



# **IEEE P802.3an Task Force (10GBASE-T)**

**Agenda and General Information**

**Orlando, FL  
March 16, 2004**

**Brad Booth, Task Force Chair**

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# Please Put Cell Phones on Stun!!



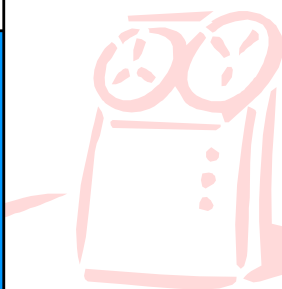
# Agenda

- Welcome
- Recording Secretary: Mike McConnell
- Introductions
- Election of Task Force Chair
- Approval of the Minutes (January '04)
- Goals for this Meeting
- Reflector and Web
- Ground Rules
- IEEE
  - Structure
  - Bylaws and Rules
  - Call for Patents
  - IEEE Standards Process
- Liaison Letters
- Presentations
- Future Meetings
- Motion Madness

# Goals for this Meeting

- **Raison d'être**
  - To develop Draft D1.0
- **Hear presentations concerning:**
  - Technical proposals for developing a baseline

# Meeting Map

	MON	TUE	WED	THU	FRI	
08:00	SEC					
08:30		P802.3an Opening	P802.3an Presentations	P802.3an Closing & Motion Madness		
09:00		P802.3an Presentations				
09:30						
10:00						
10:30	Break					
11:00	802 Plenary					
11:30						
12:00	Lunch	Lunch	Lunch	Lunch		
12:30						
13:00	802.3 Plenary	P802.3an Presentations	P802.3an Presentations	802.3 Plenary	SEC	
14:00						
14:30						
15:00						
15:30						
16:00						
16:30						
17:00						
17:30						
18:00	Dinner	Dinner	Buffer			
18:30	Tutorials	Tutorials	Social			
19:30		Data Center CFI				
20:00	EMS Tutorial					
20:30		Tutorials				
21:30						

