




IEEE 802.3 Higher Speed Study Group

Agenda and General Information

San Francisco, CA
July, 2007



Agenda – Interim (July 16)

- Welcome and Introductions
- Appoint/Volunteer Recording Secretary
- Approve Agenda
- Approve Meeting Minutes
- Ground Rules
- Reflector and Web
- IEEE
 - Structure
 - Bylaws and Rules
 - Call for Patents
 - IEEE Standards Process
- Presentation

Agenda – Plenary (July 17 -19)

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

IEEE 802.3 HSSG Organization

- Study Group Chair:
 - John D'Ambrosia (jdambrosia@force10networks.com)
- 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 this Week

- Hear presentations related to Objectives, PAR(s) and 5 Criteria

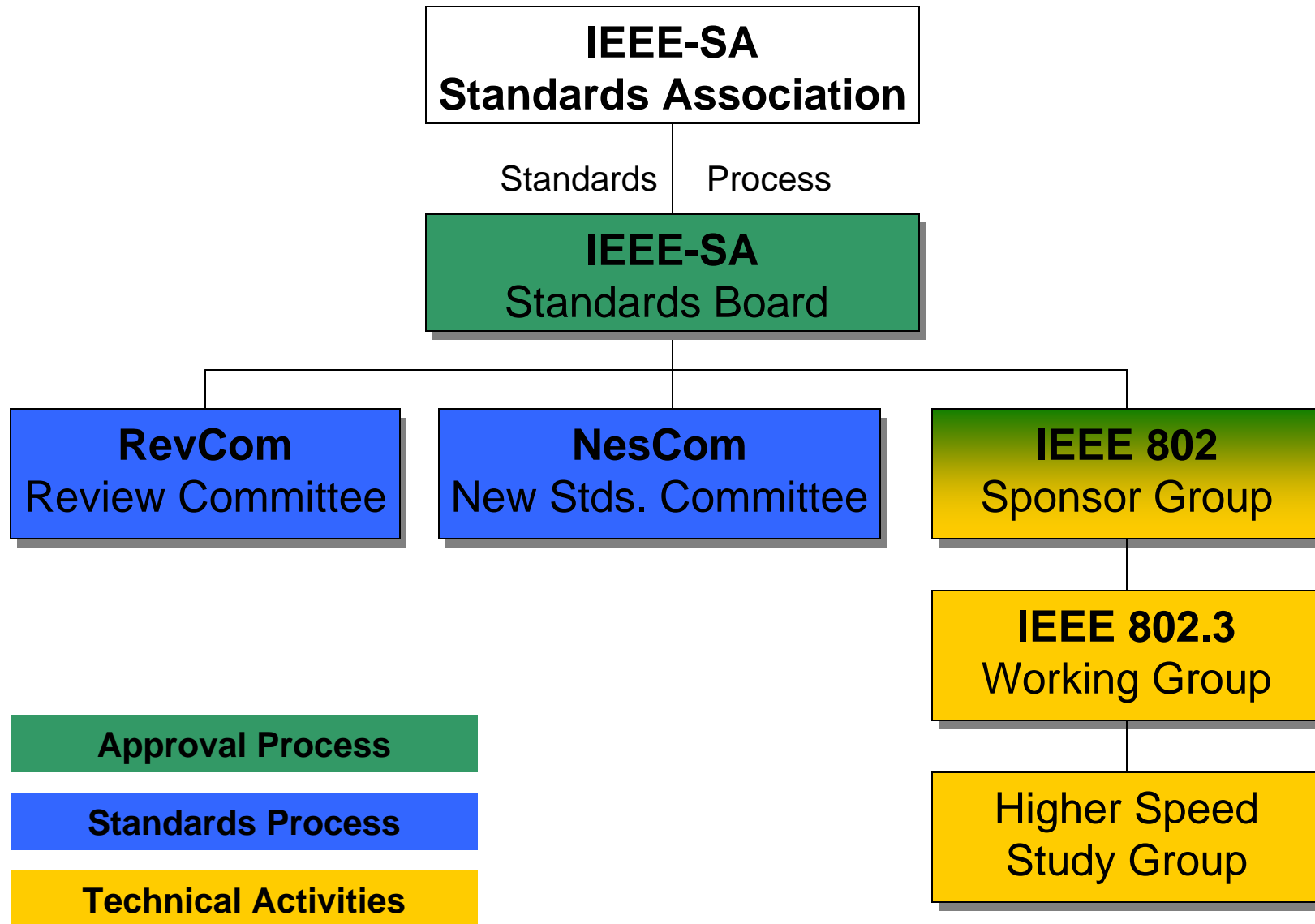
- Finalize:
 - HSSG Objectives
 - Number of recommended PAR

