

# **Newcomer Orientation: Welcome to IEEE 802**

<http://ieee802.org>

**2018-06-26**

- Introduction to IEEE 802
- Introduction to IEEE-SA standards process
- Getting more information

# **Introduction to IEEE 802**

- IEEE 802:
  - LAN/MAN Standards Committee (LMSC)
- Develops standards, for
  - Local Area Networks (LAN),
  - Metropolitan Area Networks (MAN),
  - Regional Area Networks (RAN),
  - Personal Area Networks (PAN),
  - Wireless Specialty Networks (WSN), etc.
- In operation since March 1980

## Lower-Layer Focus

IEEE 802 standards specify mainly the lower layers of the OSI network model:

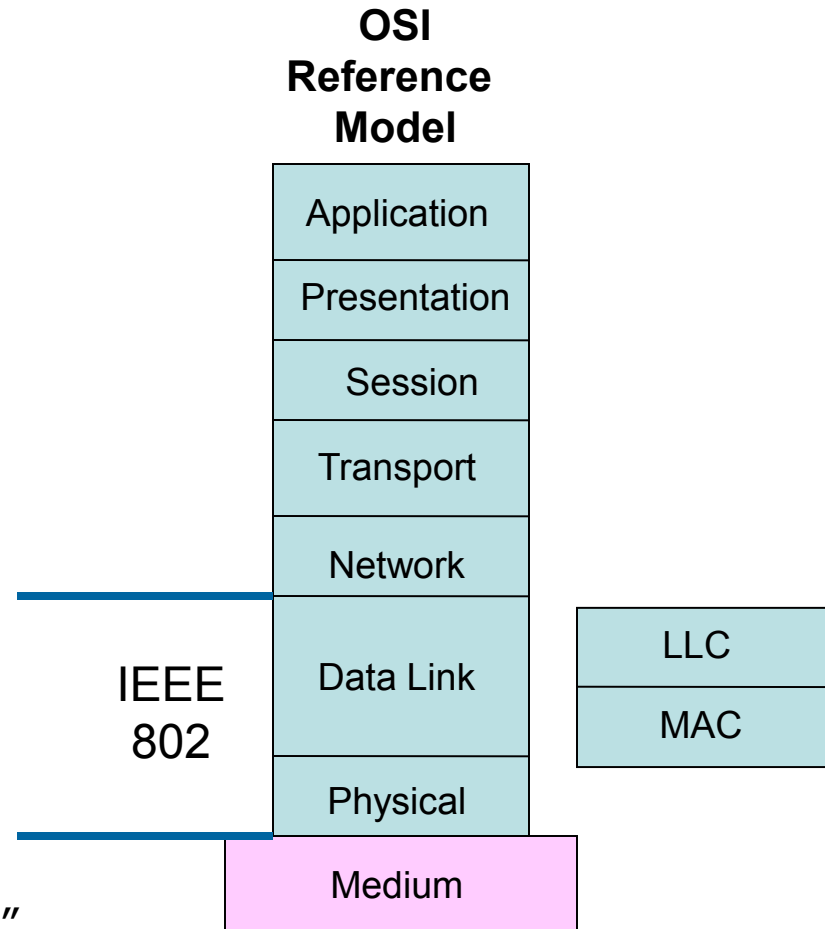
- physical layer (PHY, Layer 1)
- data link layer (DLL, Layer 2)
- IEEE 802 divides DLL into:
  - Medium Access Control (MAC) layer
    - Multiple specifications
  - Common logical link control layer (LLC)