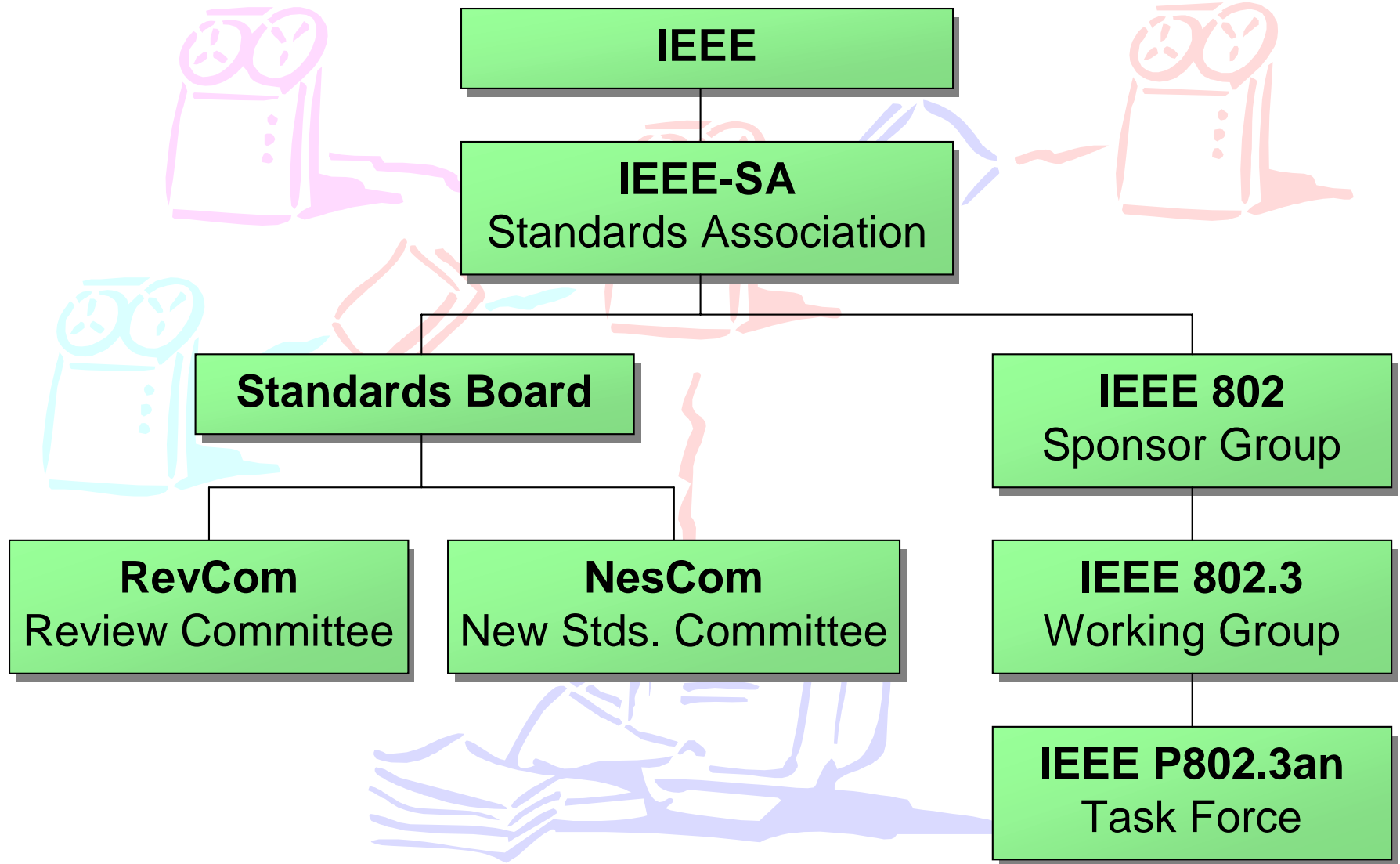
# Reflector and Web

- Majordomo is no more... Listserv is up and running
  - Everyone has the ability to create a listserv account
  - Permits you to manage your reflector subscriptions
- To subscribe to any of the 10GBASE-T reflectors send an email to:  
*[listserv@ieee.org](mailto:listserv@ieee.org)*  
with the following in the body of the message:  
*[subscribe stds-802-3-10GBT <your email address>](#)*  
*[subscribe stds-802-3-10GBT-Modeling <your email address>](#)*  
*[subscribe stds-802-3-10GBT-Cabling <your email address>](#)*
- P802.3an Task Force web page URL:  
*<http://www.ieee802.org/3/an/>*

# 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

- Bylaws of the IEEE Standards Association (IEEE-SA):

[\*http://standards.ieee.org/sa/sa-bylaws.pdf\*](http://standards.ieee.org/sa/sa-bylaws.pdf)

- Bylaws of the IEEE-SA Standards Board:

[\*http://standards.ieee.org/guides/bylaws/sb-bylaws.pdf\*](http://standards.ieee.org/guides/bylaws/sb-bylaws.pdf)

- IEEE LAN/MAN Standards Committee (LMSC) Operating Rules:

[\*http://www.ieee802.org/rules.pdf\*](http://www.ieee802.org/rules.pdf)

- IEEE 802.3 Working Group Operating Rules:

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

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

## **6. Patents**

**IEEE standards may include the known use of patent(s), including patent applications, provided the IEEE receives assurance from the patent holder or applicant with respect to patents essential for compliance with both mandatory and optional portions of the standard. This assurance shall be provided without coercion and prior to approval of the standard (or reaffirmation when a patent becomes known after initial approval of the standard). This assurance shall be a letter that is in the form of 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 the proposed IEEE standard against any person or entity using the patent(s) to comply with the standard or**
- b) A statement that a license 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 shall apply, at a minimum, from the date of the standard's approval to the date of the standard's withdrawal and is irrevocable during that period.**



