




IEEE 802.3 Higher Speed Study Group

Agenda and General Information

Atlanta, GA
November, 2007



Agenda

- Welcome and Introductions
- Appoint/Volunteer Recording Secretary
- Approve Agenda
- Approve the Minutes
- Goals for this Week
- Ground Rules
- Reflector and Web
- IEEE
 - Structure
 - Bylaws and Rules
 - Call for Patents
 - IEEE Standards Process
- Liaisons
- Presentations
- Discussion and Motions
- Future Meetings

Study Group 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

IEEE 802.3 HSSG Organization

- Study Group Chair:
 - John D'Ambrosia (jdambrosia@ieee.org)
- Web Master
 - Frank Chang (ychang@vitesse.com)

- “Reach” Ad Hoc Chair
 - Andy Moorwood (amoorwood@extremenetworks.com)
- “Fiber Optic” Ad Hoc Chair
 - Dan Dove (dan.dove@hp.com)

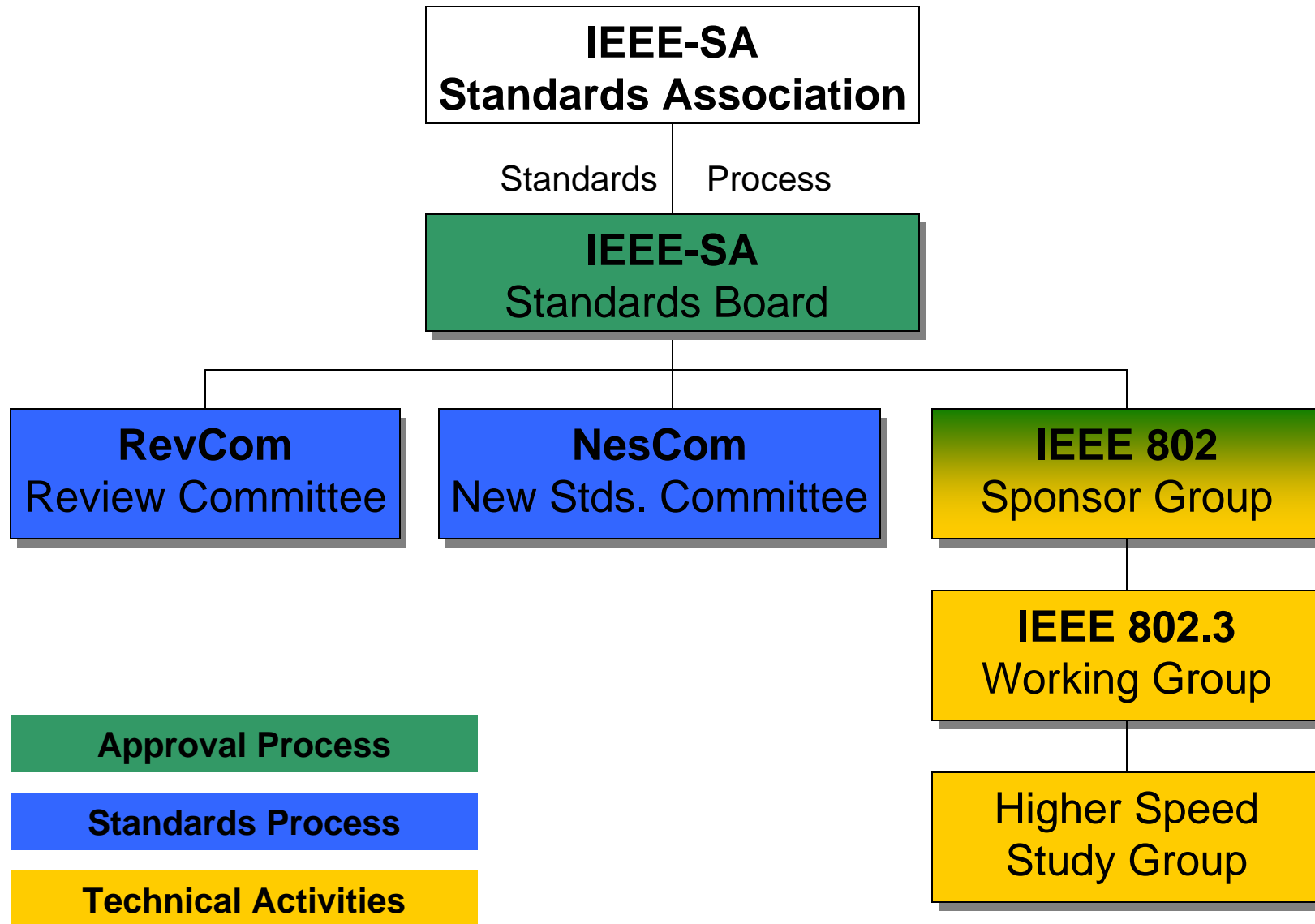
Goals for the Week

- Hear Technical Presentations
- Identify potential “Big Ticket Items”

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



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

Highlights of the *IEEE-SA Standards Board* *Bylaws* on Patents in Standards

- **Participants have a duty to tell the IEEE if they know (based on personal awareness) of potentially Essential Patent Claims they or their employer own**
- **Participants are encouraged to tell the IEEE if they know of potentially Essential Patent Claims owned by others**
 - This encouragement is particularly strong as the third party may not be a participant in the standards process
- **Working Group required to request assurance**
- **Early assurance is encouraged**
- **Terms of assurance shall be either:**
 - Reasonable and nondiscriminatory, with or without monetary compensation; or,
 - A statement of non-assertion of patent rights
- **Assurances**
 - Shall be provided on the IEEE-SA Standards Board approved LOA form
 - May optionally include not-to-exceed rates, terms, and conditions
 - Shall not be circumvented through sale or transfer of patents
 - Shall be brought to the attention of any future assignees or transferees
 - Shall apply to Affiliates unless explicitly excluded
 - Are irrevocable once submitted and accepted
 - Shall be supplemented if Submitter becomes aware of other potential Essential Patent Claims
- **A “Blanket Letter of Assurance” may be provided at the option of the patent holder**
- **A patent holder has no duty to perform a patent search**
- **Full policy available at <http://standards.ieee.org/guides/bylaws/sect6-7.html#6>**

