



IEEE 802.3 Higher Speed Study Group

Agenda and General Information

Knoxville, TN
September 2006

John D'Ambrosia
jdambrosia@force10networks.com



Agenda

- Welcome and Introductions
- Appoint/Volunteer Recording Secretary
- Confirmation of Chair
- Goals for this Meeting
- Reflector and Web
- Ground Rules
- IEEE
 - Structure
 - Bylaws and Rules
 - Call for Patents
 - IEEE Standards Process
- Presentations
- Discussion and Motions
- Future Meetings

Goals for this Meeting

- Hear presentations related to 5 Criteria, Goals, and Objectives
- Start developing consensus on HSSG Objectives
- Lay the ground work for the next meeting

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 “<>”):

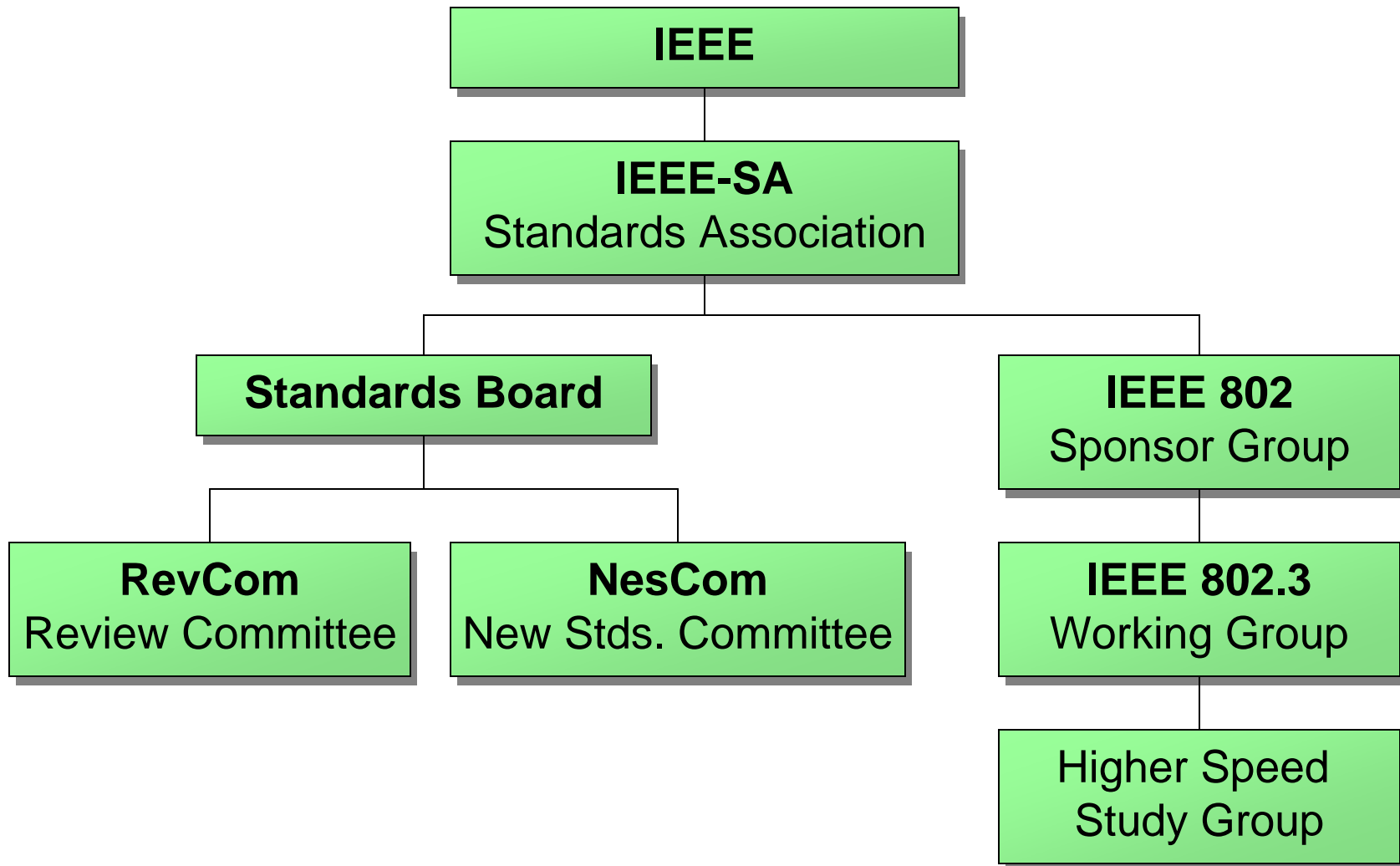
*subscribe stds-802-3-hssg <yourfirstname> <yourlastname>
end*