Approved by IEEE-SA Standards Board – March 2003

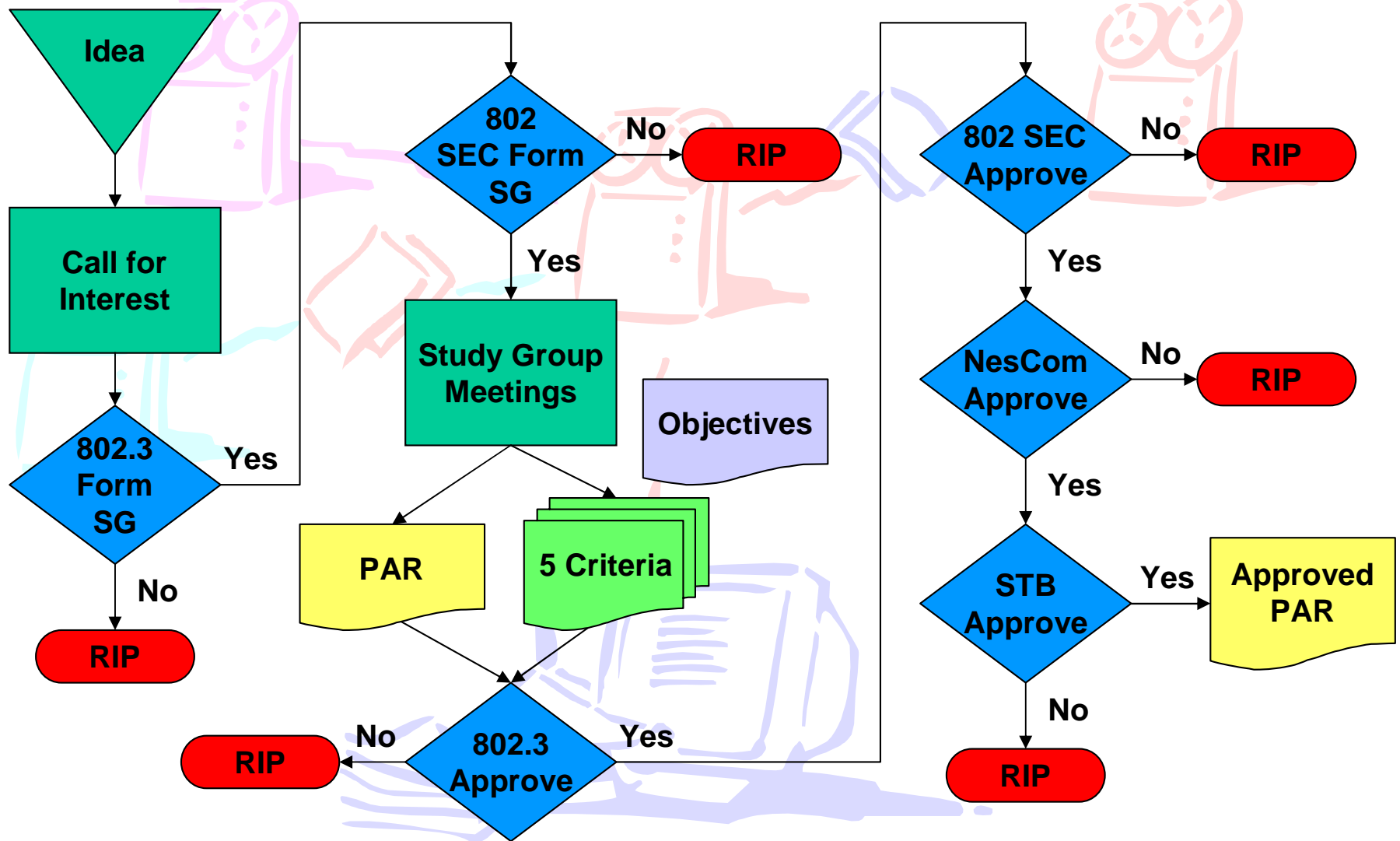
# Inappropriate Topics for IEEE WG Meetings