IEEE-SA Standards Board Bylaws on Patents in Standards

6.2 Policy

IEEE standards may be drafted in terms that include the use of Essential Patent Claims. If the IEEE receives notice that a [Proposed] IEEE Standard may require the use of a potential Essential Patent Claim, the IEEE shall request licensing assurance, on the IEEE Standards Board approved Letter of Assurance form, from the patent holder or patent applicant. The IEEE shall request this assurance without coercion.

The Submitter of the Letter of Assurance may, after Reasonable and Good Faith Inquiry, indicate it is not aware of any Patent Claims that the Submitter may own, control, or have the ability to license that might be or become Essential Patent Claims. If the patent holder or patent applicant provides an assurance, it should do so as soon as reasonably feasible in the standards development process. This assurance shall be provided prior to the Standards Board's approval of the standard. This assurance shall be provided prior to a reaffirmation if the IEEE receives notice of a potential Essential Patent Claim after the standard's approval or a prior reaffirmation. An asserted potential Essential Patent Claim for which an assurance cannot be obtained (e.g., a Letter of Assurance is not provided or the Letter of Assurance indicates that assurance is not being provided) shall be referred to the Patent Committee.

A Letter of Assurance shall be either:

- a) A general disclaimer to the effect that the Submitter without conditions will not enforce any present or future Essential Patent Claims against any person or entity making, using, selling, offering to sell, importing, distributing, or implementing a compliant implementation of the standard; or
- b) A statement that a license for a compliant implementation of the standard will be made available to an unrestricted number of applicants on a worldwide basis without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination. At its sole option, the Submitter may provide with its assurance any of the following: (i) a not-to-exceed license fee or rate commitment, (ii) a sample license agreement, or (iii) one or more material licensing terms.

IEEE-SA Standards Board Bylaws on Patents in Standards

Copies of an Accepted LOA may be provided to the working group, but shall not be discussed, at any standards working group meeting.

The Submitter and all Affiliates (other than those Affiliates excluded in a Letter of Assurance) shall not assign or otherwise transfer any rights in any Essential Patent Claims that are the subject of such Letter of Assurance that they hold, control, or have the ability to license with the intent of circumventing or negating any of the representations and commitments made in such Letter of Assurance.

The Submitter of a Letter of Assurance shall agree (a) to provide notice of a Letter of Assurance either through a Statement of Encumbrance or by binding any assignee or transferee to the terms of such Letter of Assurance; and (b) to require its assignee or transferee to (i) agree to similarly provide such notice and (ii) to bind its assignees or transferees to agree to provide such notice as described in (a) and (b).

This assurance shall apply to the Submitter and its Affiliates except those Affiliates the Submitter specifically excludes on the relevant Letter of Assurance.

If, after providing a Letter of Assurance to the IEEE, the Submitter becomes aware of additional Patent Claim(s) not already covered by an existing Letter of Assurance that are owned, controlled, or licensable by the Submitter that may be or become Essential Patent Claim(s) for the same IEEE Standard but are not the subject of an existing Letter of Assurance, then such Submitter shall submit a Letter of Assurance stating its position regarding enforcement or licensing of such Patent Claims. For the purposes of this commitment, the Submitter is deemed to be aware if any of the following individuals who are from, employed by, or otherwise represent the Submitter have personal knowledge of additional potential Essential Patent Claims, owned or controlled by the Submitter, related to a [Proposed] IEEE Standard and not already the subject of a previously submitted Letter of Assurance: (a) past or present participants in the development of the [Proposed] IEEE Standard, or (b) the individual executing the previously submitted Letter of Assurance.

IEEE-SA Standards Board Bylaws on Patents in Standards

The assurance is irrevocable once submitted and accepted and shall apply, at a minimum, from the date of the standard's approval to the date of the standard's withdrawal.

The IEEE is not responsible for identifying Essential Patent Claims for which a license may be required, for conducting inquiries into the legal validity or scope of those Patent Claims, or for determining whether any licensing terms or conditions are reasonable or non-discriminatory.

Nothing in this policy shall be interpreted as giving rise to a duty to conduct a patent search. No license is implied by the submission of a Letter of Assurance.

In order for IEEE's patent policy to function efficiently, individuals participating in the standards development process: (a) shall inform the IEEE (or cause the IEEE to be informed) of the holder of any potential Essential Patent Claims of which they are personally aware and that are not already the subject of an existing Letter of Assurance, owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents; and (b) should inform the IEEE (or cause the IEEE to be informed) of any other holders of such potential Essential Patent Claims that are not already the subject of an existing Letter of Assurance.