- 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/)

Ground Rules

- 802.3 Rules apply
 - 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 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

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

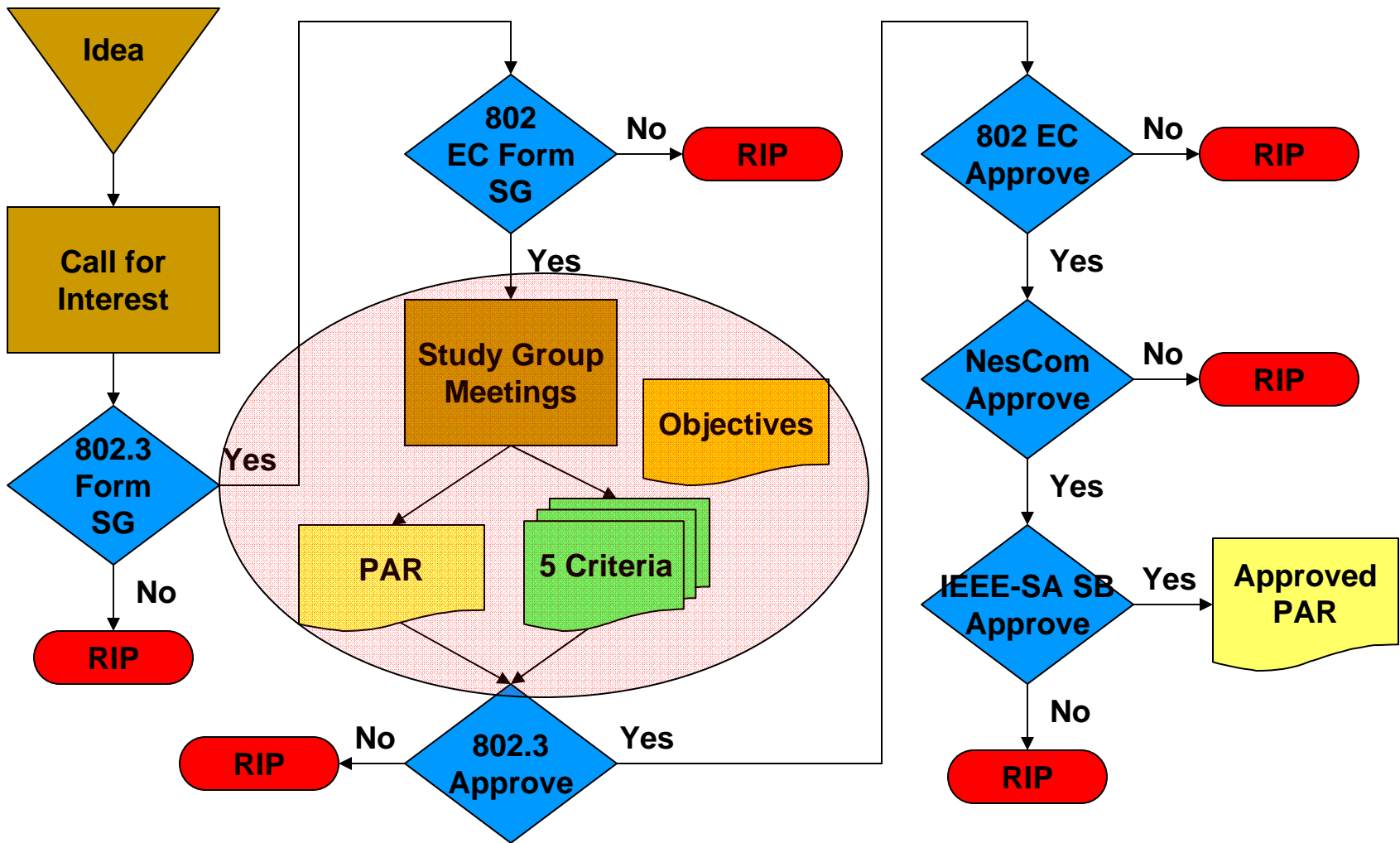
- Don't discuss the validity/essentiality of patents/patent claims
- Don't discuss the cost of specific patent use
- Don't discuss licensing terms or conditions
- Don't discuss product pricing, territorial restrictions, or market share
- Don't discuss ongoing litigation or threatened litigation
- Don't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