- **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**
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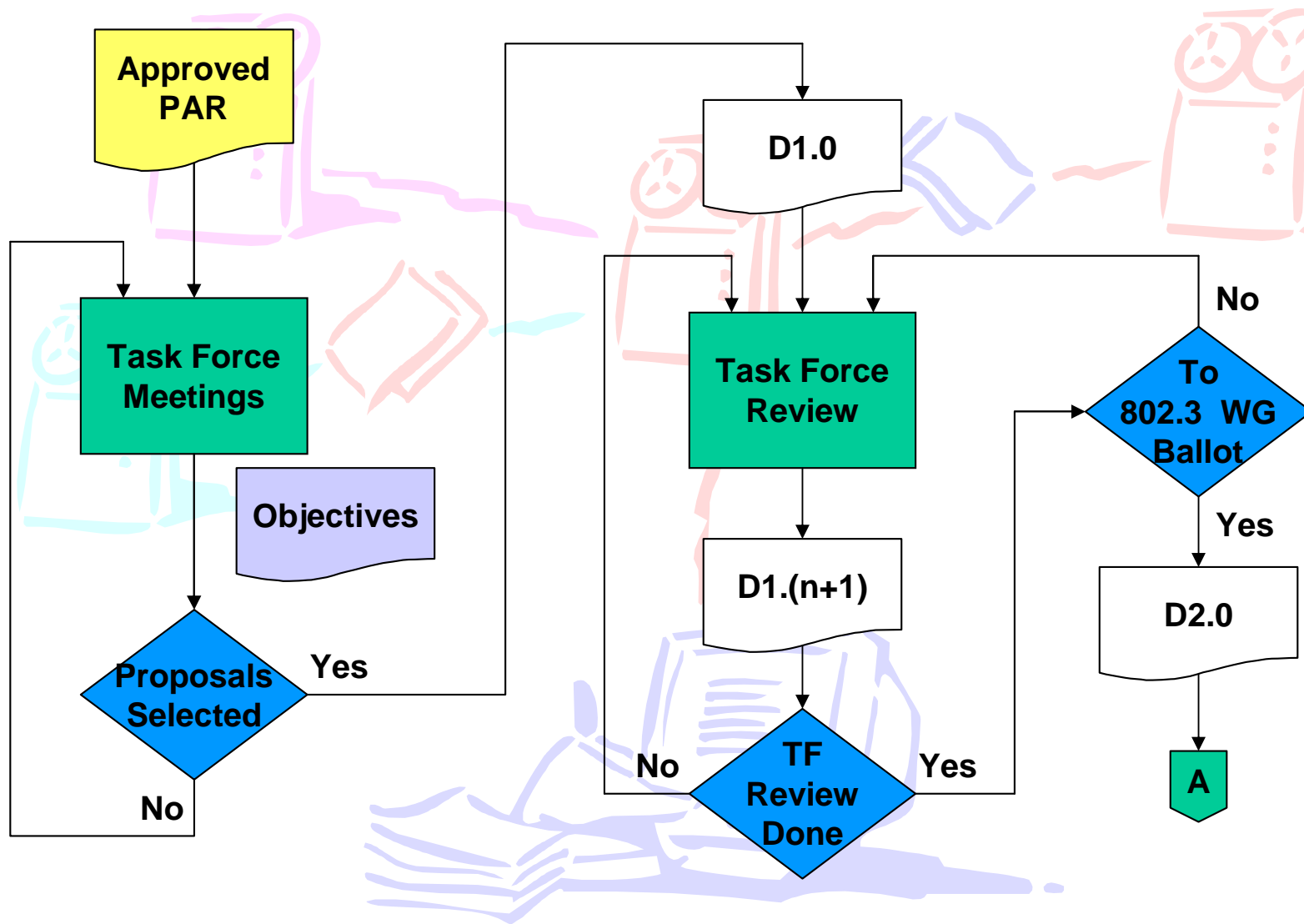
If you have questions, contact the IEEE Patent Committee Administrator at [patcom@ieee.org](mailto:patcom@ieee.org) or visit <http://standards.ieee.org/board/pat/index.html>

