



# IEEE 802.3 Higher Speed Study Group

## Agenda and General Information

Monterey, CA  
January 2007



# Agenda

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

# 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.

# IEEE 802.3 HSSG Organization

- Study Group Chair:
  - John D'Ambrosia ([jdambrosia@force10networks.com](mailto:jdambrosia@force10networks.com))
- Web Master
  - Frank Chang ([ychang@vitesse.com](mailto:ychang@vitesse.com))
  
- “Reach” Ad Hoc Chair
  - Andy Moorwood ([amoorwood@extremenetworks.com](mailto:amoorwood@extremenetworks.com))
- “Fiber Optic” Ad Hoc Chair
  - Dan Dove ([dan.dove@hp.com](mailto:dan.dove@hp.com))

# Goals for this Meeting

- Hear presentations related to objectives and 5 Criteria
- Finalize HSSG Objectives
- Finalize number of recommended PAR
- Start developing consensus on:
  - Project Authorization Request (PAR)s
  - 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

# Reflector and Web

- To subscribe to the HSSG reflector, send an email to:

[\*ListServ@ieee.org\*](mailto:ListServ@ieee.org)

with the following in the body of the message (do not include “<>”):

*subscribe stds-802-3-hssg <yourfirstname> <yourlastname>  
end*

- Send HSSG reflector messages to:

[\*STDS-802-3-HSSG@listserv.ieee.org\*](mailto:STDS-802-3-HSSG@listserv.ieee.org)

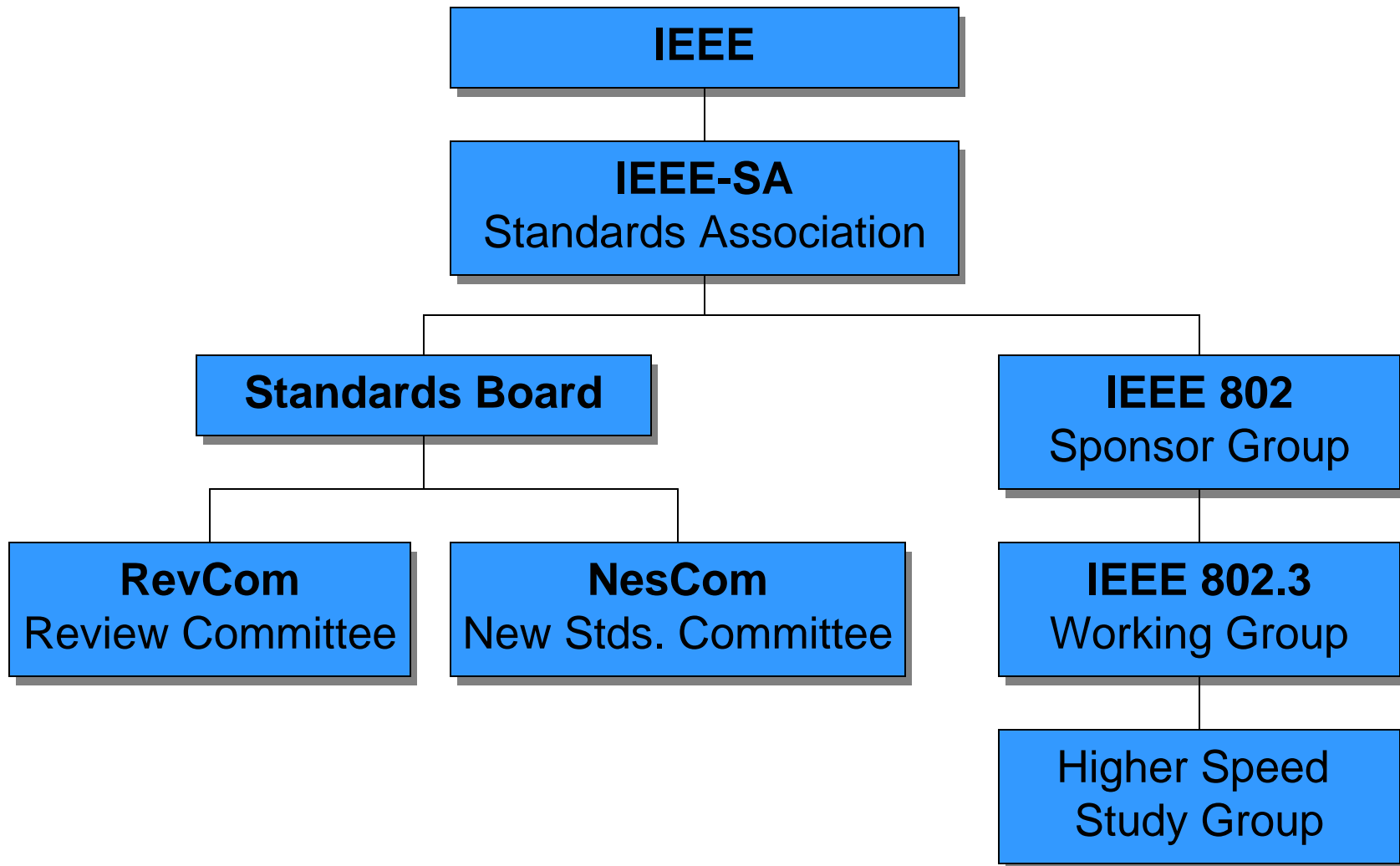
- For complete instructions on reflector usage, subscription, and unsubscription:

[\*http://www.ieee802.org/3/hssg/reflector.html\*](http://www.ieee802.org/3/hssg/reflector.html)

- HSSG web page URL:

[\*http://www.ieee802.org/3/hssg/\*](http://www.ieee802.org/3/hssg/)

# 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](http://ieee802.org/3/rules/P802_3_rules.pdf)

# *IEEE-SA Standards Board Bylaws on Patents in Standards*

## **6. Patents**

IEEE standards may include the known use of essential patents and patent applications provided the IEEE receives assurance from the patent holder or applicant with respect to patents whose infringement is, or in the case of patent applications, potential future infringement the applicant asserts will be, unavoidable in a compliant implementation of either mandatory or optional portions of the standard [essential patents]. This assurance shall be provided without coercion. The patent holder or applicant should provide this assurance as soon as reasonably feasible in the standards development process. This assurance shall be provided no later than the approval of the standard (or reaffirmation when a patent or patent application becomes known after initial approval of the standard). This assurance shall be either:

- a) A general disclaimer to the effect that the patentee will not enforce any of its present or future patent(s) whose use would be required to implement either mandatory or optional portions of the proposed IEEE standard against any person or entity complying with the standard; or
- b) A statement that a license for such implementation will be made available without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination.

This 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.

Approved by IEEE-SA Standards Board – March 2003 (Revised February 2006)