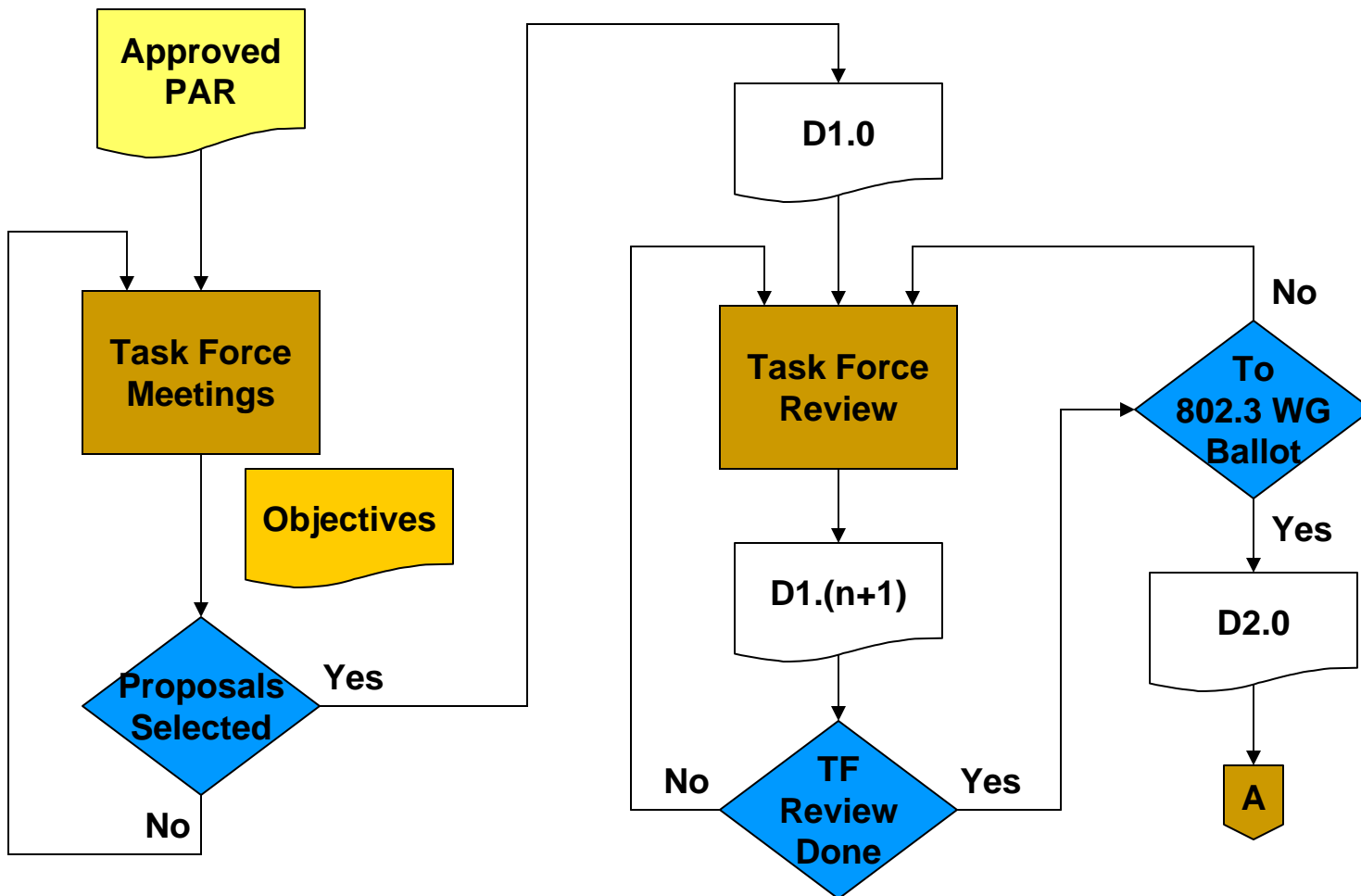
This slide set is available at
<http://standards.ieee.org/board/pat/pat-slideset.ppt>