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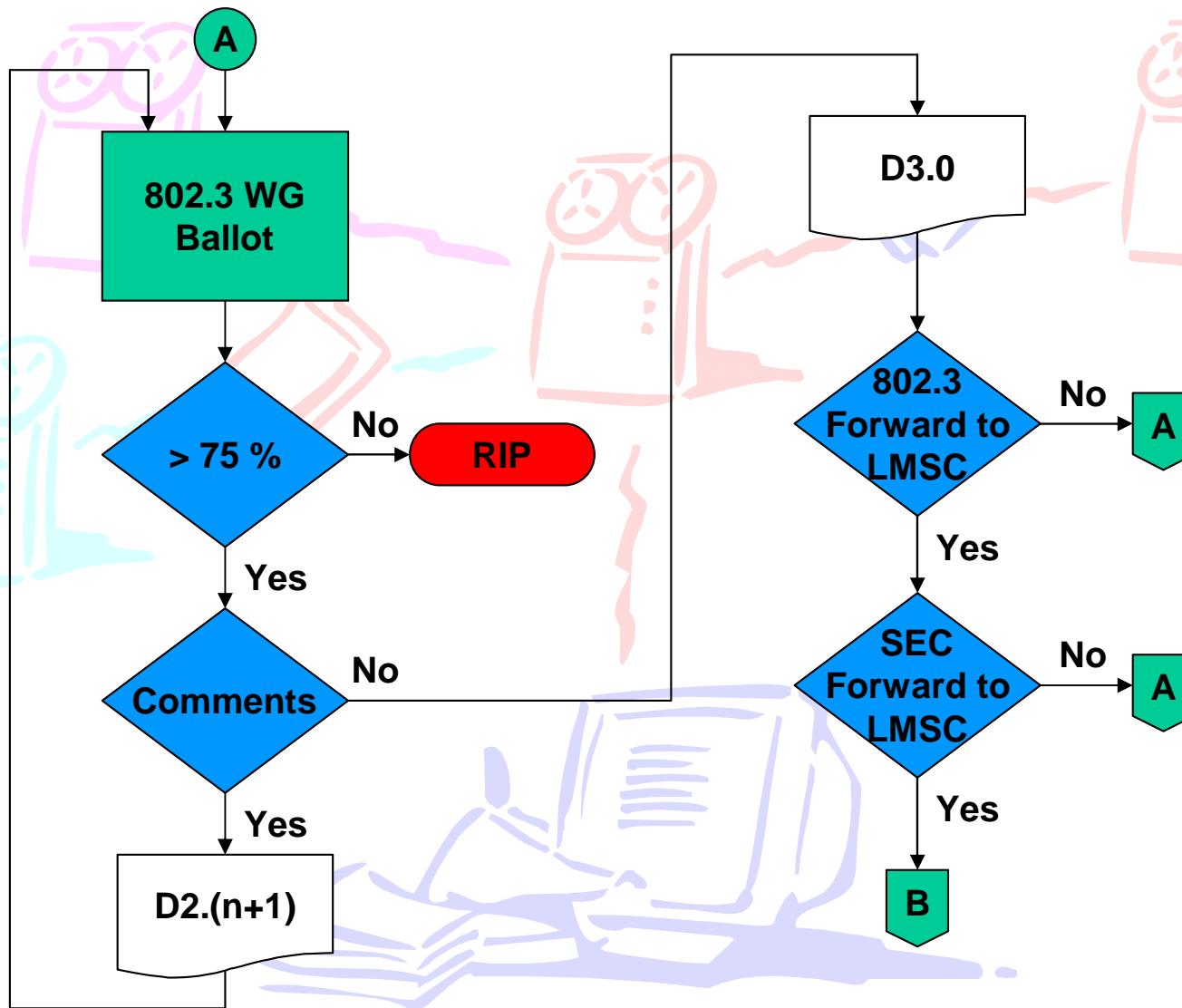
# IEEE Standards Process



