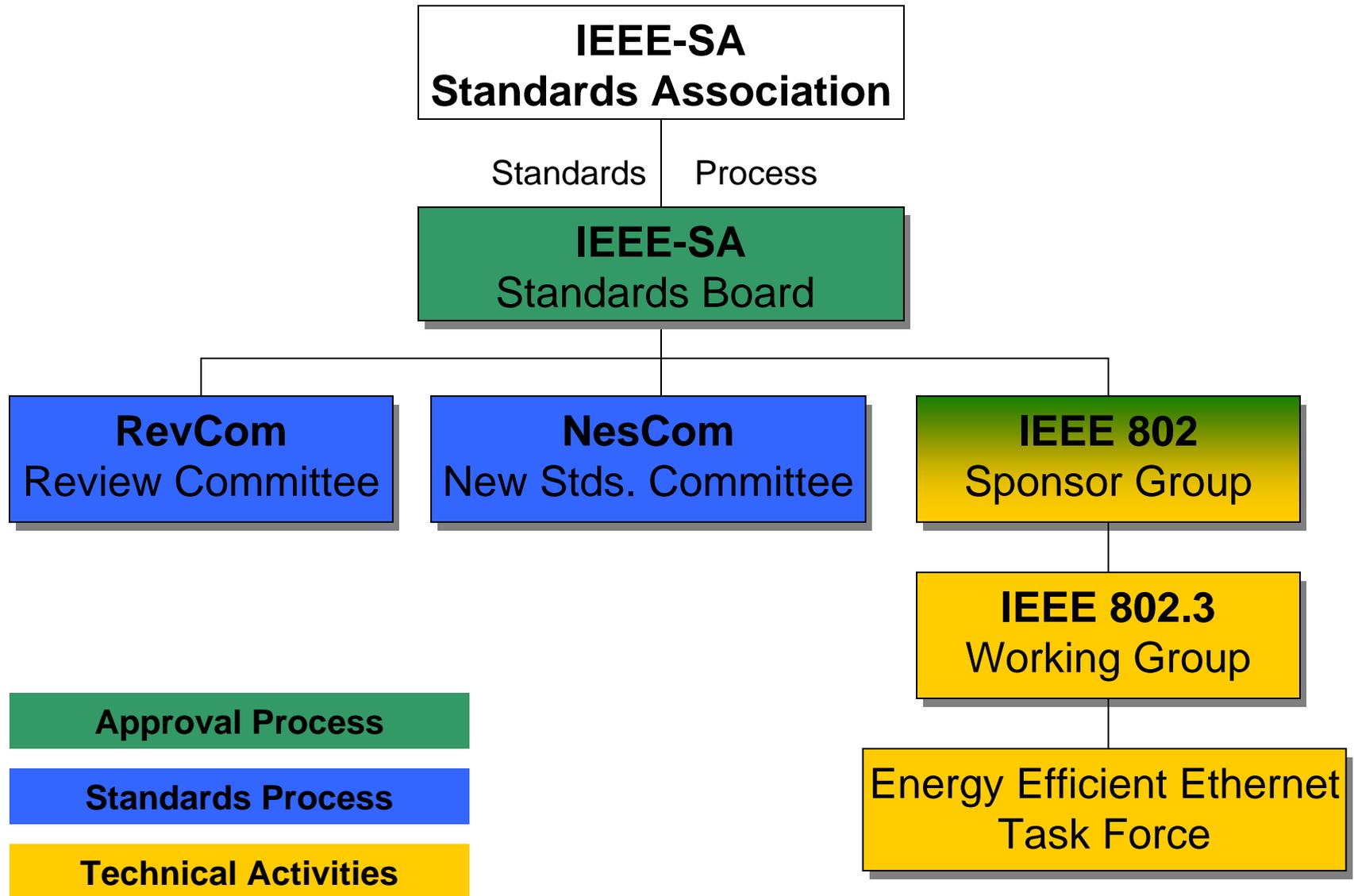
Overview of IEEE 802.3 Standards Process (1/5)
Study Group Phase
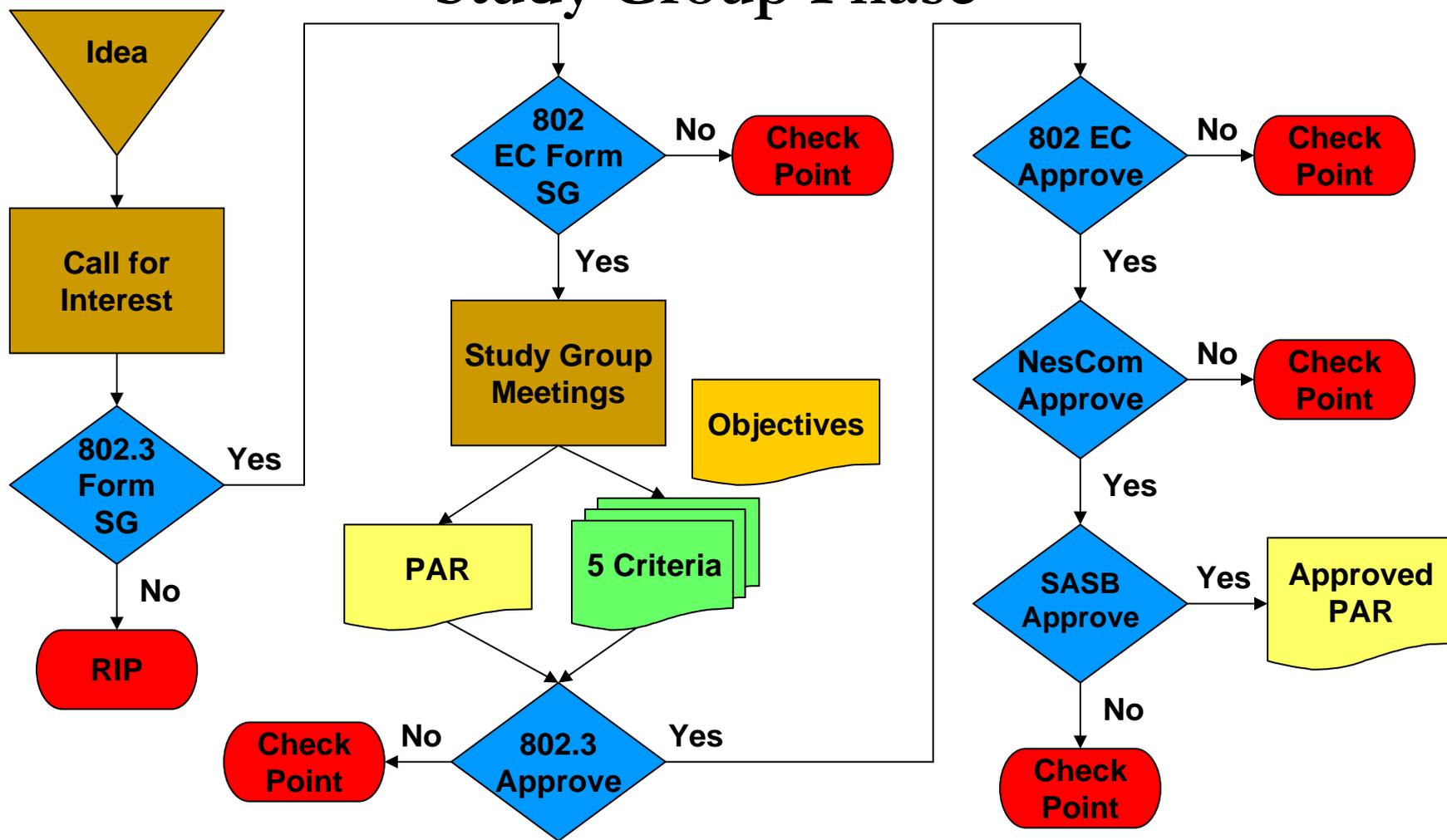
Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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