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

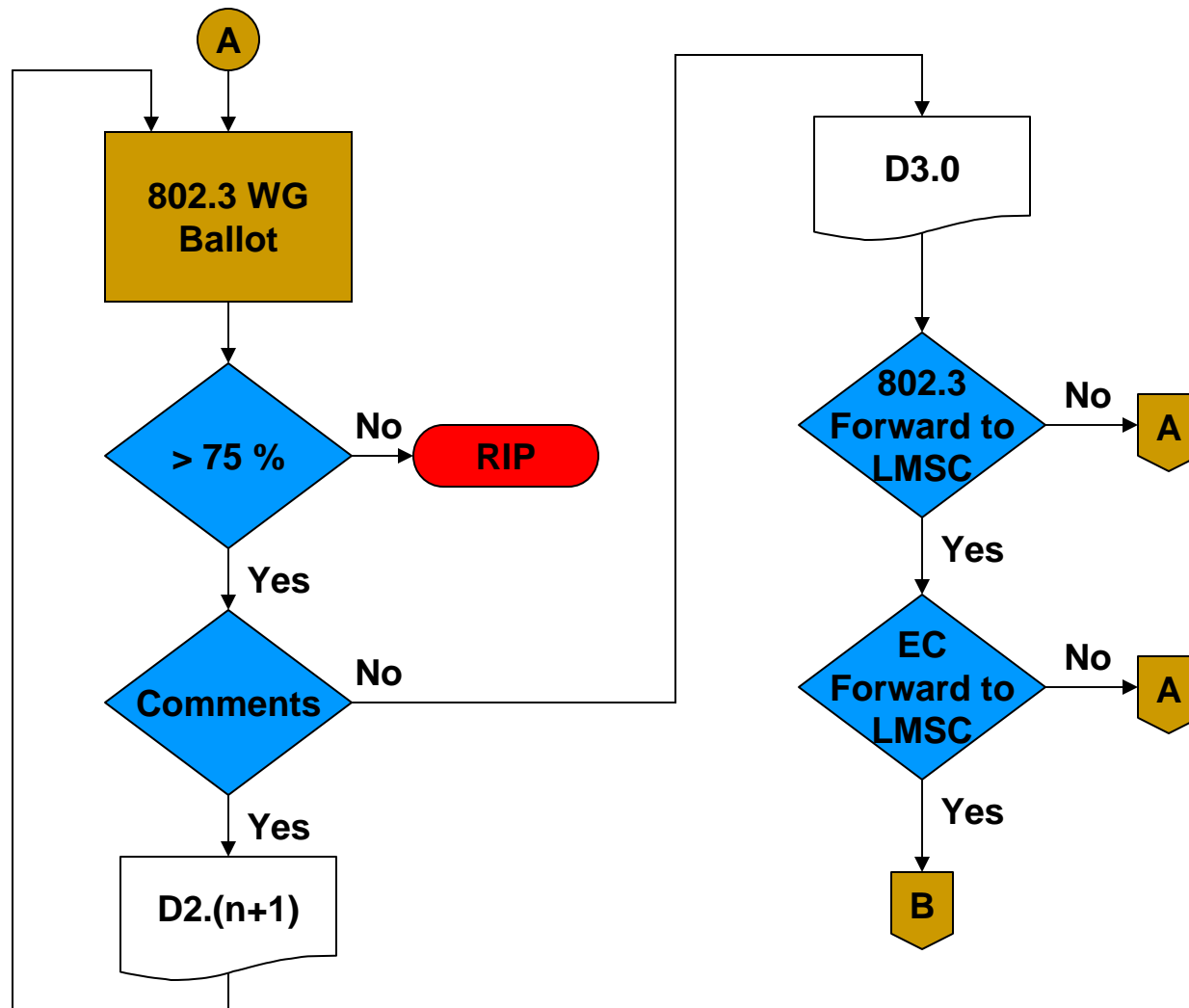
IEEE Standards Process (1/4)