# Inappropriate Topics for IEEE WG Meetings

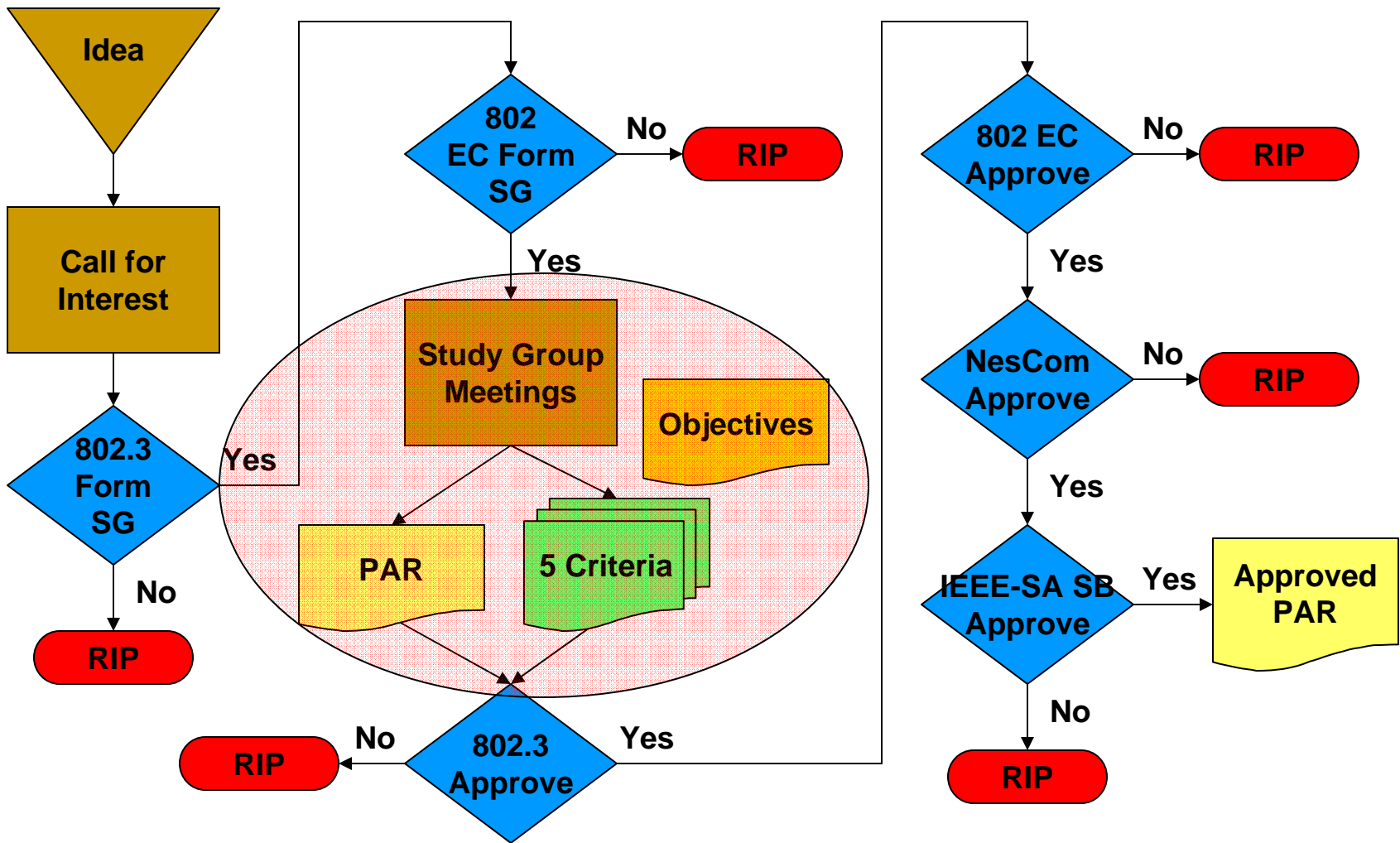
- Don't discuss the validity/essentiality of patents/patent claims
- Don't discuss the cost of specific patent use
- Don't discuss licensing terms or conditions
- Don't discuss product pricing, territorial restrictions, or market share
- Don't discuss ongoing litigation or threatened litigation
- Don't 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](mailto:patcom@ieee.org) or visit <http://standards.ieee.org/board/pat/index.html>**

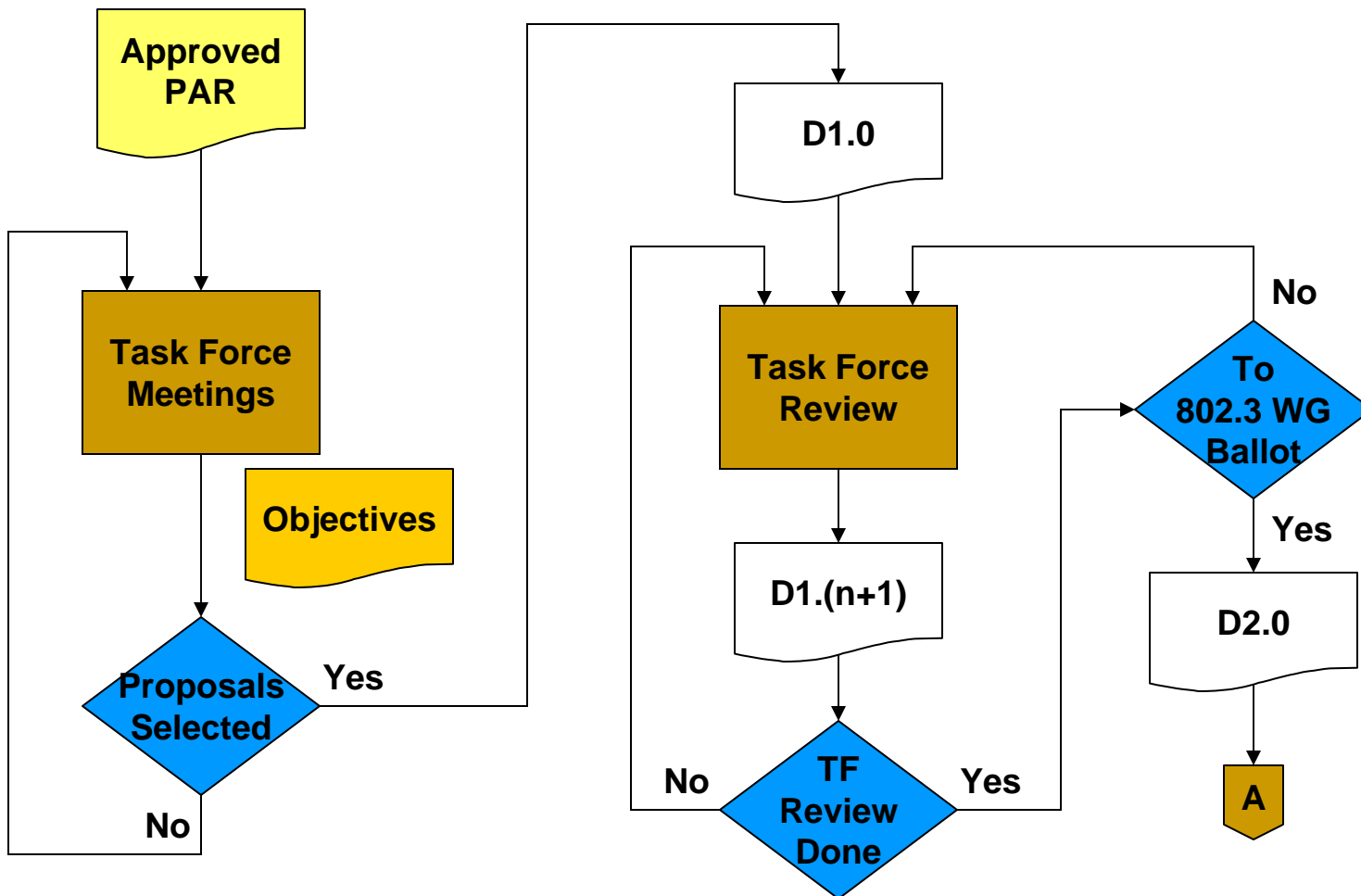
**This slide set is available at  
<http://standards.ieee.org/board/pat/pat-slideset.ppt>**