Approved PAR

Task Force Meetings

Objectives

Proposals Selected — Yes / No

D1.0

Task Force Review

D1.(n+1)

TF Review Done — No / Yes

To 802.3 WG Ballot — No / Yes

D2.0

A

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

A

802.3 WG BALLOT

TF Resolves Comments

D2.(n+1)

Substantive Changes — Yes

In Scope New Negatives — Yes

≥ 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

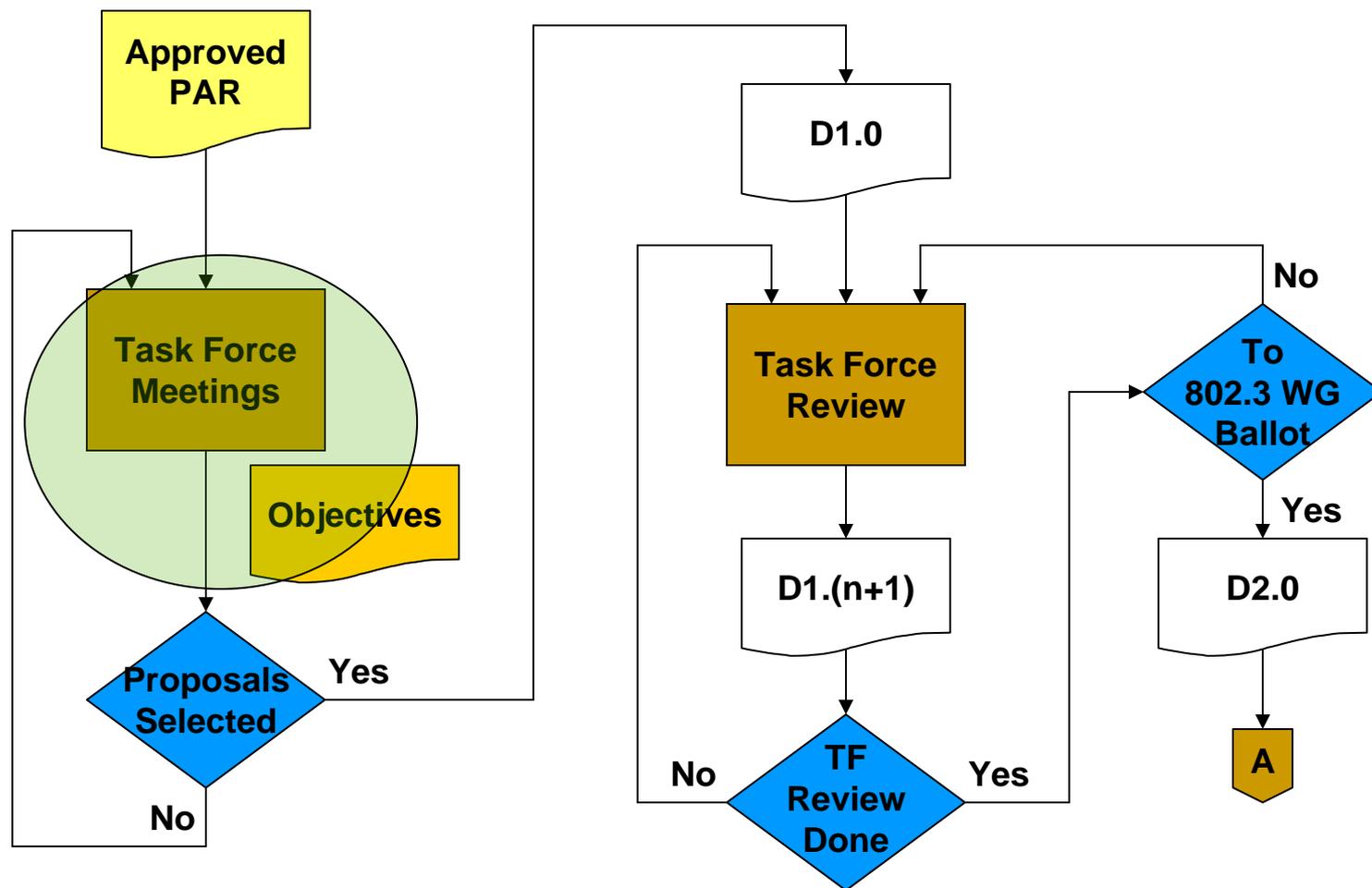**Notes**: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