Other Guidelines for IEEE WG Meetings

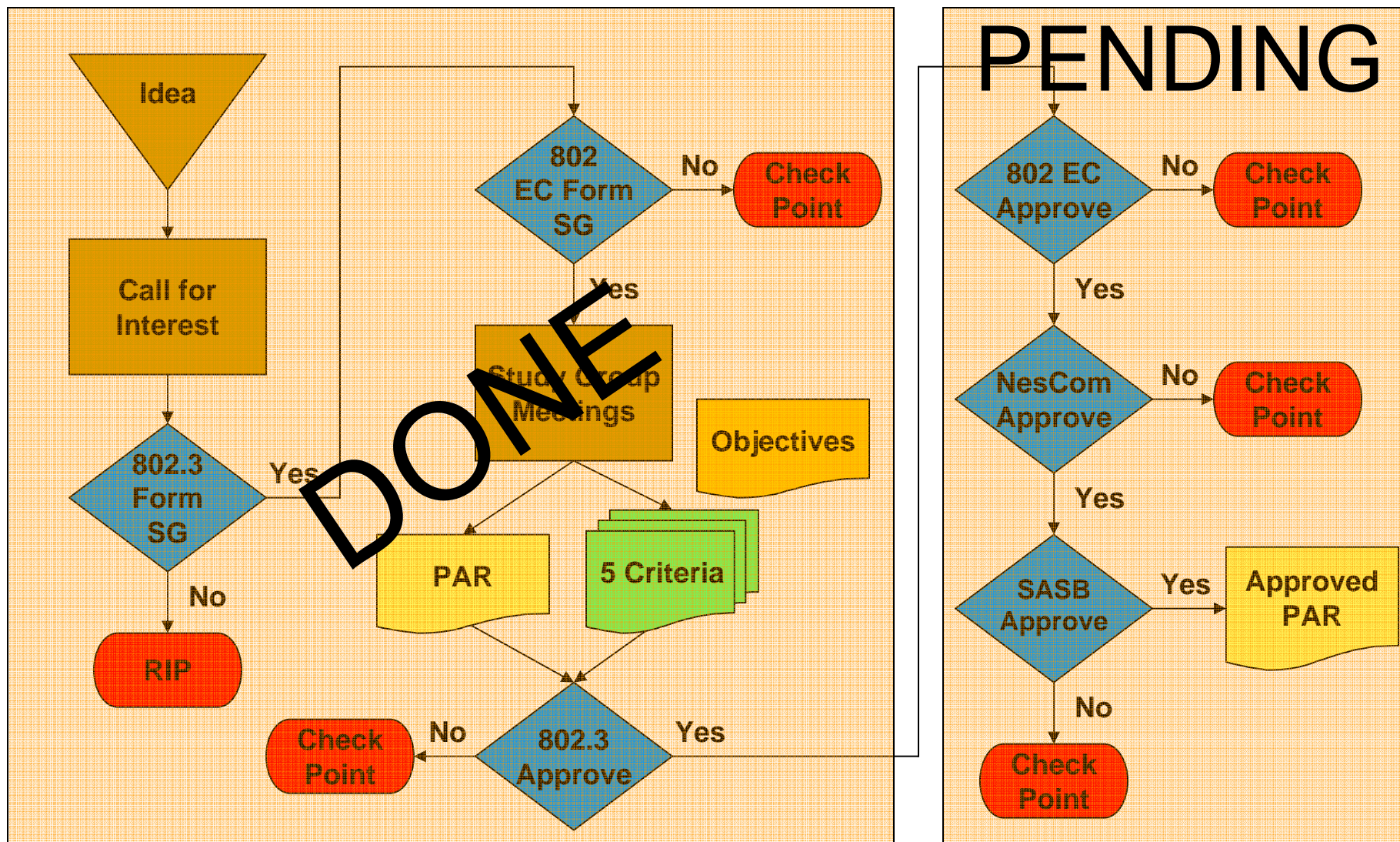
- All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.
- Don't discuss the interpretation, validity, or essentiality of patents/patent claims.
- Don't discuss specific license rates, terms, or conditions.
 - Relative costs, 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 fixing product prices, allocation of customers, or dividing 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/board/pat/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.