Approved by IEEE-SA Standards Board – March 2003 (Revised February 2006)

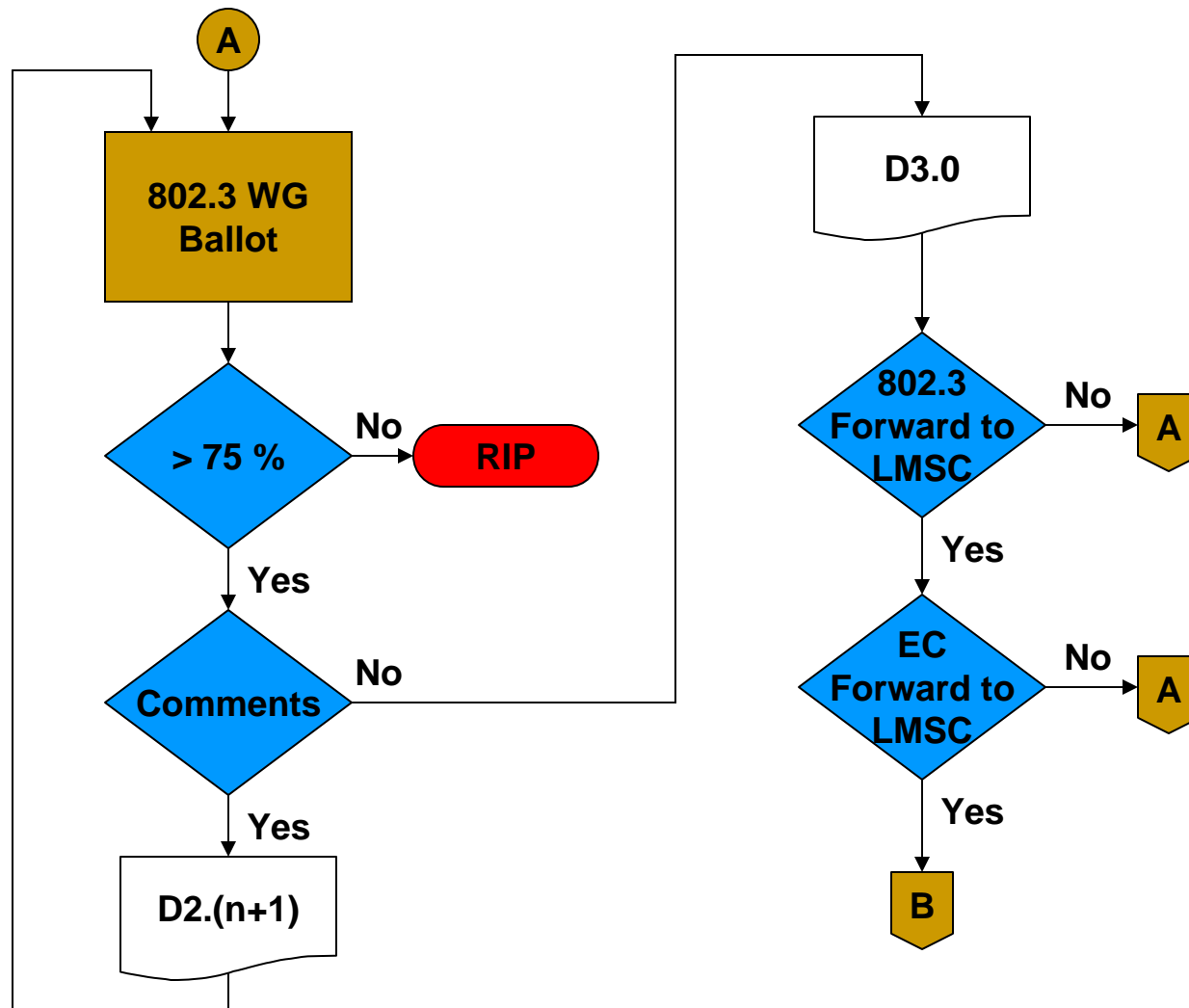
# IEEE Standards Process (1/4)



