

# IEEE 802 and Consortiums

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TI Fellow, Texas Instruments Incorporated

Chair - IEEE 802 LMSC

Chair - ISO/IEC JTC1/SC6

- IEEE 802 Organization Summary
- IEEE 802 Standards Process
- Consortium Experience
- IEEE-SA New Initiatives
- IEEE 802 Wireless Vision

# IEEE 802 Local and Metropolitan Area Network Standards Committee

- Accredited by ANSI, Sponsored by IEEE Computer Society
  - Ethernet, Token Ring, Wireless, Cable Modem Standards
  - Bridging, VLAN, Security Upper Layer Standards
- Meets three times per year (400 individuals, 15% non-US)
- Develops equivalent IEC/ISO JTC 1 standards
  - JTC 1 series of equivalent standards are known as ISO 8802-nnn
- IEEE 802 web site at <http://stdsbbs.ieee.org/groups/802>.
- Chair: Jim Carlo (jcarlo@ti.com) PHONE:214-340-8837

# IEEE 802 Standards Principals

- Due Process
  - Rules and Procedures
- Consensus
  - Near unanimity
- Openness
  - Everyone has Access to Process
  - Individuals, World-wide
- Balance
  - Balloting group must include developers and users
- Right to Appeal
  - Both procedural and technical anytime during the process