- Project Authorization Requests
 - Completion and Approval of “PAR A”
 - Project Authorization Request
 - 5 Criteria Responses
 - If there is new PAR, complete and approve :
 - Project Authorization Request (PAR)
 - 5 Criteria Responses

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.

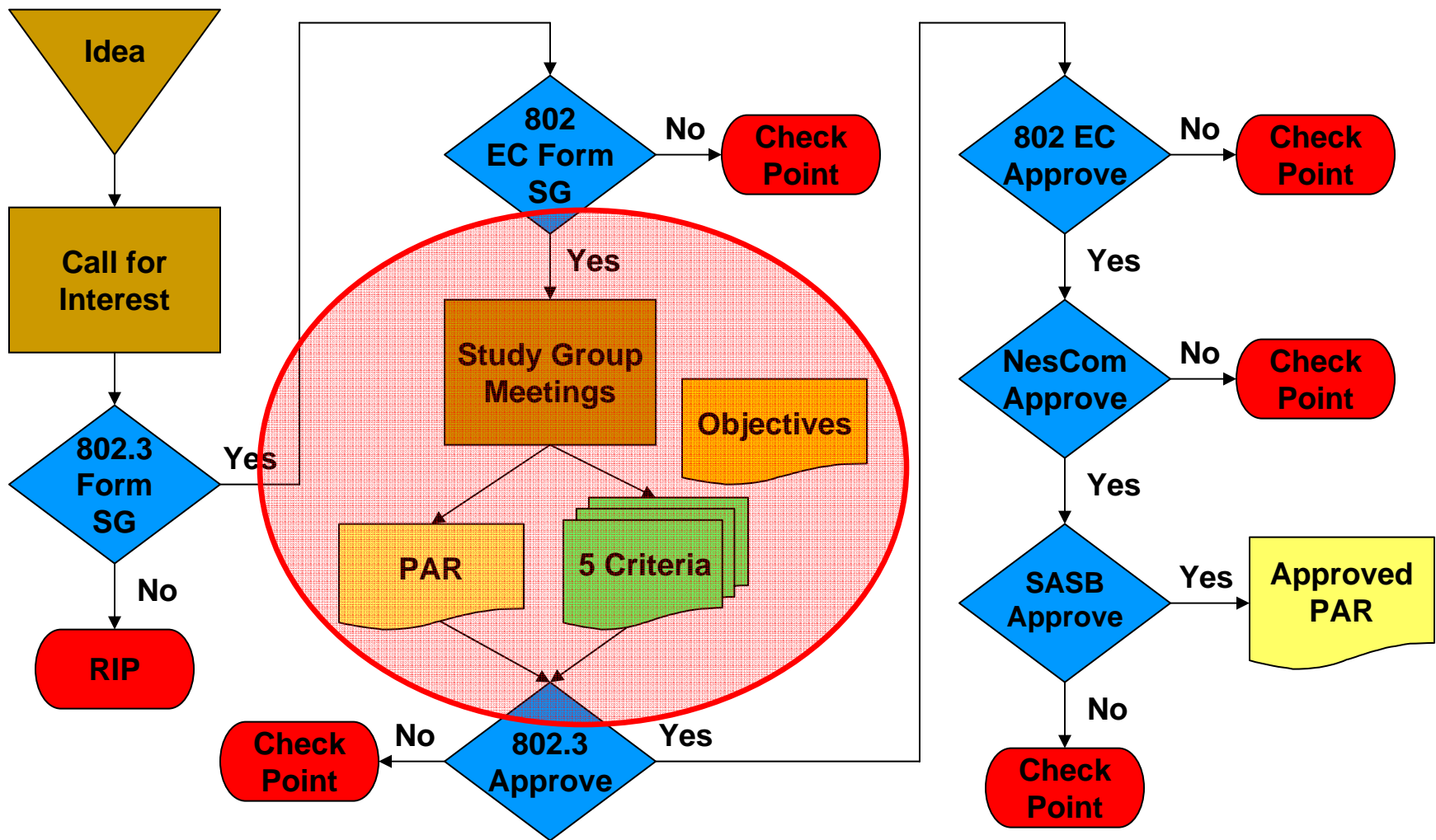
This slide set is available at <http://standards.ieee.org/board/pat/pat-slideset.ppt>