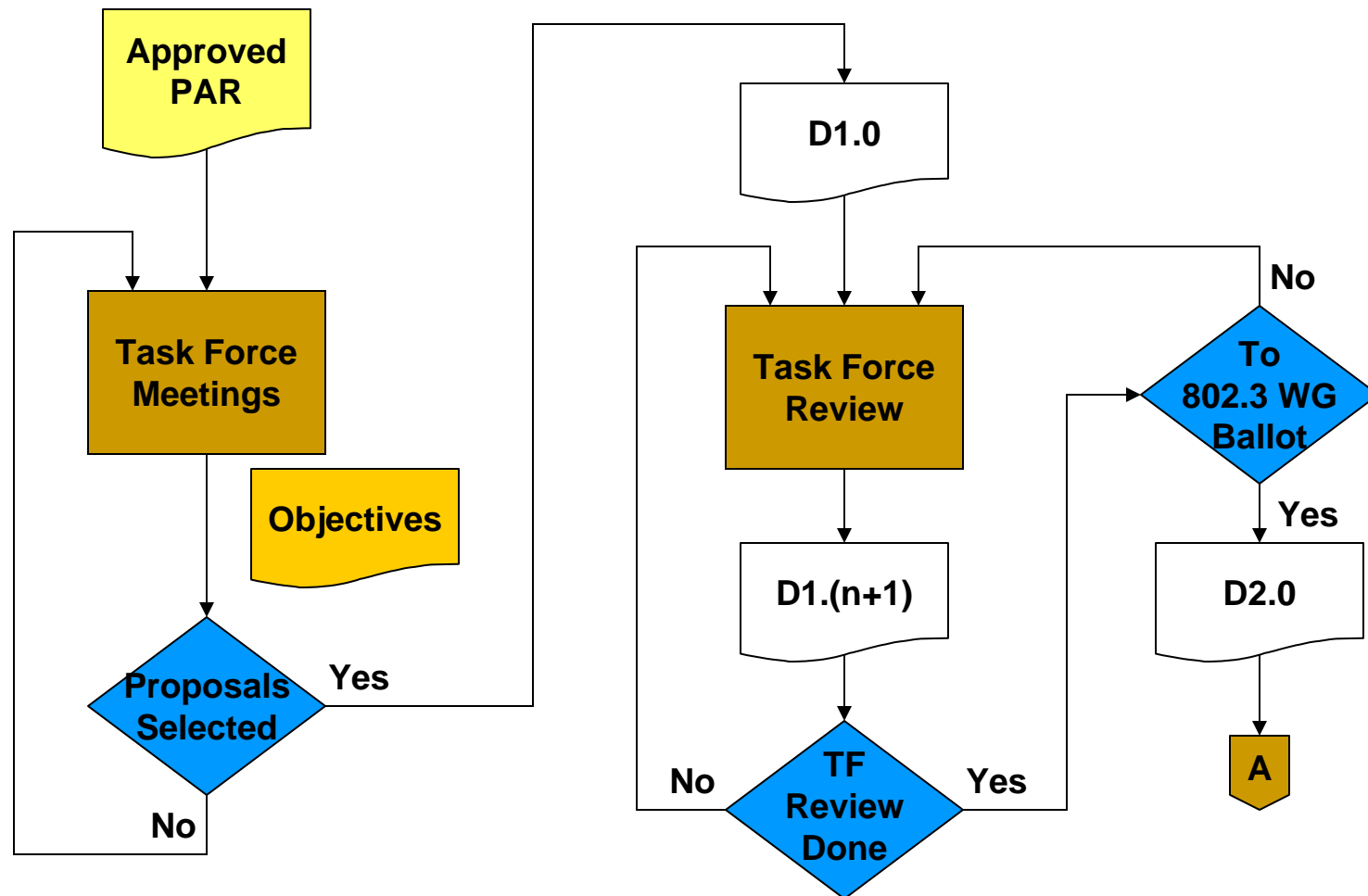
This slide set is available at <http://standards.ieee.org/board/pat/pat-slideset.ppt>

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

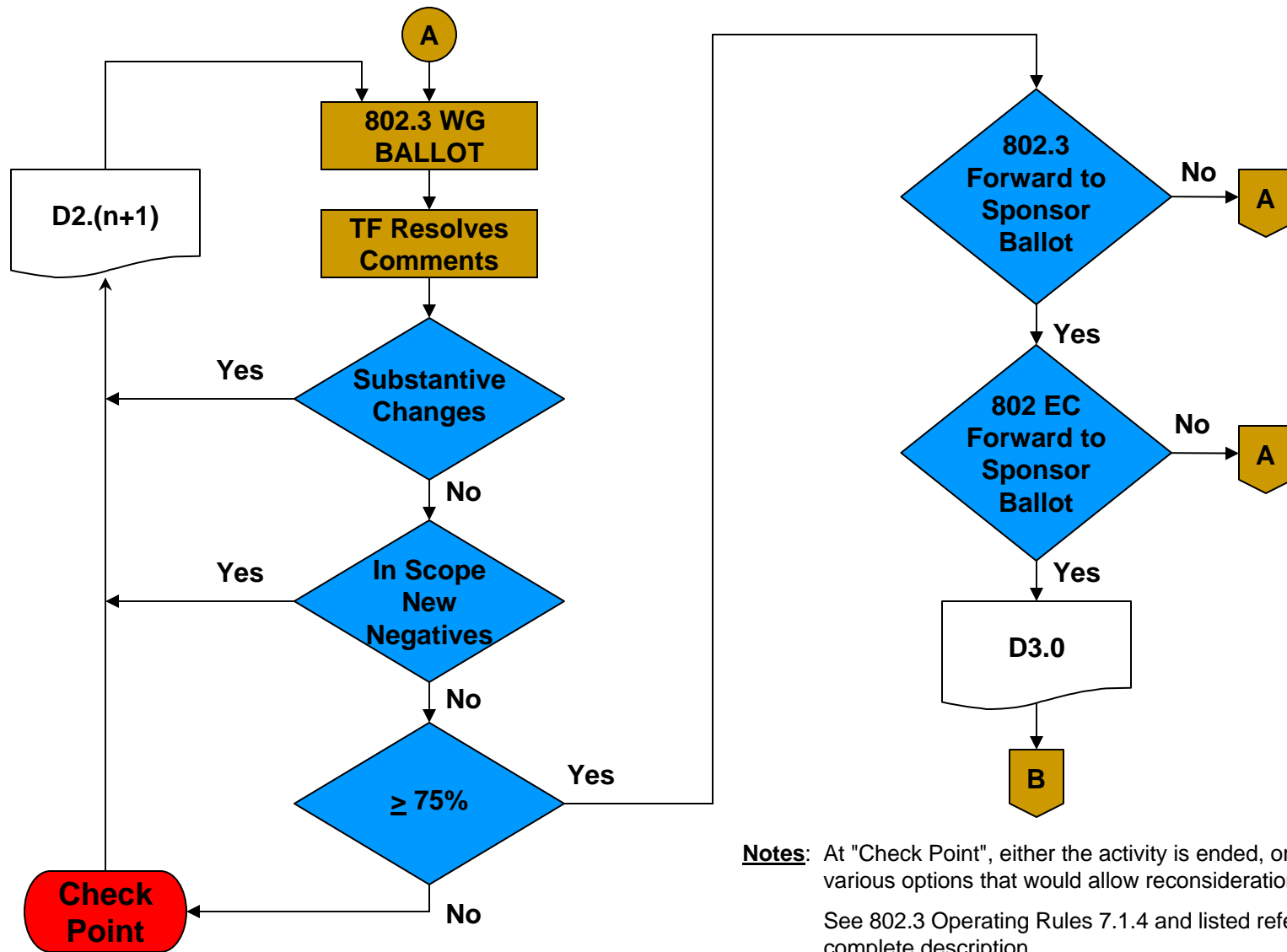


Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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