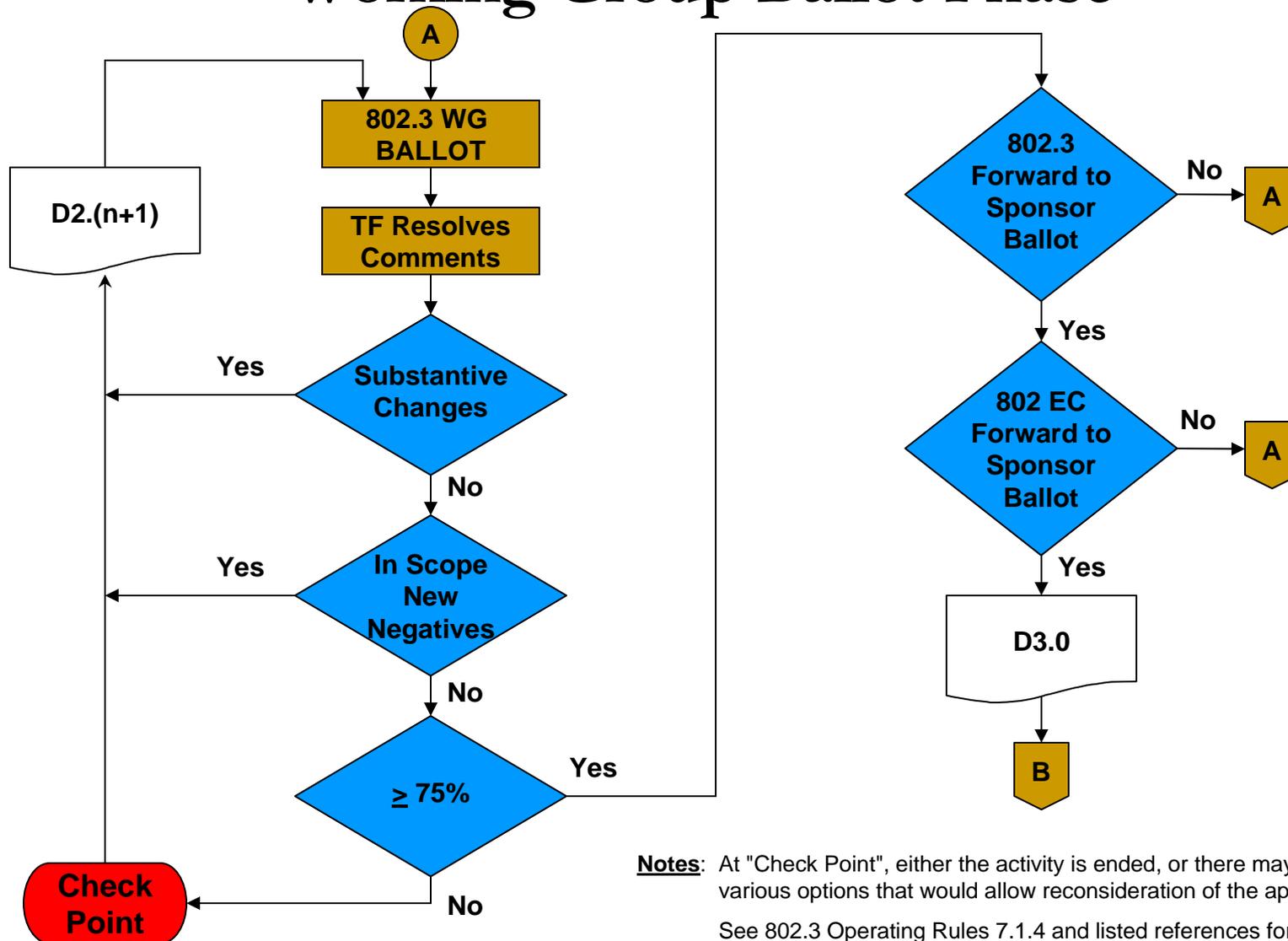See 802.3 Operating Rules 7.1.4 and listed references for complete description