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

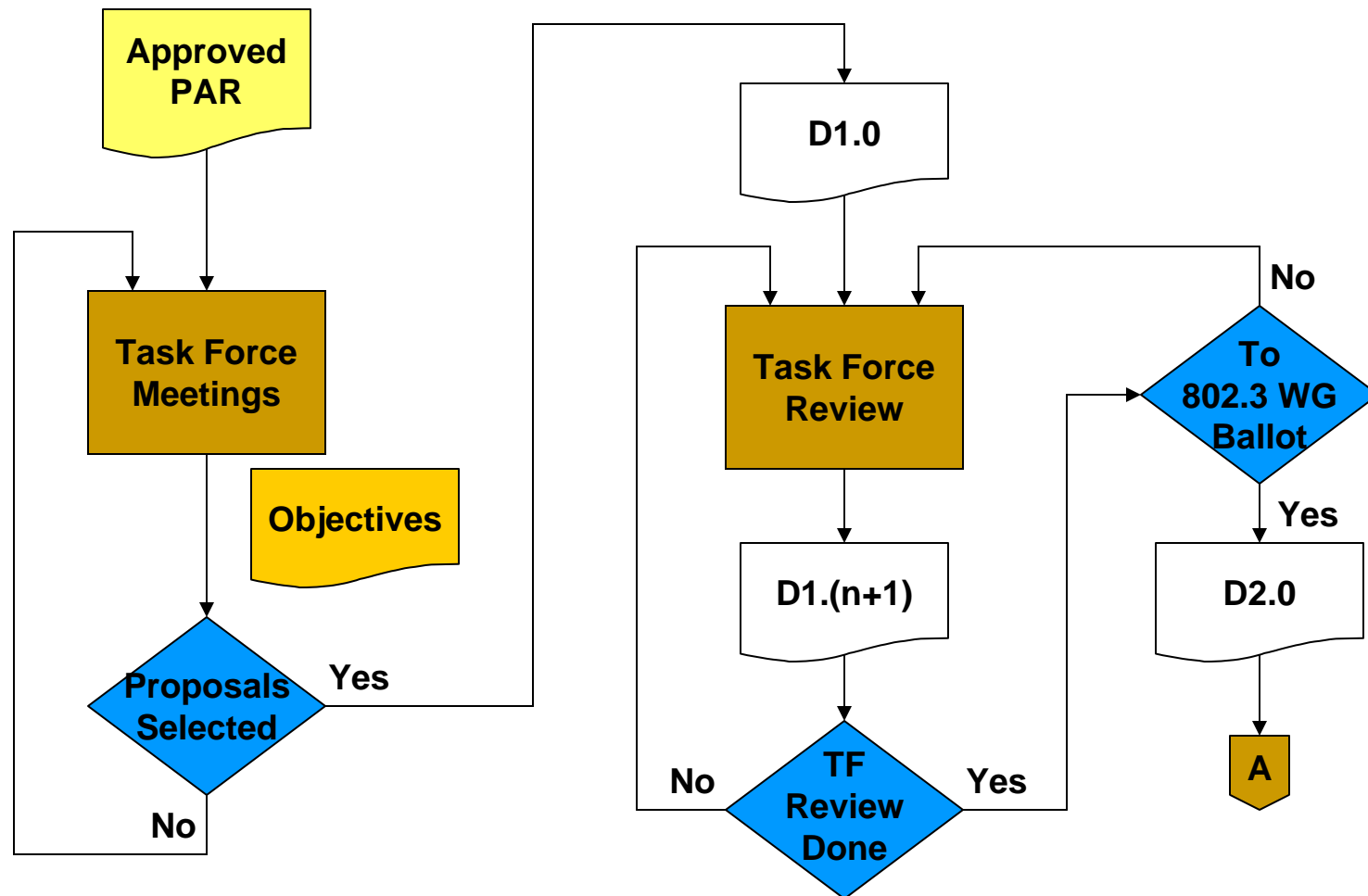
- Not a goal – choosing a solution.