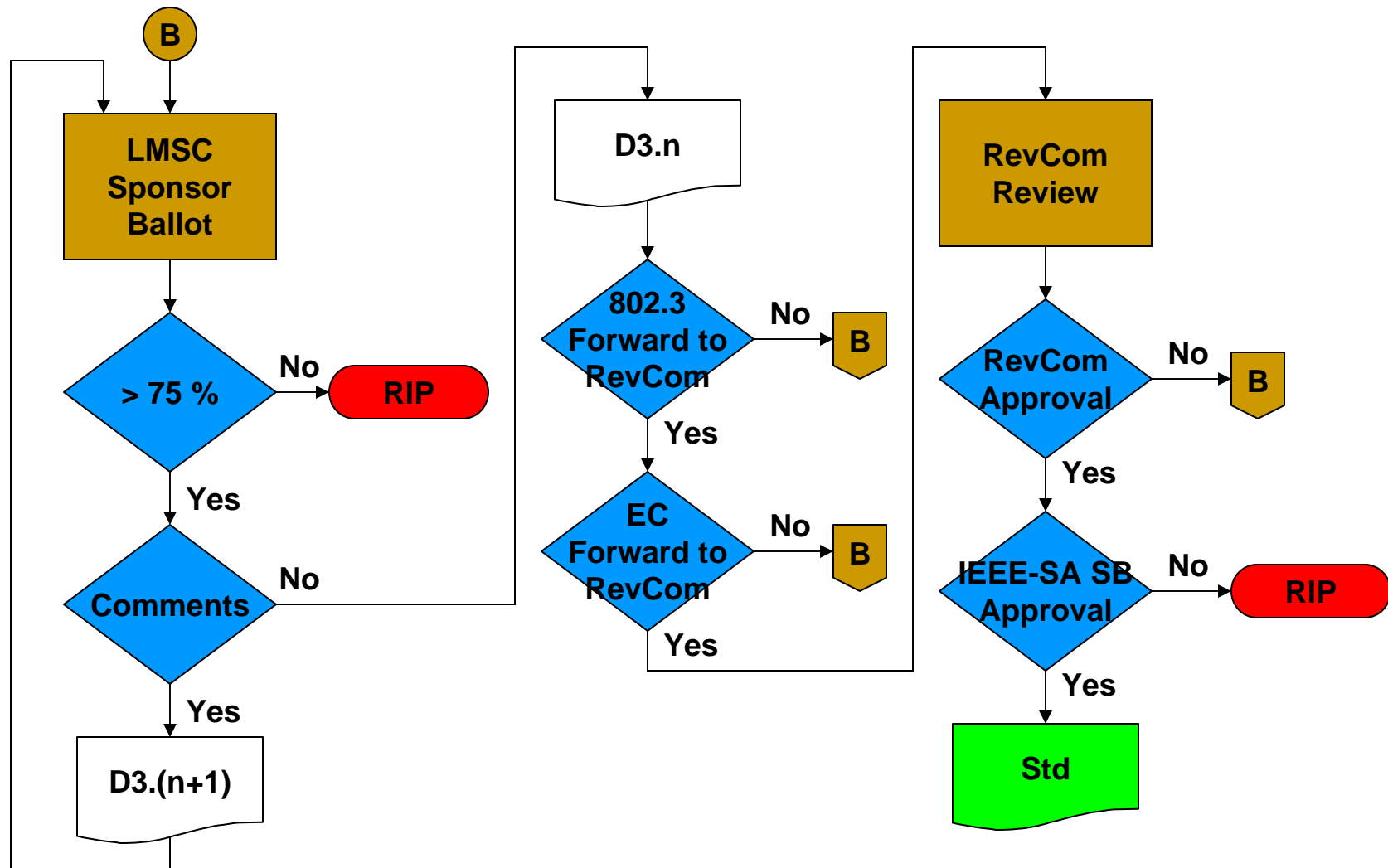
IEEE Standards Process (2/4)