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** → D3.(n+1)

No

In Scope New Negatives — **Yes** → D3.(n+1)

No

≥ 75% — **Yes** →

No → **Check Point**

802.3 Forward to RevCom — **No** → **B**

Yes

802 EC Forward to RevCom — **No** → **B**
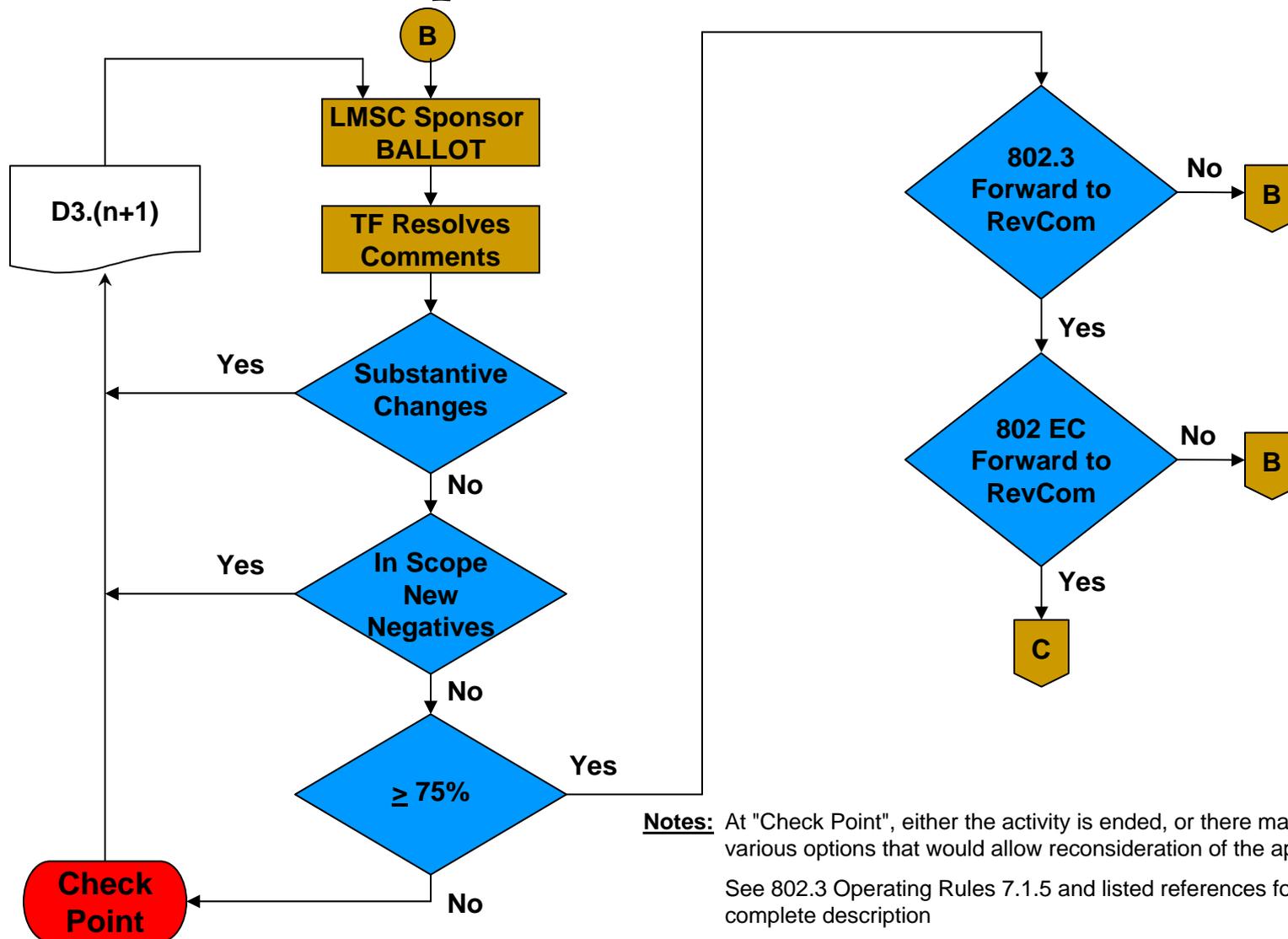
Yes