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

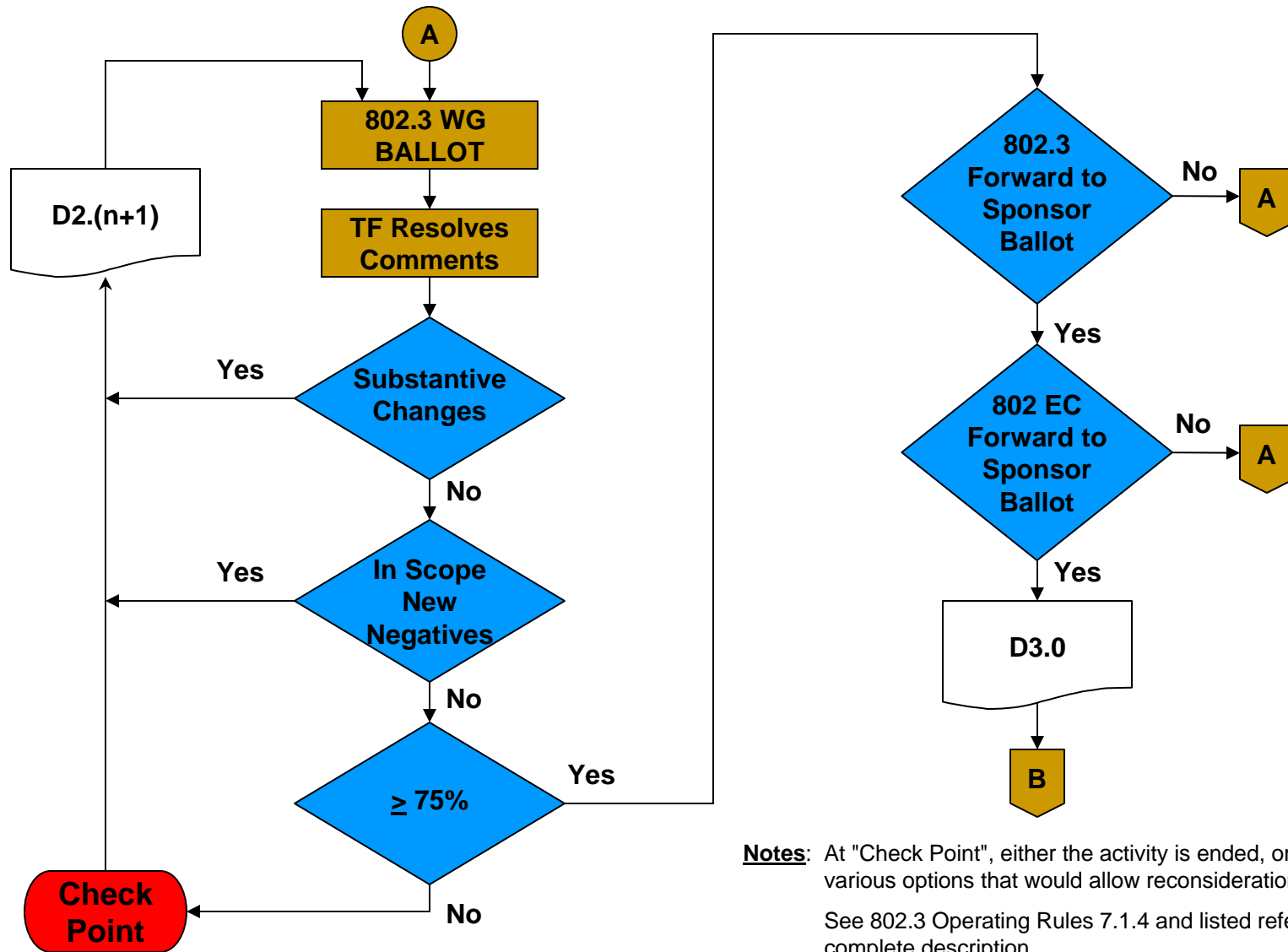


Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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