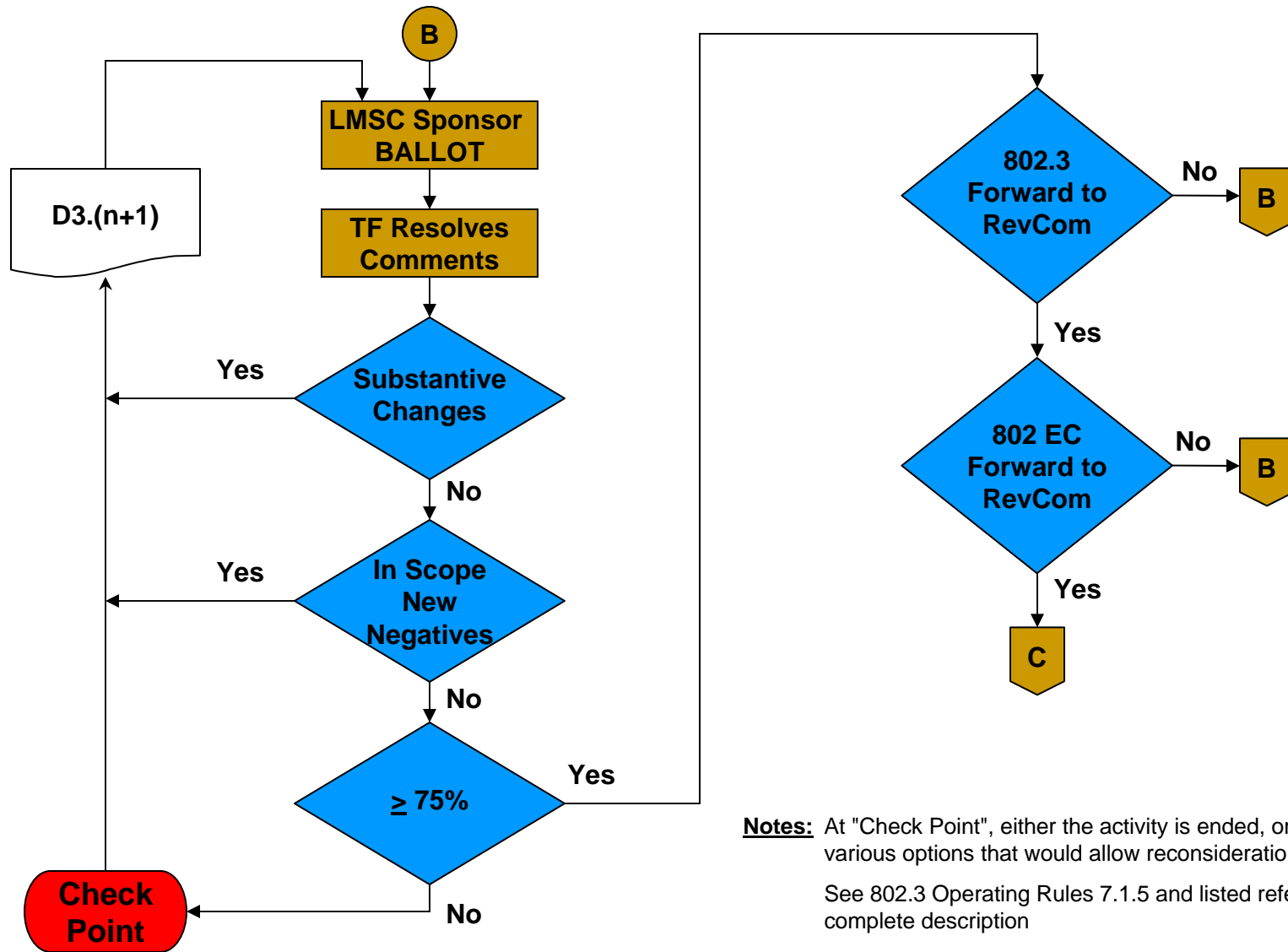


Overview of IEEE 802.3 Standards Process (3/5) - Working Group Ballot Phase



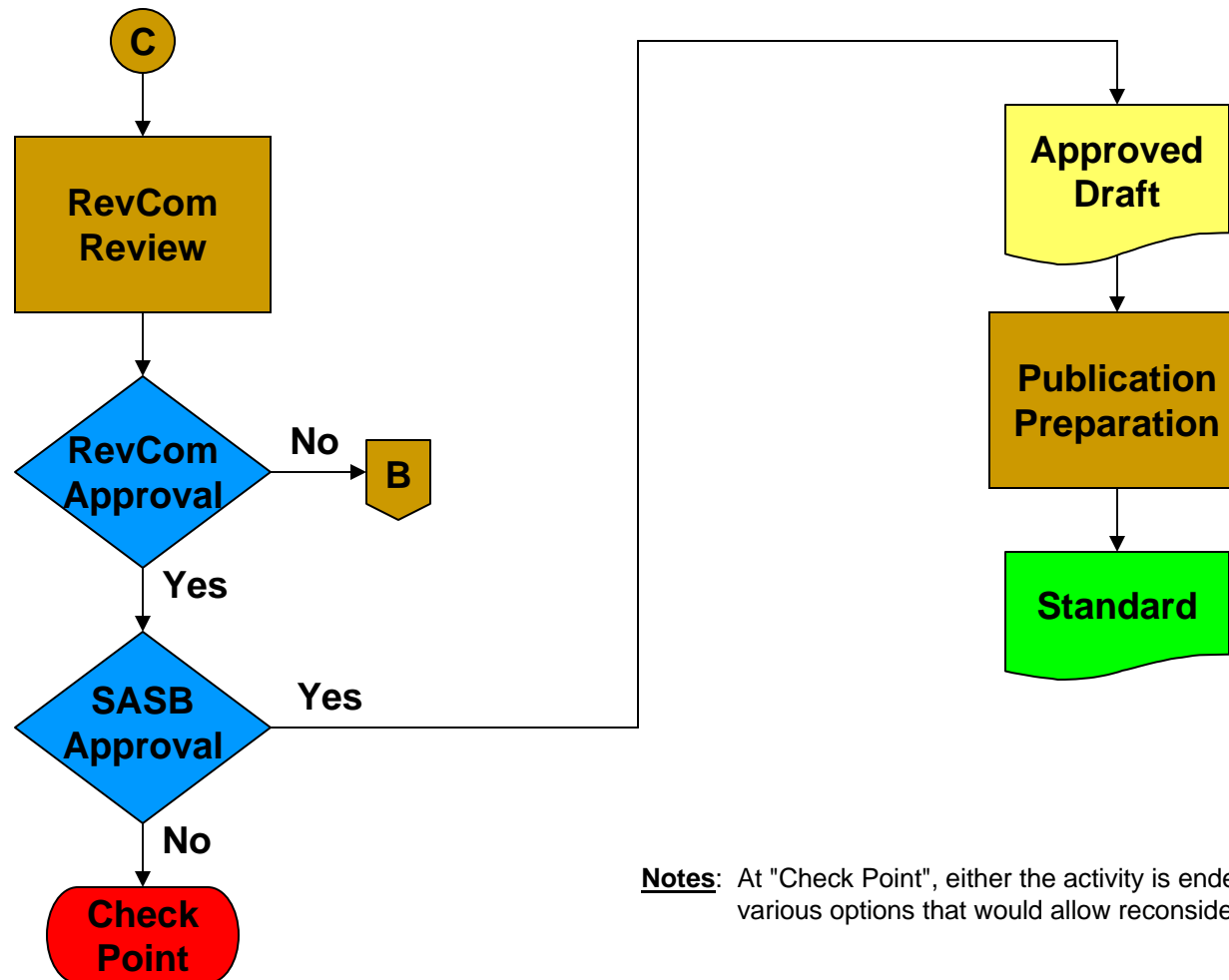
Notes: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval. See 802.3 Operating Rules 7.1.4 and listed references for complete description

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.

Key Dates

- ❑ Sept 28 Tutorial request deadline (DONE)
- ❑ Oct 12 NesCom submittal deadline (DONE)
- ❑ Oct 12 EC submittal deadline (DONE)
- ❑ Nov 16 EC Approve PAR
4th SG extension
- ❑ Dec 5 SASB meeting – PAR approval