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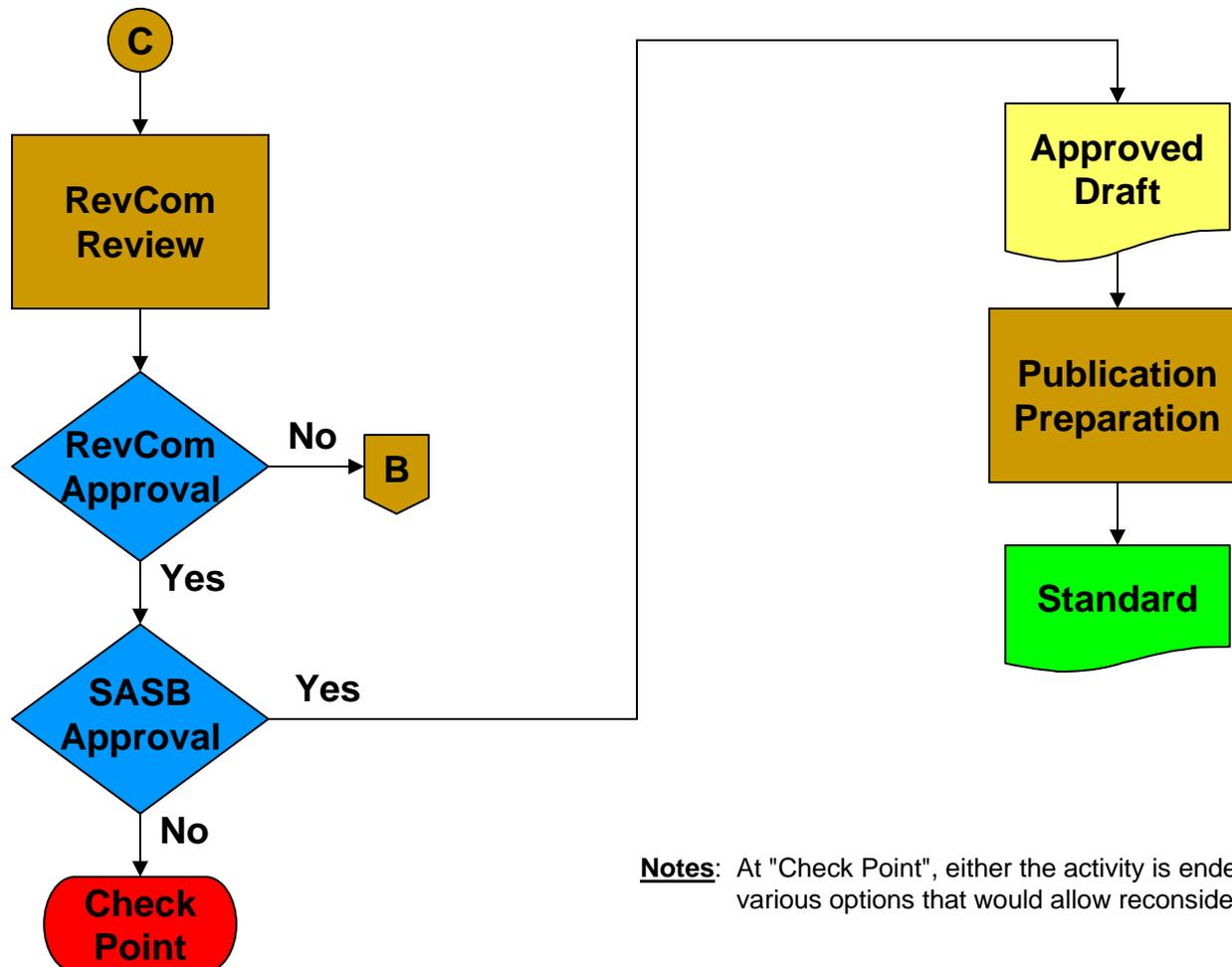
Overview of IEEE 802.3 Standards Process (5/5)
Final Approvals and Standard Release

C

RevCom
Review

RevCom
Approval

No → B

Yes

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 reconsideration of the approval.