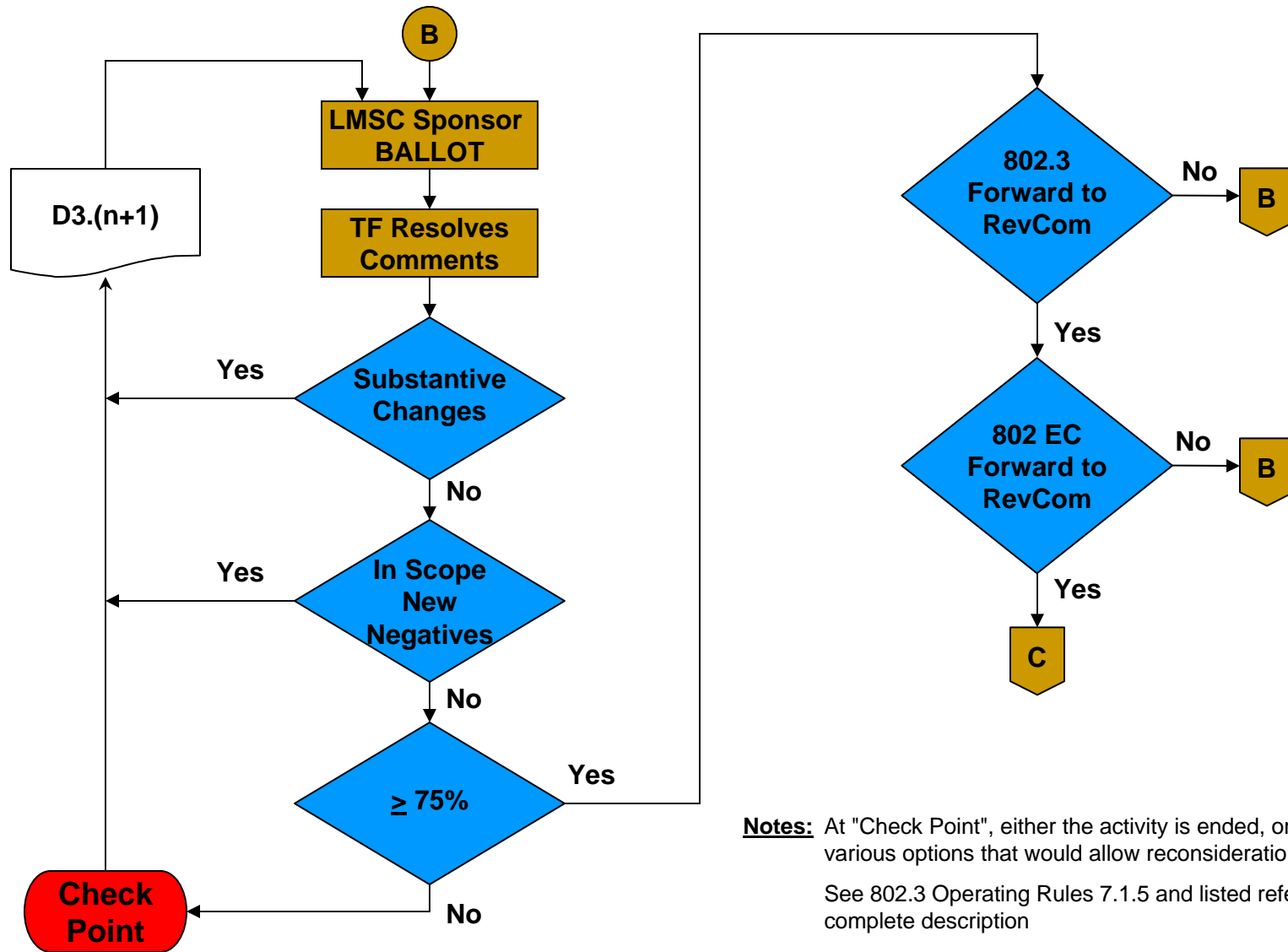


Overview of IEEE 802.3 Standards Process (3/5) - Working Group Ballot Phase



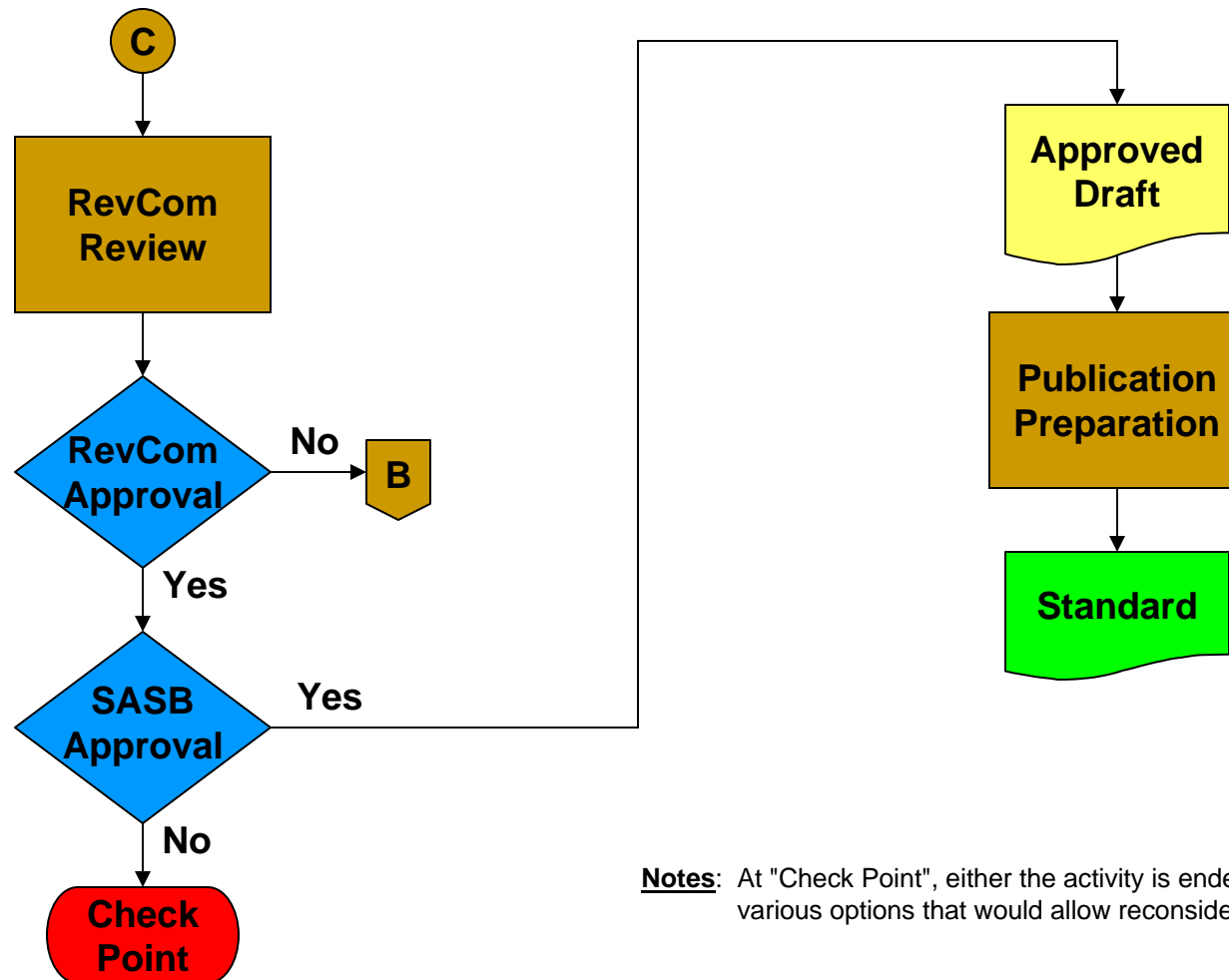
Notes: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval. See 802.3 Operating Rules 7.1.4 and listed references for complete description

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.