not limited to Layers 1 & 2

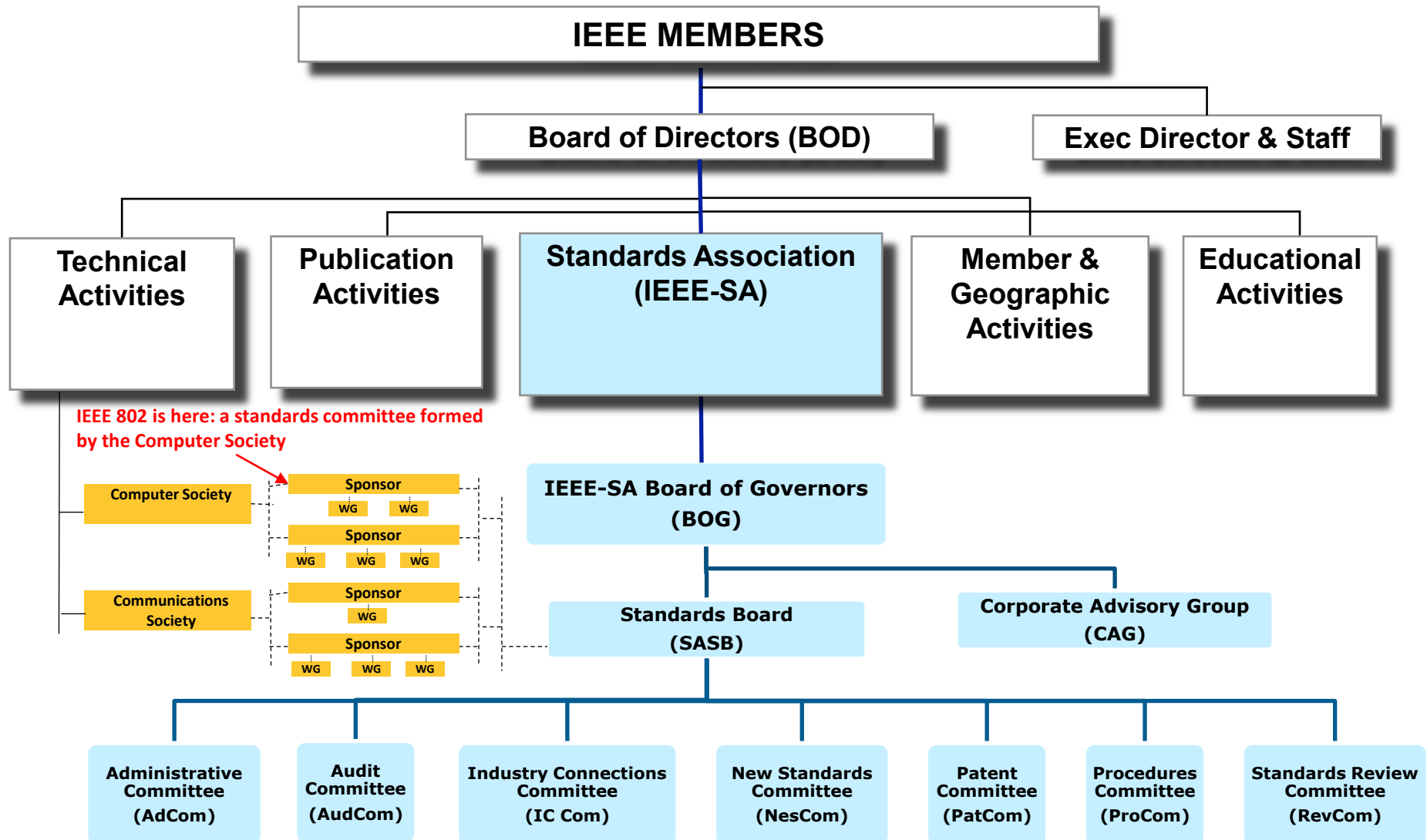
- e.g. bridging operates above Layer 2

See details in IEEE Std 802

- “IEEE Standard for Local and Metropolitan Area Networks: Overview and Architecture”



# IEEE 802 within IEEE and IEEE-SA Structure



## IEEE: World's Largest Professional Association Advancing Technology for Humanity

### GLOBAL REACH



**417,000<sup>+</sup>**  
WORLDWIDE MEMBERS

**46**

TECHNICAL SOCIETIES  
& COUNCILS



**160<sup>+</sup>**  
COUNTRIES INVOLVED

### TECHNICAL BREADTH

**1,600<sup>+</sup>**  
ANNUAL CONFERENCES



**3.9<sup>+</sup> MILLION**  
TECHNICAL DOCUMENTS

**180<sup>+</sup>**  
TOP-CITED  
PERIODICALS



# IEEE Standards Association (IEEE-SA)

- **Vision:** To be a world-class standards-development organization
- **Mission:** To provide a high-quality, market-relevant standardization environment, respected worldwide

**20,000**  
STANDARDS  
DEVELOPERS

**160<sup>+</sup>**  
COUNTRIES  
INVOLVED

**1200<sup>+</sup>**  
ACTIVE  
STANDARDS

**600<sup>+</sup>**  
STANDARDS UNDER  
DEVELOPMENT

IEEE Standards span a broad spectrum of technologies, such as:

- Aerospace Electronics
- Broadband Over Power Lines
- Broadcast Technology
- Clean Technology
- Cognitive Radio
- Design Automation
- Electromagnetic Compatibility
- Green Technology
- Ethernet/WLAN
- Medical Device Communications
- Nanotechnology
- Organic Components
- Portable Battery Technology
- Power Electronics
- Power & Energy
- Radiation/Nuclear
- Reliability
- Transportation Technology



## Individual Method

IEEE-SA supports two types of standardization development

- Individual: participants are human beings
- Entity: participants are organizations, such as companies

IEEE 802 is entirely Individual-based

# Key development concepts

## ■ Project Authorization Request (PAR)

- Document that authorizes work on a standardization Project
  - Developed as a Request, typically within a WG
  - Reviewed in formal LMSC procedure at a Plenary Session
  - Authorization of the Request is ultimately an SASB decision

## ■ Working Group (WG)

- Responsible for developing standards in an area
- Each PAR is assigned to a WG

## ■ Task Group (TG) or Task Force (TF)

- Subset of WG assigned by WG to develop a project

## ■ Technical Advisory Group (TAG)

- Addresses cross-WG issues; does not develop standards

## More terms

- Industry Connections (IC) Activity
  - Non-standardization activity authorized by IEEE-SA IC Com
- Call for Interest (CFI)
  - Meeting used by some WGs to outline a topic and gauge interest in investigating possible project
- Study Group (SG)
  - Group formed to investigate a potential project and produce a PAR
- Criteria for Standards Development (CSD)
  - An 802-specific document required to accompany a PAR and more fully describe the project
  - Includes Five Criteria (5C)
    - Broad Market Potential, Compatibility, Distinct Identity, Technical Feasibility, Economic Feasibility

# IEEE 802 Organization

## EXECUTIVE COMMITTEE (EC)

**CHAIR**  
**Paul Nikolich**

## Working Group/TAG Chairs

**802.1 WG**  
**High Level Interface**  
**Glenn Parsons**

## 802.3 WG

### Ethernet

### David Law

**802.11 WG**  
**WLAN**  
**Dorothy Stanley**

**802.15 WG**  
**WSN**  
**Bob Heile**

**802.18 TAG**  
**Radio Regulatory**  
**Jay Holcomb**

**802.19 WG**  
**Coexistence**  
**Steve Shellhammer**

**802.21 WG**  
Media access  
independent Services  
**Subir Das**

**802.22 WG**  
**WRAN**  
**Apurva Mody**

**802.24 WG**  
**Vertical Applications**  
**Tim Godfrey**

## Appointed Officers

**1st VICE CHAIR**  
**James P.K. Gilb**

**2nd VICE CHAIR**  
**Roger Marks**

**EXECUTIVE SEC.**  
**Jon Rosdahl**

**RECORDING SEC.**  
**John D'Ambrosia**

**TREASURER**  
**Clint Chaplin**

**MEMBER EMERITUS**  
(non-voting)  
**Geoff Thompson**

**DISBANDED**

802.2 LLC	802.4 Token Bus	802.5 Token Ring
802.6 DQDB	802.7 Broadband TAG	802.8 Fiber Optic TAG
802.9 ISLAN	802.10 Security	802.12 Demand Priority
802.14 CATV	802.17 Resilient Packet Ring	802.20 MBWA
		802.23 Emergency Services

## Hibernating WG

**(non voting)**

**802.16**  
**BWA**  
**Roger Marks**

- Roughly, a “session” last a few days; a “meeting” lasts a few hours
- IEEE 802 Plenary session
  - All WGs and TAGs
  - Each March, July, November
    - <http://802world.org/plenary/schedule>
- Interim sessions
  - Typically held between Plenary sessions, at discretion of WGs
  - Could be entire WG
  - Could be set of WGs
    - e.g. Wireless Interim each January, May, September
  - Could be a subset of a WG
- Teleconferences, at discretion of WGs
- IEEE 802 Executive Committee
  - Plenary week:
    - Monday 08:00-10:30
    - Friday 13:00-18:00
  - Teleconferences
    - February, June, October