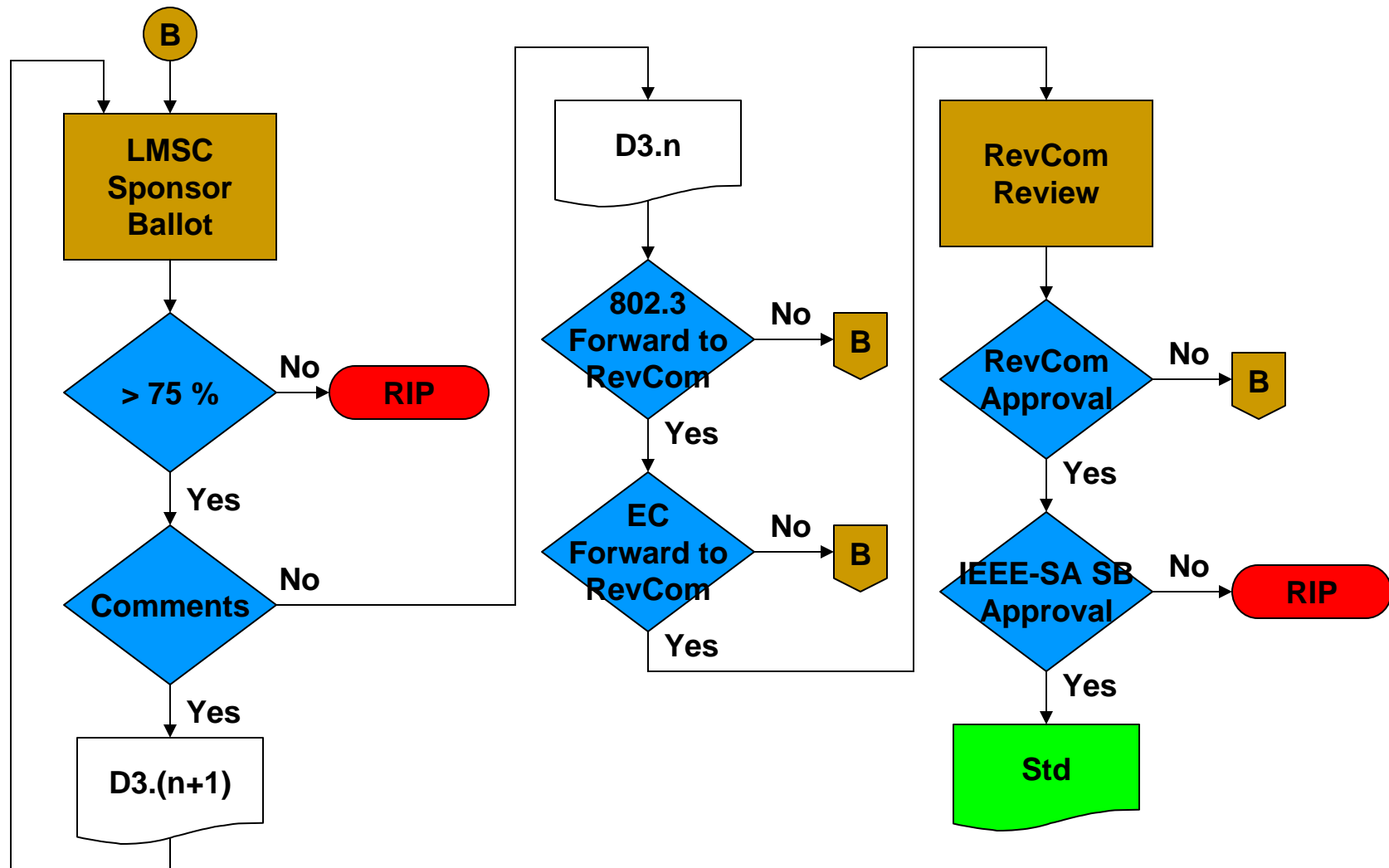
# IEEE Standards Process (2/4)