IEEE 802.3az Objectives

- Define a mechanism to reduce power consumption during periods of low link utilization for the following PHYs
  - 100BASE-TX (Full Duplex)
  - 1000BASE-T (Full Duplex)
  - 10GBASE-T
  - 10GBASE-KR
  - 10GBASE-KX4
  - 1000BASE-KX (added July 2008)

- Define a protocol to coordinate transitions to or from a lower level of power consumption

- The link status should not change as a result of the transition

IEEE 802.3az Objectives

- No frames in transit shall be dropped or corrupted during the transition to and from the lower level of power consumption

- The transition time to and from the lower level of power consumption should be transparent to upper layer protocols and applications

- Define a 10 megabit PHY with a reduced transmit amplitude requirement such that it shall be fully interoperable with legacy 10BASE-T PHYs over 100 m of Class D (Category 5) or better cabling to enable reduced power implementations.

- Any new twisted-pair and/or backplane PHY for EEE shall include legacy compatible auto negotiation

802.3az timeline – adopted 2008-03-20
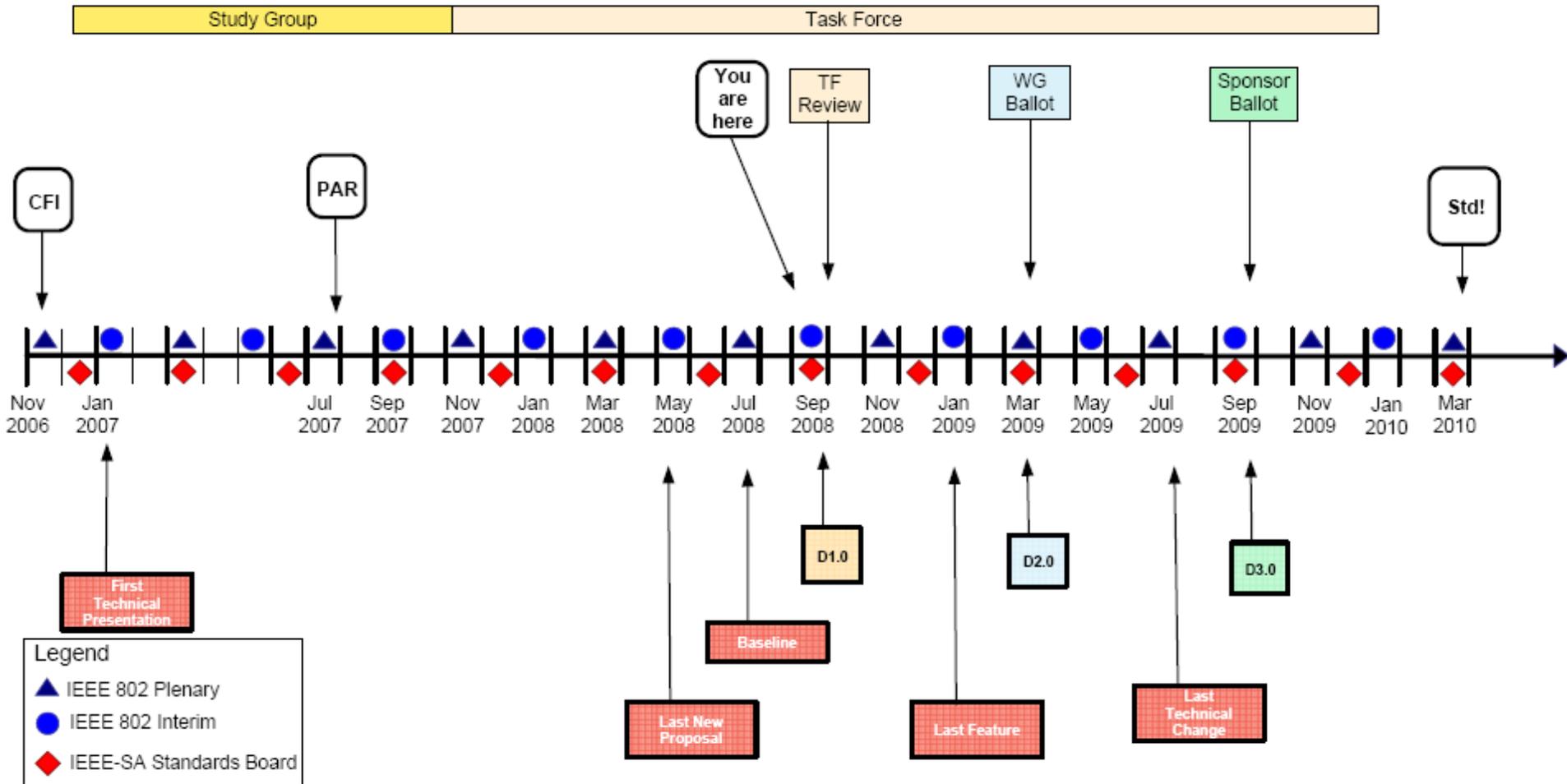
Presentations and Discussion