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 (>75%) required to move forward

- Not a goal – choosing a solution.

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.

- ❑ Breaking new ground.
- ❑ Issues
 - Scope and objectives
 - Deciding on one or more PARs

Example - IEEE 802.3ae Objectives 1/2

- **Preserve the 802.3/Ethernet frame format at the MAC Client service interface.**
- **Meet 802 Functional Requirements, with the possible exception of Hamming Distance.**
- **Preserve minimum and maximum FrameSize of current 802.3 Std.**
- **Support full-duplex operation only.**
- **Support star-wired local area networks using point-to-point links and structured cabling topologies.**
- **Specify an optional Media Independent Interface(MII).**
- **Support proposed standard P802.3ad (Link Aggregation)**
- **Support a speed of 10.000 Gb/s at the MAC/PLS service interface**

Example - IEEE 802.3ae Objectives 2/2

- **Define two families of PHYs**
 - A LAN PHY, operating at a data rate of 10.000 Gb/s
 - A WAN PHY, operating at a data rate compatible with the payload rate of OC-192c/SDH VC-4-64c
- **Define a mechanism to adapt the MAC/PLS data rate to the data rate of the WAN PHY**
- **Provide Physical Layer specifications which support link distances of:**
 - At least 300 m over installed MMF
 - At least 65 m over MMF
 - At least 2 km over SMF
 - At least 10 km over SMF
 - At least 40 km over SMF
- **Support fiber media selected from the second edition of ISO/IEC 11801 (802.3 to work with SC25/WG3 to develop appropriate specifications for any new fiber media).**

PAR

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

5 Criteria

- Broad Market Potential
 - Broad set(s) of applications
 - Multiple vendors, multiple users
 - Balanced cost (LAN vs. attached stations)
- Compatibility with IEEE Std. 802.3
 - Conformance with CSMA/CD MAC, PLS
 - Conformance with 802.2
 - Conformance with 802 Functional Requirements
- Distinct Identity
 - Substantially different from other 802.3 specifications
 - One unique solution for problem
 - Easy for document reader to select relevant spec
- Technical Feasibility
 - Demonstrated system feasibility
 - Proven technology, reasonable testing
 - Confidence in reliability
- Economic Feasibility
 - Cost factors known, reliable data
 - Reasonable cost for performance
 - Total installation costs considered