# IEEE Standards Process (3/4)



# IEEE Standards Process (4/4)



# 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 ( $\geq 75\%$ ) required to move forward
  
- Not a goal – choosing a solution.



# 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 service 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)

# PAR (Example)

- Title
  - What are we calling this
- Scope
  - The Focus – Higher Speed Ethernet
- Purpose
  - Why do we want to do this

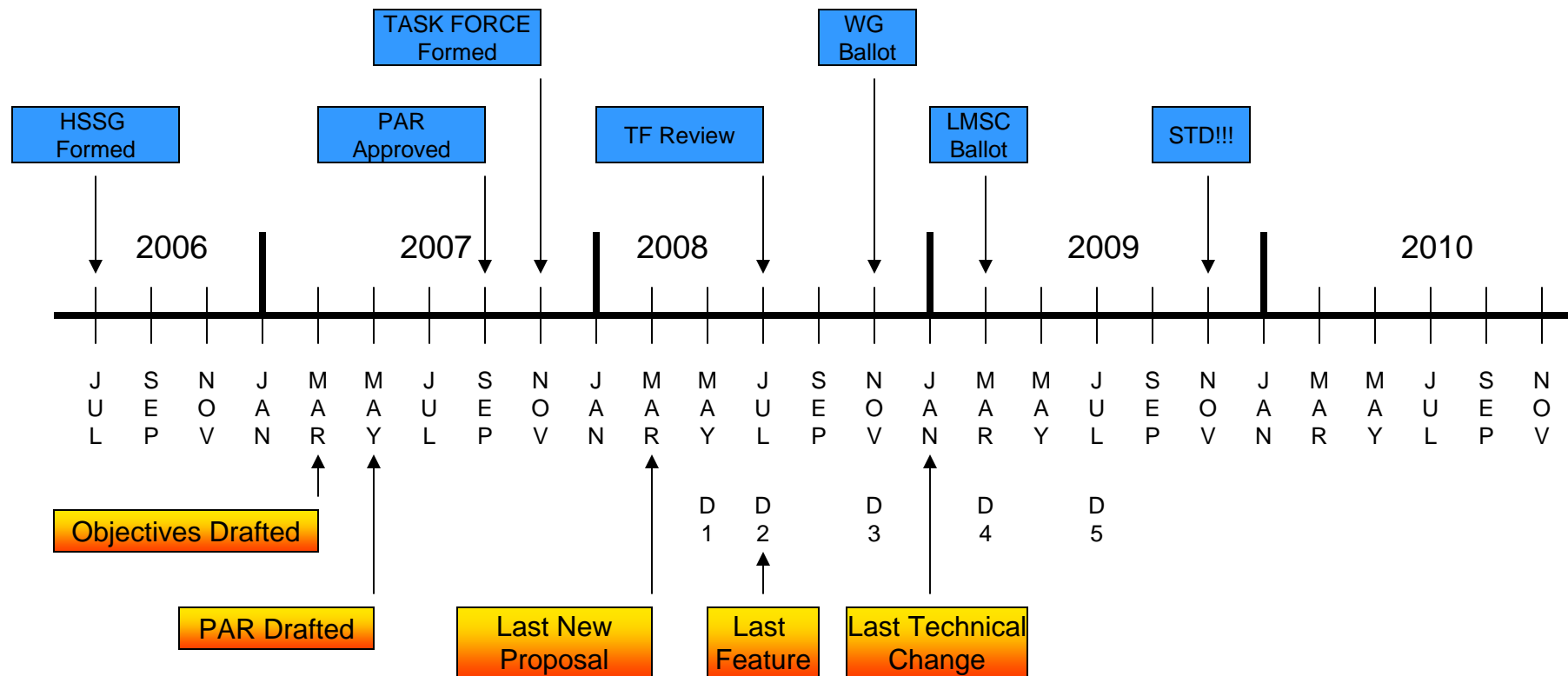
# 5 Criteria (Based on IEEE 802 LMSC Criteria)