## Overview of the Plenary week

	Sun	Mon	Tue	Wed	Thu	Fri
A M	Some TG/TF meetings  Some organizational meetings	Opening EC  newcomer orientation  WG opening plenaries (most)	TG/TF meetings	TG/TF meetings  Some WG midweek plenaries	TG/TF meetings  Some WG closing plenaries	Some WG closing plenaries
P M		Remaining WG opening plenaries  TG/TF meetings				Closing EC
E v e	IEEE 802 rules review	Tutorials	TG/TF meetings	802 Social reception	Some WG closing plenaries	

Check WG agendas for details

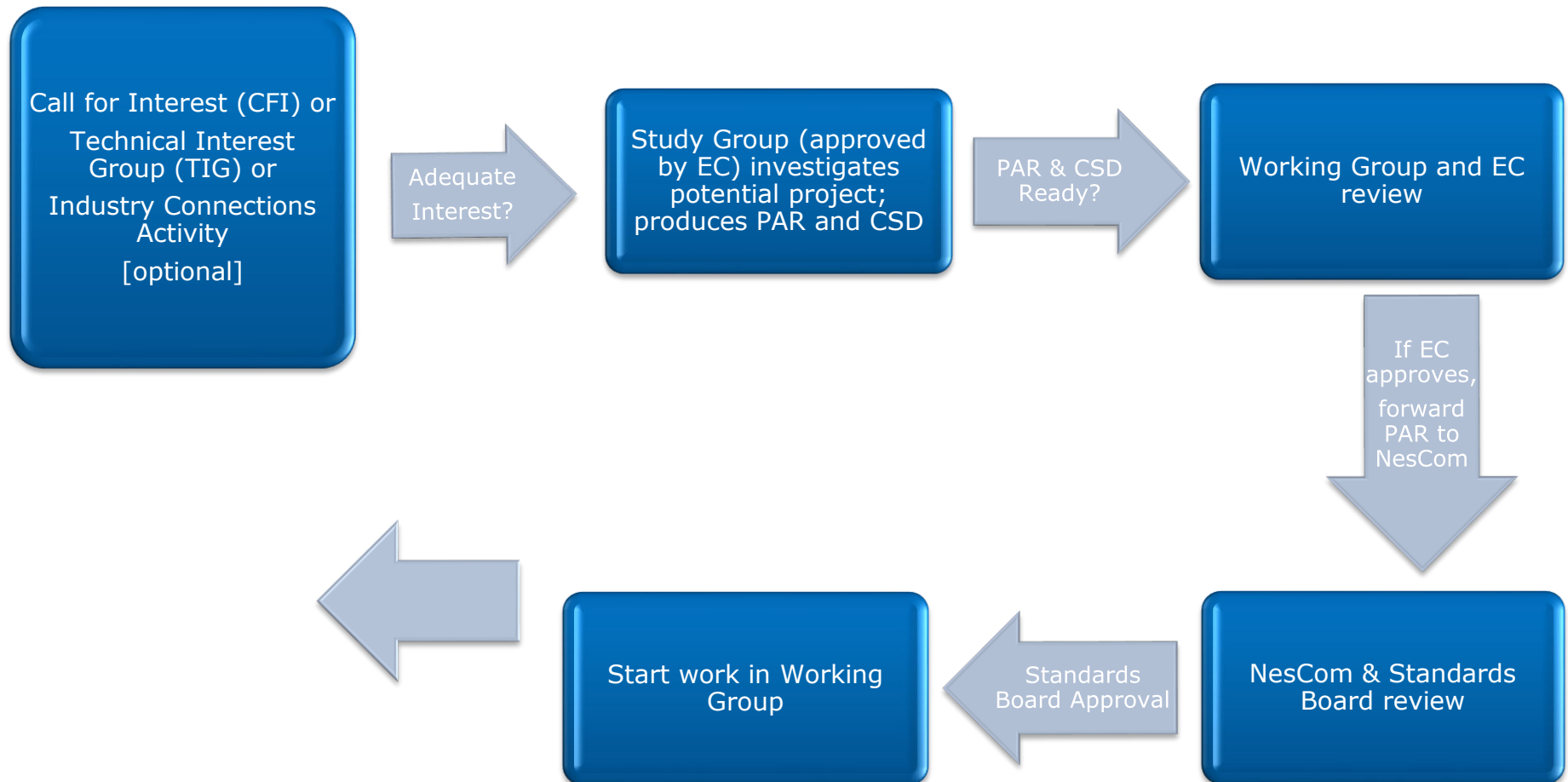
# **Introduction to IEEE-SA standards process**