HSSG Approved Project Documents

- PAR

- http://ieee802.org/3/hssg/PAR/par_0707.pdf

- 5 Criteria

- http://ieee802.org/3/hssg/PAR/HSSG_5C_0707.pdf

- Objectives

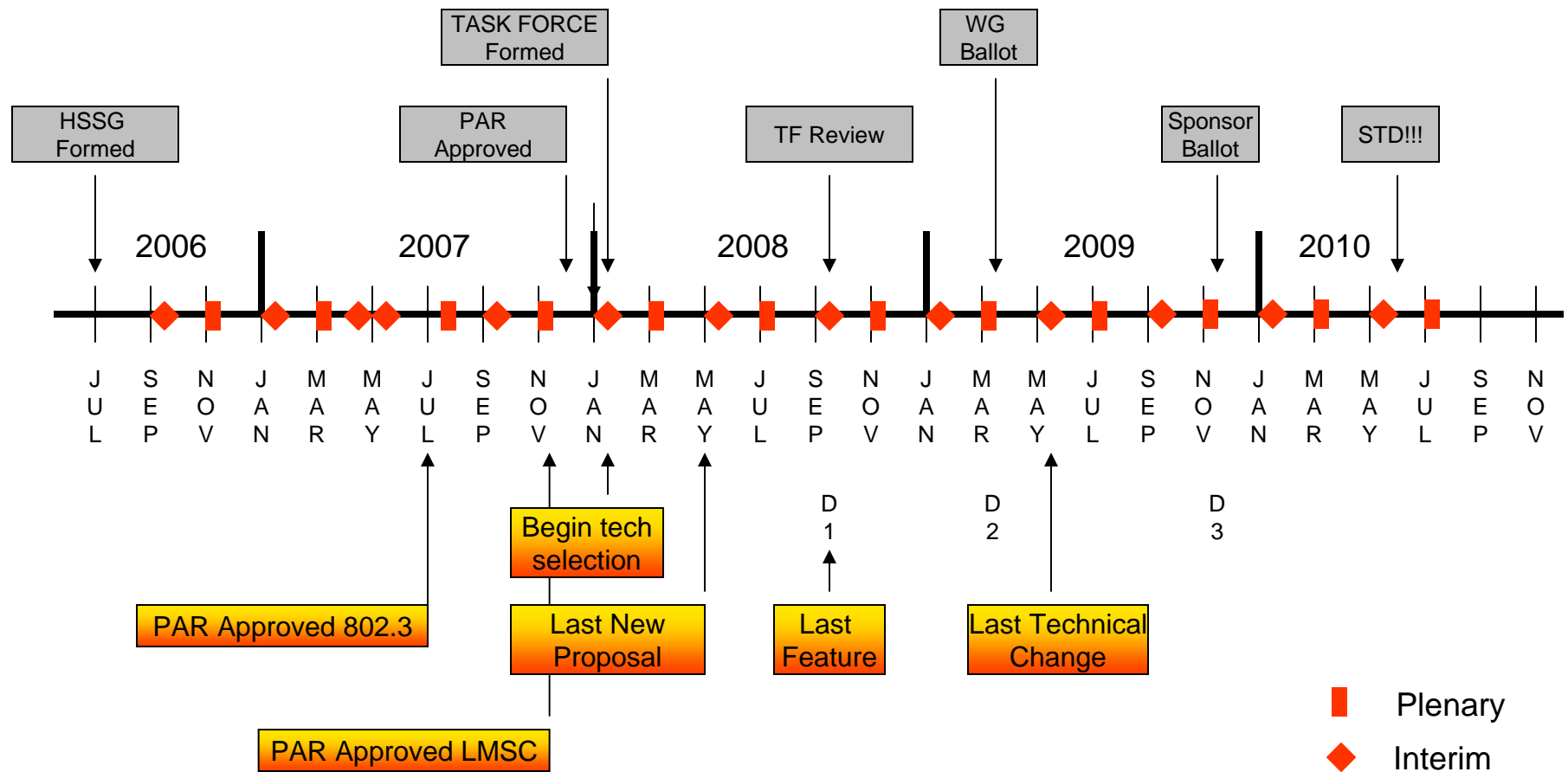
- http://ieee802.org/3/hssg/PAR/HSSG_Objectives_0707.pdf

HSSG 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 100m on OM3 MMF
 - at least 10m 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 10m over a copper cable assembly

Adopted by HSSG and approved by 802.3 at July 2007 Plenary

Possible Timeline



Meeting Map

	Mon	Tues	Wed	Thur	Fri
8:00	SEC	HSSG - All	HSSG - All	HSSG - All	
8:30					
9:00					
9:30					
10:00					
10:30	802.0 Plenary	HSSG - Fiber	Closing Business		
11:00					
11:30	Lunch	Lunch (1:15PM)	Lunch	Lunch	
12:00					
12:30	802.3 Plenary	HSSG - All	HSSG - Fiber	HSSG - Cu	802.3 Plenary
13:00					
13:30					
14:00					
14:30					
15:00					
15:30					
16:00	Dinner	Dinner	Dinner		
16:30					
17:00	Tutorial #1	Tutorial #3	Social		
17:30					
18:00	HSSG Tutorial	Tutorial #4			
18:30					
19:00					
19:30					
20:00					
20:30					
21:00					
21:30					

Presentations – Tuesday (SG)

Time	Presenter	Affiliation	Title	Duration	File Name
8:30 AM			Agenda and General Information	0:25	agenda_01_11_07.pdf
8:55 AM	Pete Anslow	Nortel	ITU Liaison	0:15	ITU-T SG15 liaison_1107.pdf
9:10 AM			OIF Liaison	0:05	oif2007.384.01_IEEE.pdf
9:15 AM	Howard Frazier	Broadcom	The Path to Working Group Ballot	0:45	frazier_02_1107.pdf
10:00 AM			Break	0:15	
10:15 AM	Ilango Ganga	Intel	Architecture Overview	0:45	ganga_01_1107.pdf
11:00 AM	David Law	3com	Management - MIBS	0:30	law_01_1107.pdf
11:30 AM	Ilango Ganga	Intel	IEEE P802.3ba document structure	0:25	ganga_02_1107.pdf
12:00 PM			Lunch	1:15	
1:15 PM	Howard Frazier	Broadcom	APL Update	0:30	frazier_01_1107.pdf
1:45 PM	Trey Malpass	Huawei	PBL Model update	0:30	malpass_01_1107.pdf
2:15 PM	Gary Nicholl	Cisco	CTBI: A simple lane bonding mechanism for both 40GE and 100GE Interfaces	0:30	nicholl_01_1107.pdf
2:45 PM	Mark Gustlin	Cisco	MTTFPA Considerations for 40GE and 100GE	0:30	gustlin_01_1107.pdf
3:15 PM			Break	0:15	
3:30 PM	Pete Anslow	Nortel	Error Distribution in Optical Links	0:25	anslow_01_1107.pdf
3:55 PM	Steve Trowbridge	Alcatel-Lucent	Throughput of different lane aggregation methods	0:25	trowbridge_02_1107.pdf
4:20 PM	Chris Cole	Finisar	Nx10G Electrical I/O Issues	0:30	cole_02_1107.pdf
4:50 PM	Ali Ghiasi	Broadcom	Comparison of Linear vs Limiting Electrical Interface for 4x10G and 10x10G	0:30	ghiasi_01_1107.pdf
5:20 PM	Steve Trowbridge	Alcatel-Lucent	FEC applicability to 40 GbE and 100 GbE	0:20	trowbridge_03_1107.pdf
5:40 PM			Review of Questions Received Regarding HSSG PAR		

Note – Order of presentations and times listed are subject to change.