Request for Formation of HSSG (as per July '06 Plenary Motion)

Move the IEEE 802.3 Working Group requests formation of a “Higher Speed Study Group” to evaluate definition of greater than 10 Gb/s MAC data rate and related PHY capability to IEEE Std 802.3. The Study Group may recommend one or more PARs.

HSSG Objectives

- Support full-duplex operation only (approved 11/16/06: All 73/0/4)
- Preserve the 802.3 / Ethernet frame format at the MAC Client service interface (approved 11/16/06: All 76/0/4)
- Preserve minimum and maximum FrameSize of current 802.3 Std (approved 11/16/06: All 74/0/4)
- Support a speed of 100 Gb/s at the MAC/PLS interface (approved 11/16/06: All 67/9/14, 802.3 26/4/11)
- Support at least 10km on SMF. (approved 11/16/06: All 86/0/4, 802.3 40/0/4)
- Support at least 100 meters on OM3 MMF. (approved 11/16/06, All 61/3/27, 802.3 33/2/13)
- Support a BER better than or equal to 10^{-12} at the MAC /PLS service interface. (approved 1/19/07, All 68/0/4).
- Support at least 40-km on SMF. (approved 1/19/07, All 38/10/32, 802.3 12/6/16).
- To support at least 10m over a copper cable assembly. (approved 4/19/07, All 51/0/15, 802.3 23/0/7)

Updated Apr 21, 2007

HSSG PAR A

- Objectives ([http://grouper.ieee.org/groups/802/3/hssg/PAR-A/HSSG PAR A Objectives 0407.pdf](http://grouper.ieee.org/groups/802/3/hssg/PAR-A/HSSG_PAR_A_Objectives_0407.pdf))
 - Support full-duplex operation only
 - Preserve the 802.3 / Ethernet frame format at the MAC Client service interface
 - Preserve minimum and maximum FrameSize of current 802.3 Std
 - Support a speed of 100 Gb/s at the MAC/PLS interface
 - Support at least 10km on SMF.
 - Support at least 100 meters on OM3 MMF.
 - Support a BER better than or equal to 10^{-12} at the MAC /PLS service interface.
 - Support at least 40-km on SMF.
 - To support at least 10m over a copper cable assembly.

- PAR – Working Draft
 - [http://grouper.ieee.org/groups/802/3/hssg/PAR-A/HSSG PARA PAR WD 0507.pdf](http://grouper.ieee.org/groups/802/3/hssg/PAR-A/HSSG_PARA_PAR_WD_0507.pdf)

- Critters – Working Draft
 - [http://grouper.ieee.org/groups/802/3/hssg/PAR-A/HSSG PARA 5C WD 0407.pdf](http://grouper.ieee.org/groups/802/3/hssg/PAR-A/HSSG_PARA_5C_WD_0407.pdf)

Meeting Map

	Mon	Tues	Wed	Thur	Fri		
8:00	SEC						
8:30							
9:00		HSSG Interim	HSSG Presentations	HSSG Discussion & Motions	HSSG Discussions, Motions, Closing		
9:30							
10:00							
10:30	802.0 Plenary						
11:00	Lunch		Lunch	Lunch			
11:30			(1:15PM)	(1:15PM)			
12:00	802.3 Plenary		HSSG Presentations	HSSG Discussion & Motions	802.3 Plenary		
12:30						SEC	
13:00							
13:30							
14:00							
14:30							
15:00	Dinner		Dinner	Dinner			
15:30	Tutorial #1		Tutorial #3	Social			
16:00	Tutorial #2		Tutorial #4				
16:30							
17:00							
17:30							
18:00							
18:30							
19:00							
19:30							
20:00							
20:30							
21:00							
21:30							