# Five Basic Principles

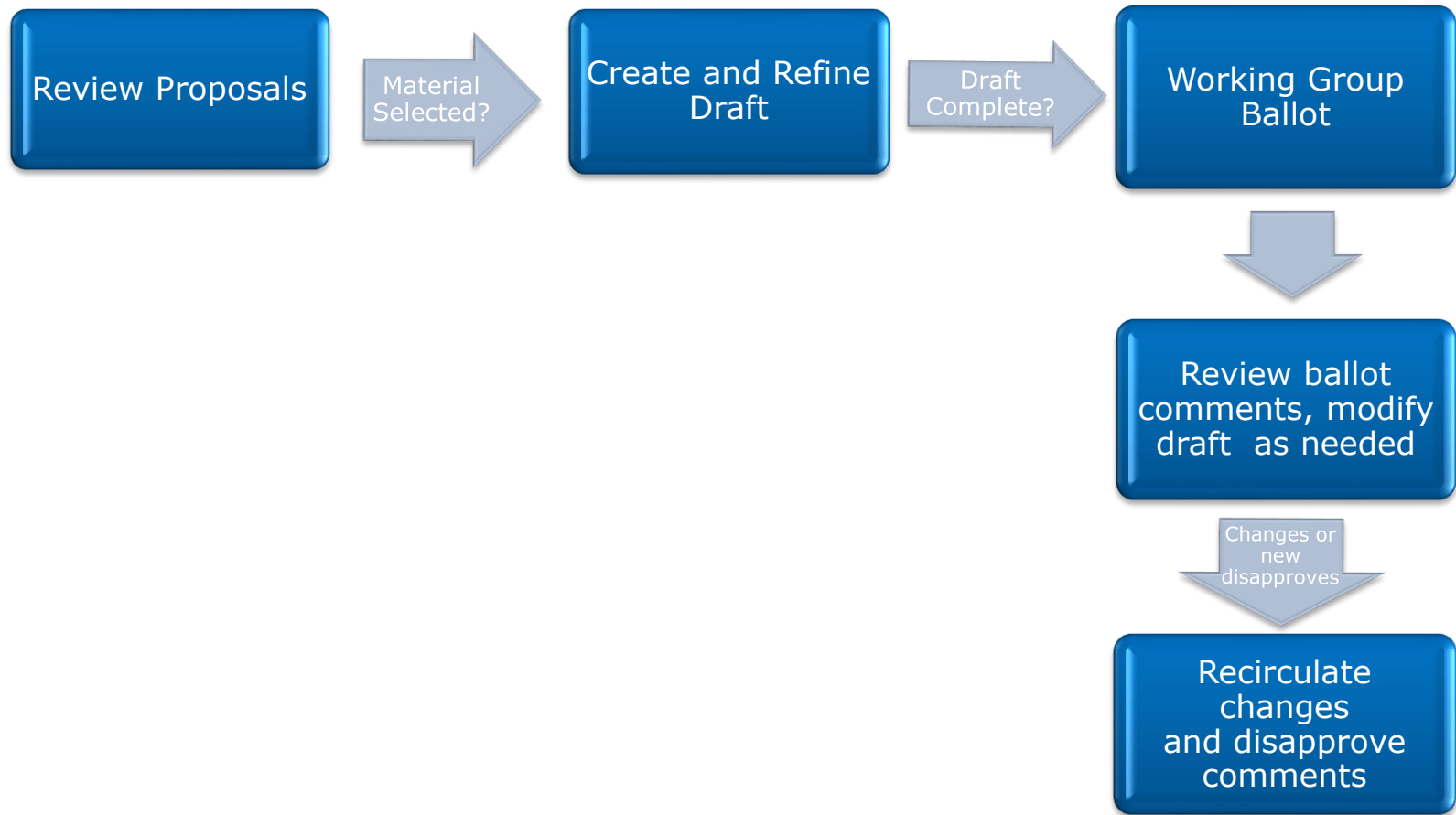
- Standards development follow a well-defined path from concept to completion, guided by a set of five basic principles:
  1. **Due process** - Having highly visible procedures for standards creation and following them.
  2. **Openness** - All interested parties can participate in the IEEE standards development process
  3. **Consensus** - A clearly defined percentage of those in a balloting group vote to approve a draft of the standard
  4. **Balance** - Balloting groups include all interested parties. No one party has an overwhelming influence in the balloting group.
  5. **Right of appeal** - Anyone may appeal a standards development decision at any point, before or after a standard has been approved.
- **IEEE-SASB Bylaws:**  
<http://standards.ieee.org/develop/policies/bylaws/index.html>
- **IEEE-SASB Operations Manual:**  
<http://standards.ieee.org/develop/policies/opman/>