- **Broad Market Potential**
  - Broad sets of applications
  - Multiple vendors and numerous users
  - Balanced cost (LAN versus attached stations)
- **Compatibility**
  - IEEE 802 defines a family of standards. All standards shall be in conformance with the IEEE 802.1 Architecture, Management, and Interworking documents as follows: 802.1 Overview and Architecture, 802.1D, 802.1Q, and parts of 802.1f. If any variances in conformance emerge, they shall be thoroughly disclosed and reviewed with 802. Each standard in the IEEE 802 family of standards shall include a definition of managed objects that are compatible with systems management standards
- **Distinct Identity**
  - Substantially different from other 802 standards
  - One unique solution per problem (not two solutions to a problem)
  - Easy for the document reader to select the relevant specification
- **Technical Feasibility**
  - Demonstrated system feasibility
  - Proven technology, reasonable testing
  - Confidence in reliability
- **Economic Feasibility**
  - Cost factors known, reliable data
  - Reasonable cost for performance
  - Consideration of installation costs

# Possible Study Group Schedule

- January, 2007 Interim Meeting
  - Draft Objectives
- March, 2007 Plenary Meeting
  - Complete Objectives (if not complete from Jan)
  - Draft PAR & 5 Criteria
  - Prepare for Tutorial in July
- April, 2007 Interim Meeting?
  - Complete PAR & 5 Criteria?
- May, 2007 Interim Meeting
  - Complete PAR & 5 Criteria
  - Submit draft to 802 SEC
- July, 2007 Plenary Meeting
  - Execute PAR approval process
  - 802.3 Approve PAR for forwarding to 802 SEC
  - 802 SEC approve and forward to NesCom
- August, 2007
  - Submit PAR to NesCom
- September, 2007
  - NesCom: Approve PAR
  - IEEE-SA Standards Board Approve PAR
- November 2007 Plenary Meeting
  - First official Task Force Meeting

# Possible Timeline for 1 HSE Project



# Presentations – Wednesday, 1/17

Time	Presenter	Affiliation	Title	File Name
8:30 AM			Agenda and General Information	agenda_01_1106.pdf
8:50 AM	Dan Dove	Procurve Networking by HP	Fiber Optic Ad Hoc Report	dove_01_1106.pdf
9:05 AM	Chris Cole	Finisar	Technical Feasibility of SMF & MMF 100GE Transceivers	cole_01_0107.pdf
9:40 AM	Paul Kolesar	Commscope Enterprise Solutions	Cost Analysis of MMF Variants	kolesar_01_0107.pdf
10:10 AM	Break			
10:25 AM	Jack Jewell	Picolight	Parallel Optical ~10x~10G 100-Gigabit Ethernet	jewell_01_0107.pdf
10:45 AM	Petar Pepeljugoski	IBM Research	Market Potential and Technical Feasibility of 12 Channel Parallel Optical Interconnects for 802.3 HSSG	pepeljugosk_01_0107.pdf
11:10 AM	John Jaeger	Infinera	100G Ethernet Technical Feasibility & Reliability Support for DWDM SMF PHY Approaches	jaeger_01_0107.pdf
11:30 AM	Xavier Clairardin	Kotura	"Roadmap to 100GbE, a CWDM Solution"	clairardin_01_0107.pdf
12:00 PM	Lunch			
1:15 PM	Winston Way	Opvista	Spectral-efficient 100G parallel PHY in metro/regional networks	way_01_0107.pdf
1:35 PM	Robert Hartman	CyOptics	Photonic Integrated Circuit (PIC) Alternatives for 100GE	hartman_01_0107.pdf
2:00 PM	Shinji Nishimura	Hitachi	Proposal to discuss optical interface	nishimura_01_0107.pdf
2:20 PM	Thomas Schrans	Optical Communication Products, Inc.	1.5mm DMLs for 10x10Gb/s or 5x20Gb/s for links of 10km and 40km in SMF-28	schrans_01_0107.pdf
2:40 PM	Milind Gokhale	Apogee Photonics	20 and 26 Gbps uncooled 1310nm EMLs for 100 GbE applications	gokhale_01_0107.pdf
3:10 PM	Salah Khodja	APIC	100GbE Silicon Photonics Platform	khodja_01_0107.pdf
3:30 PM	Break			
3:50 PM	Peter Winzer	Alcatel-Lucent	Reliability considerations for inverse-multiplexed 100G Ethernet transport	winzer_01_0107.pdf
4:05 PM	Pete Anslow	Nortel	Skew and Dispersion Calculations	anslow_01_0107.pdf
4:20 PM	Thomas Fischer	Siemens	Technical and economic feasibility of a 1x100G serial LAN PHY	fischer_01_0107.pdf
4:45 PM	Marcus Duelk Chris Doerr	Alcatel-Lucent	Technical and Economic Feasibility of DQPSK Serial PMDs	duelk_01_0107.pdf
5:00 PM	Noriyuki Takeda	KDDI Labs	100Gb/s DQPSK transmission at 1300nm	takeda_01_0107.pdf
5:10 PM	Andrew Ellis	Tyndall National Institute	Comb based WDM for 100 GE applications	ellis_01_0107.pdf