Monday, July 16

Time	Presenter	Affiliation	Title	File Name
9:00 AM			Agenda and General Information	agenda_01_0707.pdf
9:30 AM	John D'Ambrosia		Moving Forward	dambrosia_01_0707.pdf
10:30 AM			Adjourn	

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

Presentations – Tuesday, July 17

Time	Presenter	Affiliation	Title	File Name
9:00 AM			Agenda and General Information	agenda_01_0707.pdf
9:25 AM	Pete Anslow	Nortel	ITU Liaison	
9:35 AM	Lew Aronson Chris Cole	Finisar	Technical Feasibility of 4x10G and 10x10G Electrical Interfaces	aronson_01_0707.pdf
10:05 AM	Ali Ghiasi	Broadcom	Advantage of Linear Interface for 4x and 10x Links	ghiasi_01_0707.pdf
10:30 AM			Break	
10:50 AM	Ali Ghiasi	Broadcom	Higher Speed Copper Operation	ghiasi_02_0707.pdf
11:15 AM	Craig Hornbuckle	Sierra Monolithics	A PMA Interface for 100GE Long-Reach Transport Systems	hornbuckle_01_0707.pdf
11:35 AM	Robert Hays	Intel	40G PHY Options	hays_01_0707.pdf
12:00 PM			Lunch	
1:15 PM	Paul Kolesar	Systimax	Cost analysis of 40G & 100G MMF variants, an update of kolesar_01_0507	kolesar_01_0707.pdf
1:35 PM	Ilango Ganga	Intel	Link Aggregation in Server End Stations	ganga_01_0707.pdf
2:00 PM	Scott Kipp	Brocade	SAN and NAS Bandwidth Requirements	kipp_01_0707.pdf
2:25 PM	Robert Winter	Dell	Server Use Cases for 40GE and 100GE	winter_01_0707.pdf
2:55 PM	Marcus Duelk Steve Trowbridge	Alcatel-Lucent	40 GbE Transport	duelk_01_0707.pdf
3:10 PM	Steve Trowbridge	Alcatel-Lucent	How can 40 Gb Ethernet be designed to fit existing ODU3 transport?	trowbridge_01_0707.pdf
3:25 PM			Break	
3:45 PM	Ralf-Peter Braun	Deutsche Telekom	40GE/100GE - network Operator's View	braun_01_0707.pdf
4:05 PM	Ted Woodward	Telecordia	Survey of Operators on 40 GE longer distance transport	woodward_01_0707.pdf
4:20 PM	Dan Dove	Dove Networking	Two Par Proposal	dove_01_0707.pdf
4:40 PM	Robert Hays Gary Nicholl	Intel Cisco	Proposal for HSSG Objectives	hays_02_0707.pdf
5:00 PM	Howard Frazier Mark Nowell	Broadcom Cisco	HSSG PAR Proposal	frazier_01_0707.pdf
5:30 PM	John Jaeger Ilango Ganga	Infinera Intel	Proposal for 5 Criteria Responses	jaeger_01_0707.pdf
5:55 PM			Discussion & Motions	

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

Wednesday - Thursday, July 18 - 19

Wednesday 18-Jul-07

Time	Presenter	Affiliation	Title	File Name
9:00 AM			Discussion & Motions	
10:30 AM			Break	
10:50 AM			Discussion & Motions	
12:00 PM			Lunch	
1:15 PM			Discussion & Motions	
3:30 PM			Break	
3:50 PM			Discussion & Motions	
6:00 PM			Break	

Thursday 19-Jul-07

Time	Presenter	Affiliation	Title	File Name
9:00 AM			Discussion, Motions, & Closing Business	
10:30 AM			Break	
10:50 AM			Discussion, Motions, & 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

- September 2007 Interim
 - Tuesday through Thursday, September 11 – 13
 - Hotel details to be forwarded.
 - Seoul, Korea
- November 2007 Plenary
 - Tuesday through Thursday, Nov 13 – 15
 - Hyatt Regency Atlanta
 - Atlanta, Ga, USA



Thank You!