Tuesday

Time	Title	File name	Presenter	Affiliation	Duration
8:00 AM	Introductions, Agenda and General Information	agenda_01_0708.pdf	Mike Bennett	LBNL	0:30
8:30 AM	State of the draft	kasturia_01_0908.pdf	Sanjay Kasturia	Teranetics	0:15
8:45 AM	Re-optimization of Cat5 Twisted Pair Model for 10BASE-Te	chadha_01_0809.pdf	Mandeep Chadha	Vitesse	0:30
9:15 AM	Corner cases and Comments on EEE clause 40	chou_01_0908.pdf	Joseph Chou	Realtek	0:30
9:45 AM	Break				0:30
10:15 AM	Proposed Modifications to IEEE P802.3az/D0.9 Clause 40	healey_01_0908.pdf	Adam Healey	LSI	0:20
10:35 AM	10GBASE-T ad hoc output	parnaby_01_0908.pdf	Gavin Parnaby	Solarflare	0:30
11:05 AM	Energy Efficient Ethernet 1000BASE-T LPI WAIT_QUIET Timer	grimwood_01_0708.pdf	Mike Grimwood	Broadcom	0:20
11:25 AM	10GBase-T EEE Specifications Refresh, Quiet	sedarat_02_0908.pdf	Hossein Sedarat	Aquantia	0:30
11:55 AM	Lunch				1:30
1:25 PM	Refresh+ an option to ease 10GBASE-T LPI parameter selection	sedarat_03_0908.pdf	Hossein Sedarat	Aquantia	0:30
1:55 PM	10GBASE-T EEE Specifications Alert	sedarat_01_0908.pdf	Hossein Sedarat	Aquantia	0:30
2:25 PM	Tutorial - Comments and Comment Entry Tool	diab_01_0908.pdf	Wael Diab	Broadcom	0:30
2:55 PM	Break				0:30
3:25 PM	comment processing		all		1:35
5:00 PM	Recess				

Wednesday

Time	Title	File name	Presenter	Affiliation	Duration
10:00 AM	comment processing		all		2:00
12:00 PM	Lunch				1:30
1:30 PM	comment processing		all		1:30
3:00 PM	Break				0:30
3:30 PM	comment processing		all		1:30
5:00 PM	Recess				

Thursday

Time	Title	File name	Presenter	Affiliation	Duration
9:00 AM	Draft review and motions		all		1:00
10:00 AM	Break				0:30
10:30 AM	Draft review and motions		all		1:30
12:00 PM	Lunch				1:30
1:30 PM	Draft review and motions		all		1:30
3:00 PM	Break				0:30
3:30 PM	Draft review and motions		all		1:30
5:00 PM	Adjourn				

Future Meetings

- **Nov 2008 Plenary**
  - Nov 9 – 14
  - Hyatt Regency Dallas at Reunion
  - Dallas, Tx, USA

- Future meeting information at:
  - http://ieee802.org/3/interims/index.html

Thank You!