Presentations – Wednesday (SG)

Time	Presenter	Affiliation	Title	File Name
9:00 AM			Review / Approve - Responses to Questions Received	
9:15 AM	Steve Trowbridge	Alcatel-Lucent	40 GbE and 100 GbE PCS considerations: November 2007 update	trowbridge_01_1107.pdf
9:40 AM	Jorge-Peter Elbers	Adva Optical Networking	OTN-Compatible 40 GBe and 100GBe interfaces	elbers_01_1107.pdf
10:10 AM	Trey Malpass	Huawei	40GE OTN Support Consideration	malpass_02_1107.pdf
10:40 AM			Break	

Note – Order of presentations and times listed are subject to change.

Presentations – Wednesday (Fiber Track)

Time	Presenter	Affiliation	Title	File Name
11:00 AM	Paul Kolesar	CommScope	Next generation MMF specs in TIA and ISO	kolesar_01_1107.pdf
11:25 AM	Robert Lingle	OFS	10G transmission over OM3 MMF with relaxed TOSA specifications	sun_01_1107.pdf
12:00 PM Lunch				
1:30 PM	Karim Tatah	Cray	100 Gb/s Active Optics Cables	tatah_01_1107.pdf
1:50 PM	Pete Anslow	Nortel	Single Mode Fibre Skew Variation and Link Models	anslow_02_1107.pdf
2:15 PM	Mike Shahine	Ciena	100GbE Components for SMF Reaches	shahine_01_1107.pdf
2:45 PM	Hideki Isono	Fujitsu	Feasibility Study for 25Gb/s10km Transmission Using DML	isono_01_1107.pdf
3:05 PM	Matt Traverso	Opnext	SMF 1310nm PMD Link	traverso_01_1107.pdf
3:25 PM Break				
3:45 PM	Marcus Duelk	Alcatel-Lucent	Analysis of 4x25-Gb/s 40-km 1310-nm PMD with SOA Pre-Amplifier	gutierrez_01_1107.pdf
4:15 PM	Marcus Duelk	Alcatel-Lucent	Using SOAs as Booster and/or Pre-amplifier for 4x25Gb/s 40-km 1310-nm PMD	gutierrez_02_1107.pdf
4:40 PM	Marcus Duelk	Alcatel-Lucent	4x25-Gb/s 40-km 1310-nm PMD with SOA Pre-Amplifier: Impact of Channel Spacing	gutierrez_03_1107.pdf
5:05 PM	Kengo Matsumoto	Sumitomo Electric Industries, LTD.	WDM Alternatives for 100GE 40km SMF application	matsumoto_01_1107.pdf
5:35 PM	Ted Woodward	Telecordia	A Use Case for Short Haul Metro WDM Related to 40 km PHY Definition	woodward_01_1107.pdf
6:00 PM Break				

Note – Order of presentations and times listed are subject to change.

Presentations – Wednesday (Cu Track)

Time	Presenter	Affiliation	Title	File Name
1:30 PM	Rich Mellitz	Intel	40 GbE Over 4-lane 802.3ap Compliant Backplane	mellitz_01_1107.pdf
2:00 PM	Hiroshi Takatori	Phycore	10GBASE-KR for 40G Backplane	takatori_01_1107.pdf
2:30 PM	Chris DiMinico	MC Communications	Considerations for HSSG Cu cable assembly interconnect specifications	diminico_02_1107.pdf
2:55 PM	Hiroshi Takatori	Phycore	40/100G Copper Feasibility	takatori_02_1107.pdf
3:25 PM			Break	
3:45 PM	Ali Ghiasi	Broadcom	Higher Speed Copper Operation	ghiasi_02_1107.pdf
4:15 PM	Gourgen Oganessyan	Quellan	Considerations for Active Cables for Higher Speed Ethernet	oganessyan_01_1107.pdf
4:35 PM	Dr. Mohsen Kavehrad	Penn State Univ.	Towards 100G over 100 Meters of CAT-7	kavehrad_01_1107.pdf

Note – Order of presentations and times listed are subject to change.

Presentations – Thursday (SG)

Time	Presenter	Affiliation	Title	File Name
8:30 AM	John D'Ambrosia	Force10 Networks	Fiber Track Report	dambrosia_01_1107.pdf
8:45 AM	TBD		Cu Track Report	TBD
9:00 AM	Radha Nagarajan	Infinera	Photonic Integration Considerations for the 100GbE SMF PHYs	nagarajan_01_1107.pdf
9:25 AM	Chris DiMinico	MC Communications	Network Topologies and Distances	diminico_01_1107.pdf
9:50 AM	Chris Cole	Finisar	Optical Link Budget Implications for 10km SMF Reach Objective	cole_01_1107.pdf
10:20 AM	Joel Goergen	Force10 Networks	Support for the 10km Objective	goergen_01_1107.pdf
10:40 AM			Break	
11:00 AM			Motions and Closing Business	
12:00 PM			Adjourn	

Note – Order of presentations and times listed are subject to change.

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:
 - Complete and current contact information recorded in the Working Group 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 one 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
 - Maintain Complete and current contact information in the Working Group 802.3 database.
 - Have 75% attendance during at least two of the last four plenaries
 - Attendance at an interim can substitute for attendance at no more than 1 plenary
 - Participate in Working Group ballots.
 - You can be dropped for lack of participation !

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

Future Meetings

- January 2008 Interim
 - Wed – Fri, Jan 23 - 25
 - Portland, OR
- March 2008 Plenary
 - Tuesday – Thursday, March 18 – 20
 - Caribe Royale Orlando All Suites Resort and Convention Center
 - Orlando, FL, USA



Thank You!