# IEEE 802 ORGANIZATION

## LMSC SPONSOR

**CHAIR**  
Jim Carlo

## WORKING GROUP CHAIRS

**802.1**  
**BRIDGING/ARCH**  
Bill Lidinsky

**802.3**  
**CSMA/CD**  
Geoff Thompson

Active

**802.5**  
**TOKEN RING**  
Bob Love

**802.8**  
**FIBER TAG**  
Chip Benson

**802.10**  
**SECURITY**  
Ken Alonge

Active

**802.11**  
**WIRELESS**  
Vic Hayes

**802.14**  
**CABLE-TV**  
Robert Russell

**802.9**  
**ISLAN**  
Dhad. Vamen

**802.2**  
**LLC**  
Dave Carlson

**802.4**  
**TOKEN BUS**  
Paul Eastman

**802.6**  
**DQDB WAN**  
Jim Mollenauer

**802.7**  
**BROADBAND**  
(802.14 Res)

**802.12**  
**DEMAND PRIORITY**  
Pat Thaler

Hibernation

## EXEC OFFICERS

**VICE CHAIR**  
Paul Nikolich

**RECORDING SEC**  
Howard Frazier

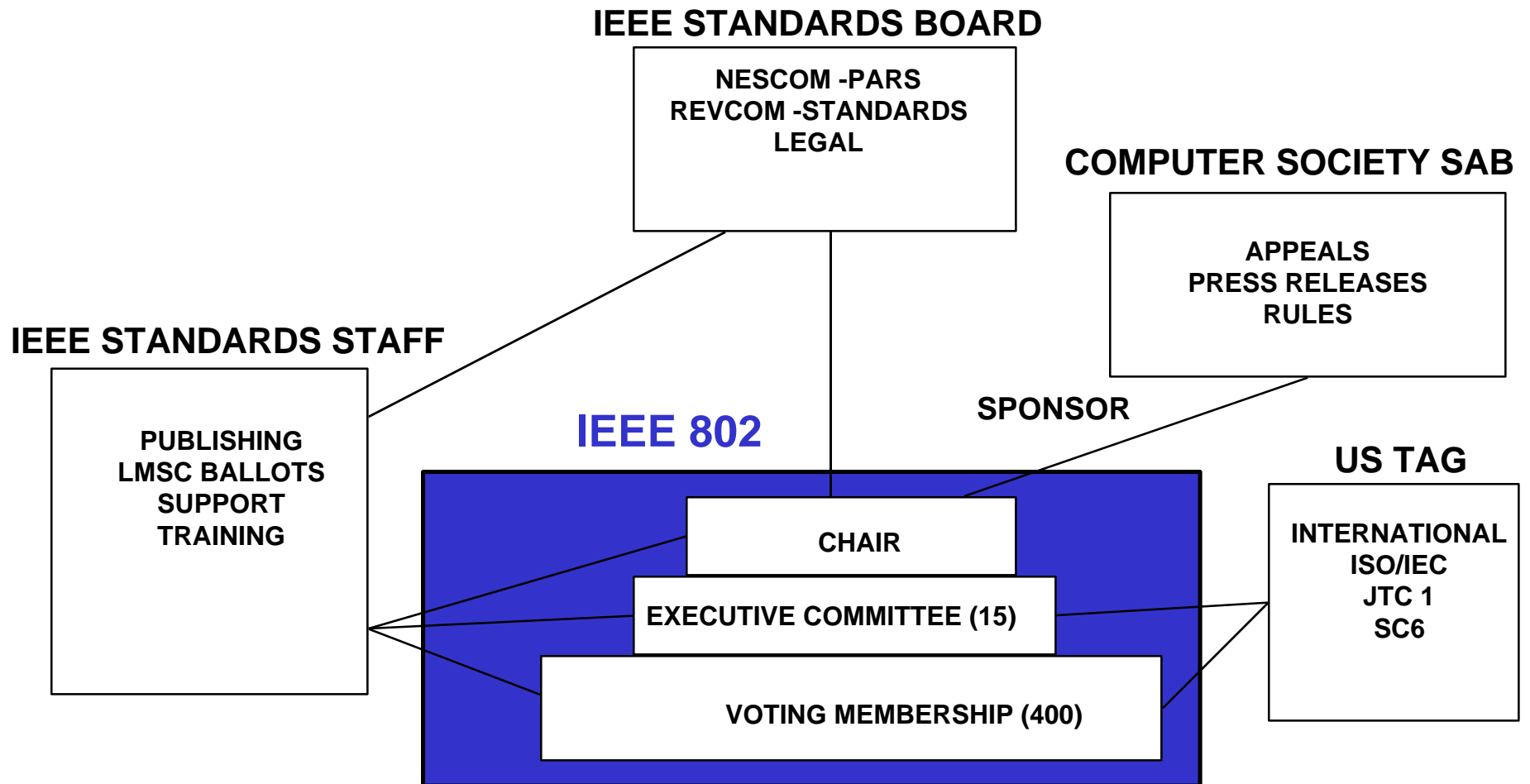
**EXECUTIVE SEC**  
Buzz Rigsbee

**TREASURER**  
Bob Grow

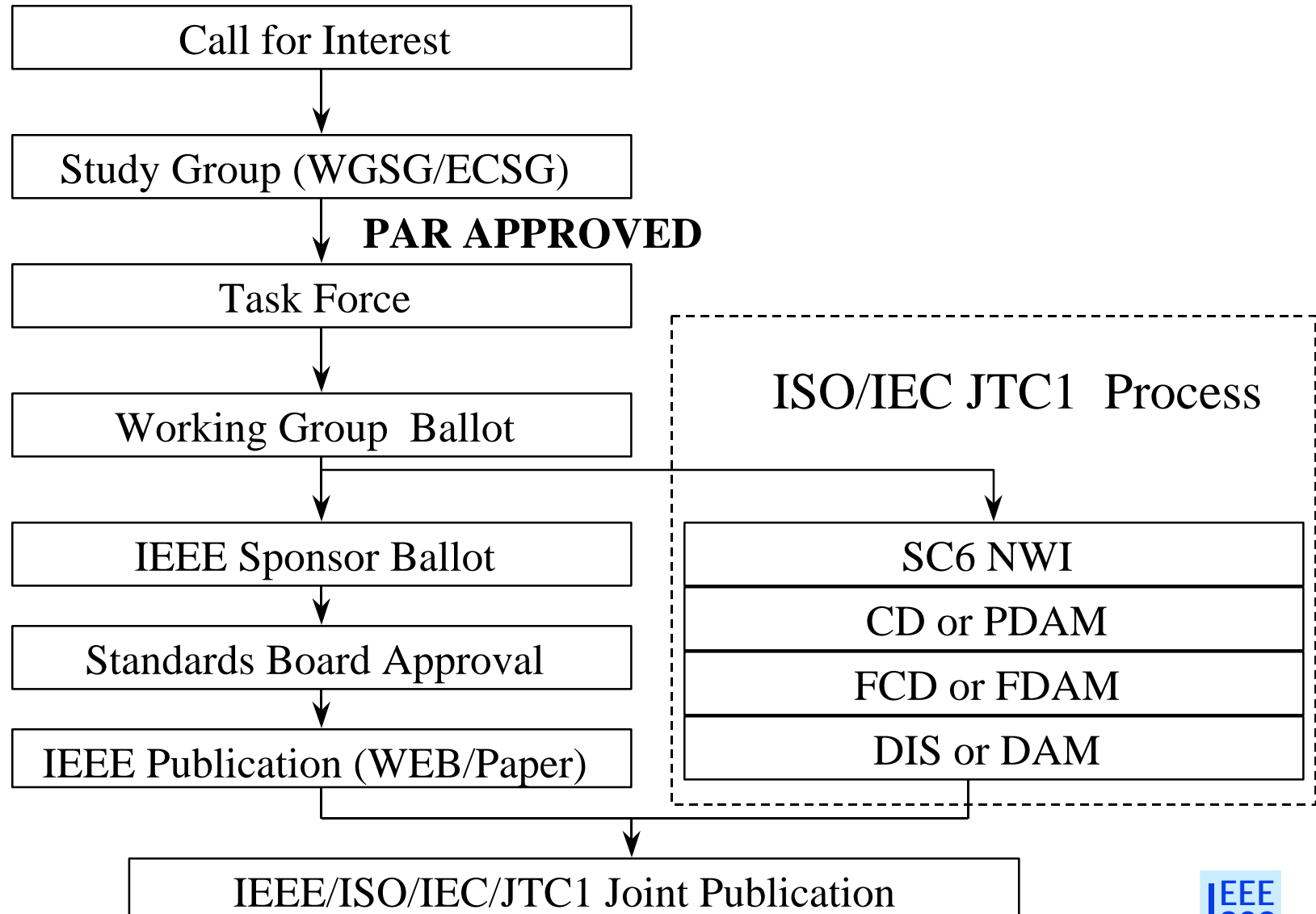
# IEEE 802 Status (Nov1998)