# Presentations – Thursday, 1/18

Time	Presenter	Affiliation	Title	File Name
8:30 AM			Day's Opening Comments	
8:40 AM	Michael Fleischer-Reumann	Agilent	BER measurements for 100GbE	fleischer_reumann_01_0107.pdf
9:10 AM	Chris DiMinico	MC Communications	Market Potential for 100 GbE Copper	diminico_01_0107.pdf
9:35 AM	Joel Goergen	Force10 Networks	A 40km PMD Objective	goergen_01_0107.pdf
10:00 AM	Steve Trowbridge	Alcatel-Lucent	"100 Gbit/s is not Enough	trowbridge_01_0107.pdf
10:10 AM	Break			
10:30 AM	Shimon Muller	Sun	HSSG Speeds and Feeds --- Reality Check	muller_01_0107.pdf
11:00 AM	Vik Saxena	Comcast Cable	Bandwidth drivers for next generation network capacity	saxena_01_0107.pdf
12:00 PM	Lunch			
1:00 PM	Ralf-Peter Braun	T-Systems	100GE - Service / Network Provider View	braun_01_0107.pdf
1:30 PM	Scott Kipp	McData	How to Make Multimode 100GigE Succeed	kipp_01_0107.pdf
2:05 PM	David Law	3COM	IEEE 802.3 HSSG 5 Criteria Strawman	law_01_0107.pdf
2:35 PM	Louise Lee	Equinix	End User Perspective on Higher Speed Ethernet	lee_01_0107.pdf
2:55 PM	Hugh Barass	Cisco	100g Technical Feasibility	barrass_01_0107.pdf
3:30 PM	Break			
3:50 PM	Med Belhadj	Cortina Systems	More on the feasibility of a 100G MAC	belhadj_01_0107.pdf
4:10 PM	Mark Gustlin	Cisco	The Technical Feasibility of a 100GE PCS and Electrical Interface	gustlin_01_0107.pdf
4:35 PM	Alessandro Barbieri	Cisco	Economics and market drivers behind the adoption of Higher Speed Ethernet Technologies	barbieri_01_0107.pdf
5:05 PM			Discussion	

# Friday, 1/19

8:30 AM			Day's Opening Comments
9:00 AM			Discussion & Motions
10:15 AM	Break		
10:35 AM			Discussion & Motions (continued)
12:00 PM	Lunch		
1:30 PM			Discussion & Motions (continued)
3:30 PM	Break		
3:50 PM			Discussion, Motions, and Closing Business
6:00 PM	Adjourn		



# Future Meetings

- **March 2006 Plenary**
  - March 11 -16, 2007
  - Orlando, Fl
  - Caribe Royale
  
- **April 2007 Interim**
  - Tentative Date – April 17 – 19 or April 24 – 26, 2007
  - Ottawa, Canada
  
- **May 2007 Interim**
  - May 28 – 31, 2007
  - ITU, Geneva, Switzerland



Thank You!