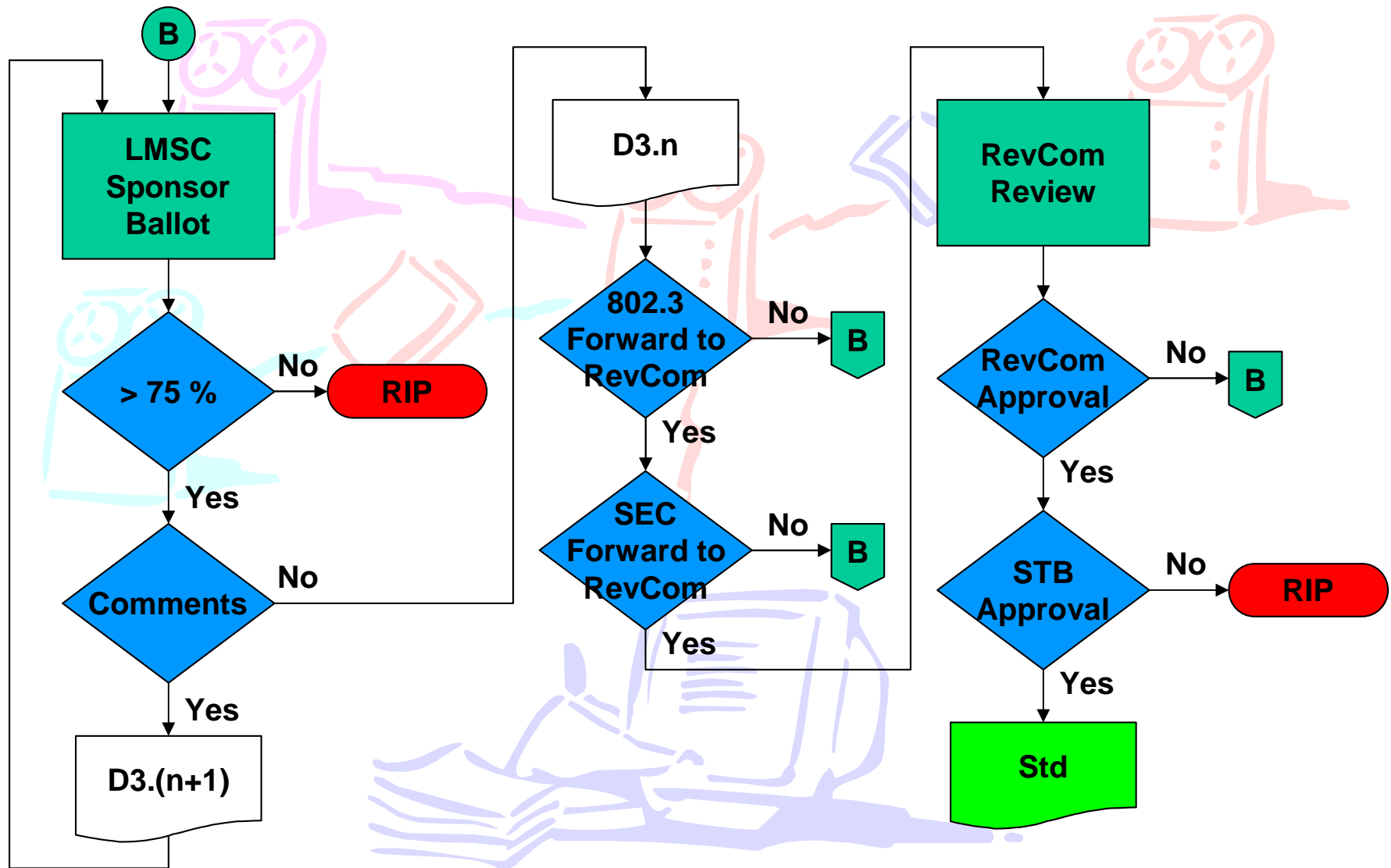
# IEEE Standards Process (cont.)



# IEEE Standards Process (cont.)



# IEEE Standards Process (cont.)



# Task Force

- **Function is to draft a PAR and 5 Criteria**
- **Gain approval at WG 802.3, 802 SEC, IEEE NesCom and IEEE Stds. Board**
- **SG only exists for 6 months**
  - Extensions can be requested... voted on by 802.3, ratified by SEC
- **Development of Objectives help set the goals for the Task Force**
  - Achieved a number of these in Portsmouth
- **Developing consensus**
  - Education helps build consensus
  - Consensus (> 75%) required to move forward



# 10GBASE-T Documents

- **PAR**
  - As per par\_2\_1103.pdf
- **5 Criteria**
  - As per 5Criteria\_2\_1103.pdf
- **Objectives**
  - As per objectives\_1\_0903.pdf