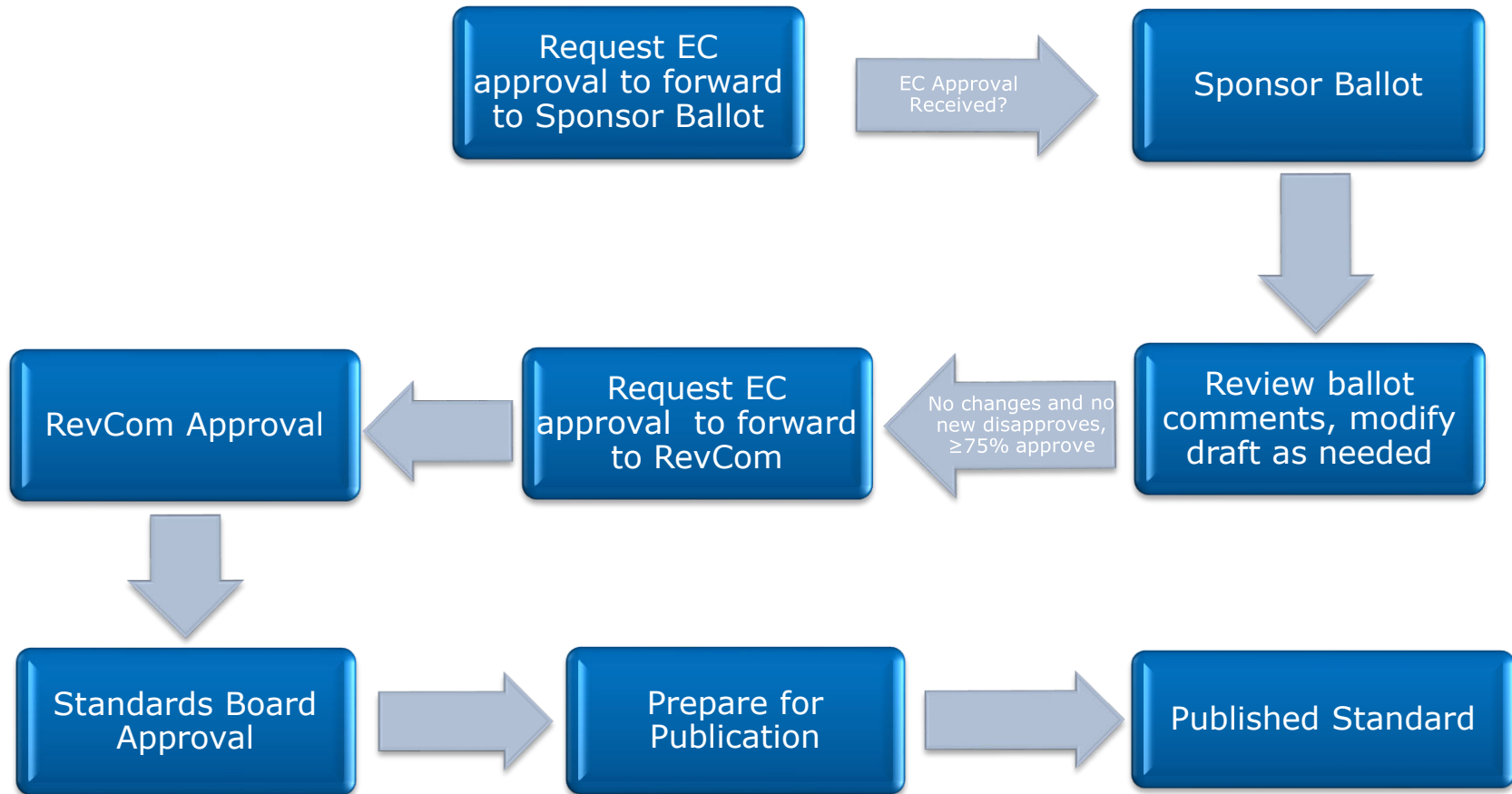
## IEEE 802 Standards Development Life Cycle – Part 1



## IEEE 802 Standards Development Life Cycle – Part 2



## IEEE 802 Standards Development Life Cycle – Part 3



## Maintaining the Standard

- Keep the standard current by producing amendments and corrigenda (corrections)
- Renew the standard by creating revisions
  - incorporating prior amendments and corrigenda
- When the standard is out of date, withdraw it.