802.1	<b>VLAN Ready for Standard Board Approval (802.1)Q</b>
802.2	Hibernation
802.3	<b>Link Agregation, WG Draft Ballot, 1000BASE-T</b>
802.4	Hibernation
802.5	<b>High Speed Token Ring</b>
802.6	Hibernation
802.7	Hibernation
802.8	Recommended Practice Ballot
802.9	Remote Powering Draft Consolidation
802.10	Security Architecture PARs extended
802.11	<b>Higher Speed Activity Underway</b>
802.12	Near Hibernation
802.14	<b>WG Draft Ballot, Advanced PHY PAR</b>

# IEEE802 INTERFACES



# IEEE 802 Standards Process



# Driving a Consortium Specification Into IEEE 802

- What are the advantages to IEEE 802 effort?
  - Greater Industry Awareness of Standard
  - Increase Vendor Participation
  - Clarify specification so it becomes an interoperable standard
  - World-wide visibility and internationalization
- What are the disadvantages to IEEE 802 effort?
  - Increased effort by Consortium Participants
  - Cannot throw the specification “over the wall”
  - “Loss of Control” if specification is only a few vendors products



# How to Drive an 802 Standard

- Requires study group chair to drive consensus
  - Requires editor to write standard
  - Requires committed individuals/organizations
  - Requires technical leaders to resolve issues
  - Requires consortium to drive market awareness
- 
- RESULT
  - Standard will be rock solid
  - Standard will be maintainable
  - Market will be ready

# History of Consortium Specs that have become IEEE Standards

- 1284 - Parallel Printer Port Standard
  - Parallel Printer Alliance developed specification
  - IEEE Standard “very close” to original spec
- 1754 - SPARC Instruction Set Standard
  - SUN developed SPARC technology
  - IEEE Standard “very close” to original design

# IEEE-SA New Initiatives

- Allow for “entity” developed/voting on standards in addition to “individual” voting
- The IEEE Industry Standards and Technology Organization (IEEE ISTO)
  - Under the IEEE ISTO, an IEEE Society can sponsor programs that are not possible under their existing procedures.
  - Trade associations, consortia, and user groups that form around an IEEE standard can come under the IEEE ISTO umbrella.

# IEEE 802 Vision Statement

IEEE 802 is the focal point for Wireless LAN standards

- 802.11 Base Standard
  - 2.4GHz Freq Hopping Spread Spectrum (1Mbit/s)
  - 2.4GHZ Direct Sequence Spread Spectrum (2Mbit/s)
  - Infrared (1Mbit/s)
- 802.11a 5GHz Extension (>20Mbit/s)
- 802.11b 2.4GHz Extension (>8Mbit/s)
- Broadband Wireless LANs (LMDS) - ECSG
- Wireless Personal Area Networks - WGSG
- **Bluetooth?**
- **HomeRF?**

# BackUp Material

# 802.1 Status (Nov-1998)

- 802.1Q VLAN in final recirculation
  - Approval Expected in Dec 1998
- 802.1D (15802-3) Approved
  - Bridging Standard Update
- New work activity
  - Multiple Spanning Trees (802.1s)
  - GARP Proprietary Registration Protocol (GPRP)

# 802.3 Status (Nov-1998)

- 802.1z Gigabit Standard Approved
  - Gigabit operation over fiber and short copper cable
- 802.3ab/1000BASE-T in WG Ballot
  - Initial comment resolution at Sept Interim
- New Work Activity
  - 802.3ad Link Agregation

# 802.5 Status (Nov-1998)

- 802.5t 100Mbit/s Token Ring
  - WG Approved, Starting Sponsor Ballot
- 802.5v 1000Mbit/s Token Ring
  - Draft in development
- New work activity
  - Source Routing over VLAN
  - Link Aggregation



# 802.11 Status (Nov-1998)

- 802.11 Revision Approved
  - 2.4GHz Freq Hopping Spread Spectrum (1Mbit/s)
  - 2.4GHz Direct Sequence Spread Spectrum (2Mbit/s)
  - Infrared (1Mbit/s)
- 802.11a 5GHz Extension (>20Mbit/s)
- 802.11b 2.4GHz Extension (>8Mbit/s)
- New Study Group activity
  - Wireless Personal Area Networks

# 802.14 Status (Nov-1998)

- 802.14 Base Standard in Development
  - Coordination with SCTE/DOCSIS
  - IEEE Specifies ATM cell transport
  - SCTE Specifies Packet cell transport
- 802.14a Advanced PHY
  - Both SCTE and IEEE to support