# Objectives

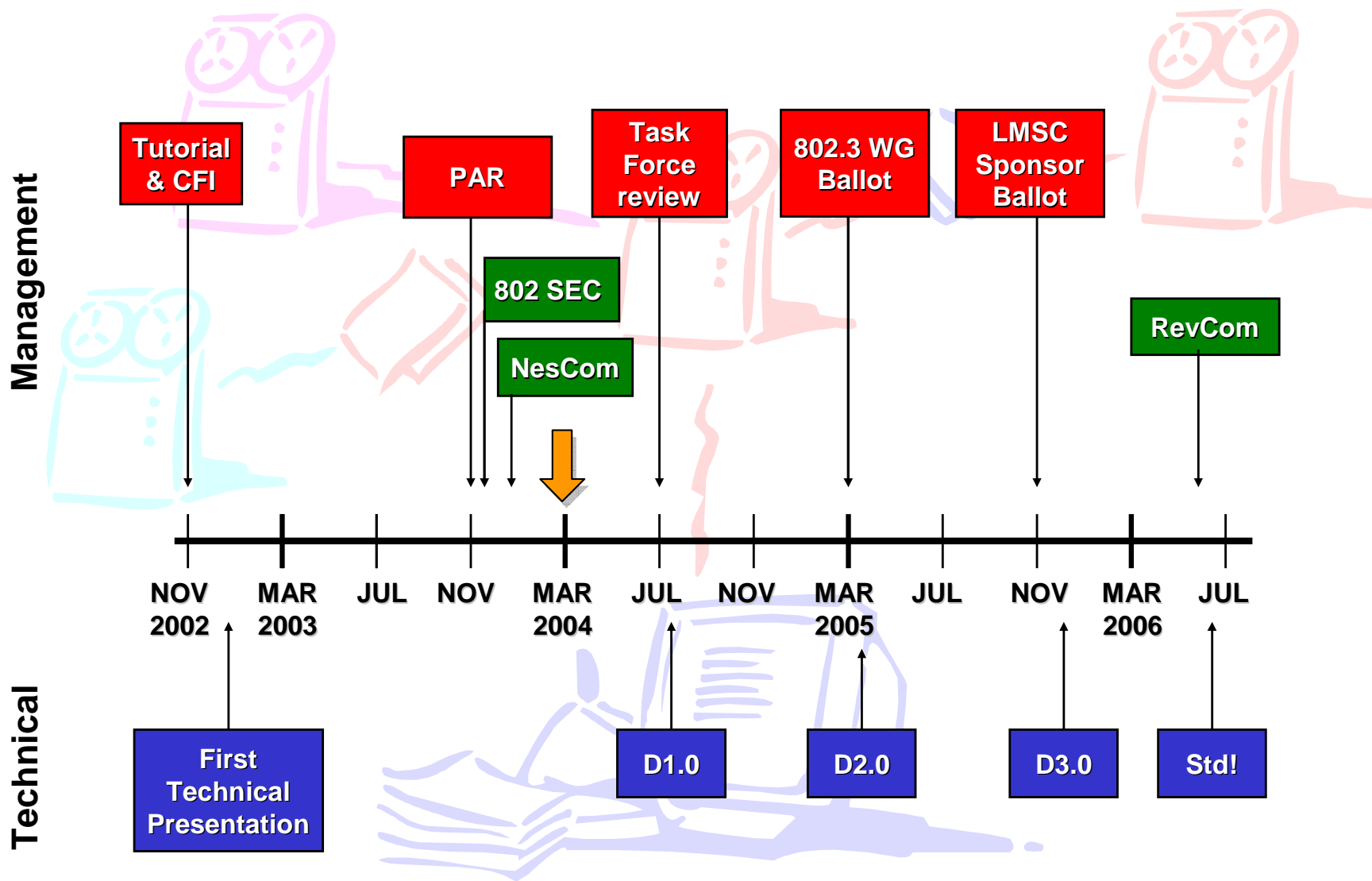
- **Preserve the 802.3/Ethernet frame format at the MAC Client service interface**
- **Preserve min. and max. frame size of current 802.3 Std.**
- **Support full duplex operation only**
- **Support star-wired local area networks using point-to-point links and structured cabling topologies**
- **Support a speed of 10.000 Gb/s at the MAC/PLS service interface**
- **Select copper media from ISO/IEC 11801:2002, with any appropriate augmentation to be developed through work of 802.3 in conjunction with SC25/WG3**
- **Support Clause 28 auto-negotiation**
- **Support coexistence with 802.3af**
- **To not support 802.3ah (EFM) OAM unidirectional operation**
- **Meet CISPR/FCC Class A**

# Objectives (cont.)

- Support operation over 4-conductor structured 4-pair, twisted-pair copper cabling for all supported distances and Classes
- Define a single 10 Gb/s PHY that would support links of:
  - At least 100 m on four-pair Class F balanced copper cabling
  - At least 55 m to 100 m on four-pair Class E balanced copper cabling
- Support a BER of  $10^{-12}$  on all supported distances and Classes



# 10GBASE-T Timeline



# Liaison Letter & Ad Hoc Reports

- **No liaison letter received from ISO/IEC JTC 1 / SG 25 / WG 3**
  - Observations
  - EM Performance
- **Liaison letter received from TIA TR42**
- **Ad hoc reports**
  - None