Presentations - Wednesday, 9/20

Time	Title	File name	Presenter	Company	Duration
8:30 AM	Agenda and General Information	agenda_01_0906	John D'Ambrosia	Force10 Networks	0:30
9:00 AM	802.3 Standards Development Lessons Learned	booth_01_0906.pdf	Brad Booth	AMCC	0:30
9:30 AM	Review of the Five Criteria	frazier_02_0906.pdf	Howard Frazier	Broadcom	0:30
10:00 AM	Overview of 10G Ethernet Family	law_01_0906.pdf	David Law	3COM	0:20
10:30 AM	Break				0:20
10:50 AM	Higher Speed Ethernet An End User's Perspective	bennett_01_0906.pdf	Mike Bennett	LBNL	0:20
11:10 AM	End user perspective on Higher speed Ethernet	steenman_01_0906.pdf	Henk Steenman	AMS-IX	0:25
11:35 AM	Ethernet in the Network Service Provider	schoemaker_01_0906.pdf	Peter Schoemaker	NTT	0:20
12:00 PM	Lunch				1:30
1:30 PM	Data Center Fiber Cabling Topologies and Lengths	kolesar_01_0906.pdf	Paul Kolesar	Systemax	0:25
1:55 PM	Surveying the Industry For a Higher Speed Ethernet	bennett_02_0906.pdf	Mike Bennett	LBNL	0:15
2:10 PM	Market Drivers for 100 Gigabit Ethernet	barbieri_01_0906.pdf	Alessandro Barbieri	Cisco	0:25
2:35 PM	Objectives for HSSG	tomaszewski_01_0906.pdf	Pete Tomaszewski	Force10 Networks	0:25
3:00 PM	Break				0:30
3:30 PM	802.3 Higher Speed Study Group Objectives and Work Areas	nowell_01_0906.pdf	Mark Nowell	Cisco	0:30
4:00 PM	The Next Rate for a Higher Speed Ethernet	perkins_01_0906.pdf	Drew Perkins	Infinera	0:20
4:20 PM	Transport Ethernet Interfaces 1.5 Mbit/s to 10 Tbit/s	vissers_01_0906.pdf	Marteen Vissers (Stephen Trowbridge)	Alcatel	0:15
4:35 PM	Considerations for multi-lane implementations of higher rate Ethernet interfaces	trowbridge_01_0906.pdf	Stephen Trowbridge	Lucent	0:15
4:50 PM	Implementation Considerations	merel_01_0906.pdf	Roger Merel	Luxtera	0:20
5:10 PM	Objectives Proposal	abraham_01_0906.pdf	Menachem Abraham	Columbus Advisers	0:15

Presentations - Thursday, 9/21

Time	Title	File name	Presenter	Company	Duration
9:00 AM	Physical Layer Aggregation	frazier_01_0906.pdf	Howard Frazier	Broadcom	0:40
9:40 AM	MultiPHY Ethernet	perkins_02_0906.pdf	Drew Perkins	Infinera	0:30
10:10 AM	Proposal of PMD architectures for HSSG	nishimura_01_0906.pdf	Shinji Nishimura	Hitachi	0:20
10:30 AM	Break				0:30
11:00 AM	WDM alternatives for 100Gb SMF applications	cole_01_0906.pdf	Chris Cole	Finisar	0:30
11:30 AM	Serial PHY for Higher-Speed Ethernet	duelk_01_0906.pdf	Marcus Duelk (Stephen Trowbridge)	Lucent	0:15
12:00 PM	Lunch				1:30
1:30 PM	Discussion and Motions		All		1:30
3:00 PM	Break				0:30
3:30 PM	Discussion and Motions (Continued)		All		1:30
5:00 PM	Adjourn				

Future Meetings

- November 2006 Plenary
 - Week of November 12
 - Dallas, TX
 - Hyatt Regency Dallas
- Jan 2007 Interim
 - Date TBD
 - Location TBD

- Anyone interested in hosting a meeting should contact me.



Thank You!