# Observations from ISO/IEC WG3

- **Agreed to adopt upper frequency of 625 MHz as proposed by 10GBASE-T Study Group**
  - Would appreciate information on what the final frequency range is
- **Agreed to adopt a single formula for each parameter**
  - Remove the cable and component values
  - Permits WG3 to determine those values later
- **Agreed to consider extrapolating Class E and F**
  - Data to be gathered for the June meeting
- **Agreed to study PS ANEXT of  $90-15\log(f)$** 
  - For new cabling installations
- **Ran out of time before liaison letter could be crafted**

# Presentations

- **“10GBASE-T Link Segment Baseline Proposal”**; Di Minico, Chris
- **“Alien Crosstalk modeling”**; Koeman, Henri
- **“Crosstalk Integration”**; Hayes, Trent
- **“Shannon capacity targets: Effects of coding loss and margin”**; Tellado, Jose
- **“Modifications to LDPC Proposal offering Lower Symbol Rate and Lower Latency”**; Dabiri, Dariush
- **“Approach to reducing silicon complexities”**; Dove, Dan
- **“10GBASE-T new proposal for improving PAM performance with OFDM technique”**; Higuchi, Tetsuya
- **“”**; Rao, Sailesh
- **“Alien NEXT Test”**; Cobb, Terry
- **“Latency Considerations for 10GBASE-T PHYs”**; Muller, Shimon
- **“Latency Proposal”**; McConnell, Mike
- **“Channel Coding for 10GBASE-T”**; Seki, Katsutoshi
- **“Transmission Proposal for 10GBASE-T”**; Zimmerman, George
- **“Non line-code elements for the 10GBASE-T standard”**; Zimmerman, George

# **Presentations (cont.)**

- **“A Low Power / Low Latency 10G AFE in CMOS”; Takatori, Hiroshi**
- **“Performance vs. Complexity and Line Code Proposal”; Takatori, Hiroshi**
- **“10GBASE-T Architecture Proposal: IIR/FFE Compromise DLP Precoder”; Powell, Scott**
- **“Alien FEXT Characterization: Class E UTP Link”; Savi, Olindo**
- **“Coding for 10GBASE-T: Performance of RS and TCM”; Ungerboeck, Gottfried**
- **“AXTIR Calculations for Discussion”; Vaden, Sterling**
- **“A closer look at Channel Insertion Loss”; Adriaenssens, Luc**
- **“Link Segment Characteristics Proposal”; Cobb, Terry**
- **“Alien Crosstalk Specifications”; Cohen, Larry**





# Reflector and Web

- To subscribe to any of the 10GBASE-T reflectors send an email to:

*[listserv@ieee.org](mailto:listserv@ieee.org)*

with the following in the body of the message:

*[subscribe stds-802-3-10GBT <your name>](#)*

*[subscribe stds-802-3-10GBT-Modeling <your name>](#)*

*[subscribe stds-802-3-10GBT-Cabling <your name>](#)*

for example:

*[subscribe stds-802-3-10GBT Brad Booth](#)*

***Uses the email address from the header information!!***

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- 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
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# Future Meetings

- **May 2004 Interim:**
  - Week of the 24<sup>th</sup>
  - Long Beach or Monterey, CA
  - Hosted by Cat 6 Consortium
- **July 2004 Plenary:**
  - Week of the 12<sup>th</sup>
  - Portland, OR
  - Portland Hilton & Towers



# Motion Madness



# TIA Liaison Letter Motion

- Move that the Task Force accept the tia\_1\_0304.pdf liaison letter to TIA TR-42 and forward the letter to 802.3 for editing and approval.
- M: Wayne Larsen                      S: Paul Vanderlaan
- Procedural (>50%)
- TF Voters:                      Y: unanimous                      N:                      A:
- 802.3 Voters:                      Y:                      N:                      A:
- PASSES

# ISO/IEC Liaison Letter Motion

- Move that the Task Force accept the iso\_1\_0304.pdf liaison letter to ISO/IEC JTC 1/SC 25/WG 3 and forward the letter to 802.3 for editing and approval.
- M: Joseph Babanezhad      S: Wayne Larsen
- Procedural (>50%)
- TF Voters:      Y: unanimous      N:      A:
- 802.3 Voters:      Y:      N:      A:
- **PASSES**

# Adjourn