# Balloting of Drafts

Three levels of review/voting occur in IEEE 802 standards development:

- Task Group or Task Group review or ballot
  - Requirements vary; may be informal – consult Working Group.
- Working Group Ballot (“WG Letter Ballot”)
  - Formal requirements set by LMSC
  - WG Members have a responsibility to participate
- Sponsor Ballot
  - Formal requirements set by IEEE-SA
  - Open to all interested parties, via IEEE SA-membership
  - 60-day public review runs concurrently

## Acquiring WG membership

- “Participation” at a session means at least 75% presence.
  - Web-based “IMAT” tool tracks attendance per meeting
- For a new Working Group, persons participating in the initial session become members.
- For an existing Working Group, membership starts when attending a Plenary Session having participated in 2 of the last 4 Plenary Sessions
  - Can substitute 1 intervening Interim Session for a Plenary Session.
  - Depending on Working Group, may require a declaration of intent.

## To Retain WG Membership

- Participate in 2 of the last 4 Plenary Sessions.
  - An interim may substitute for 1 of the 2.
- Participate in Working Group Letter Ballots
  - membership may be lost if two of the last three Working Group letter ballots are not returned, or are returned with an abstention for other than “lack of technical expertise”

# Affiliation

- Disclosure of affiliation is required
  - An affiliation, as defined in the IEEE-SA Standards Board Bylaws, 5.2.1.5, is an individual deemed "affiliated" with an 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.
  - Disclosed as part of attendance process (inc. IMAT attendance tool)
- See IEEE-SA FAQs: Disclosures of Affiliation (<https://standards.ieee.org/faqs/affiliation.html>)



## Behavioral guidelines

- Respect others
- NO product pitches
- NO corporate pitches
- NO prices
- Silence electronics
- NO restrictive notices
  - presentations and communications must be openly available
- No photographs or recordings
  - IEEE-SA Standards Board Bylaws: “Restrictions include, but are not limited to, the usage of audio recording, video recording, and photography by participants or observers. Recording of the proceedings ..., in part or in whole, via any means, is prohibited.” [limited exceptions for recording of minutes]

# IEEE-SA Patent Policy

- Will not be reviewed in this newcomer presentation.
- Will be reviewed during IEEE-SA standards development meetings.
- Familiarize yourself with the policy:
  - <https://standards.ieee.org/about/sasb/patcom/materials.html>
- Review particularly:
  - Patent Slides for Standards Development Meetings
  - Patent Slides for Pre-PAR Meetings
- Slides include coverage of some non-patent guidelines, including antitrust and competition issues.

# IEEE 802 Participation Slide

- Will not be reviewed in this newcomer presentation.
- Will be reviewed during IEEE-SA standards development meetings.
- Explains that participation in any IEEE 802 meeting is on an individual basis
- Familiarize yourself with the slide:
  - <https://mentor.ieee.org/802-ec/dcn/17/ec-17-0093.ppt>

# Getting more information

- IEEE 802 home page: key starting point
  - <http://ieee802.org>

- "IEEE 802 Policies & Procedures and other documents related to standards development"
- <http://ieee802.org/devdocs.shtml>
- Key documents:
  - IEEE 802 Policies & Procedures
  - IEEE 802 Operations Manual
  - IEEE 802 Working Group Policies and Procedures
  - IEEE 802 LMSC Chair's Guidelines

## More Resources

- IEEE 802 orientation, including these slides
  - <http://ieee802.org/orientation.shtml>
- Session plans, including WG interims
  - <http://ieee802.org/meeting>
- Tutorials
  - <http://ieee802.org/Tutorials.shtml>
- EC Members
  - <http://ieee802.org/wgchairs.shtml>
- IEEE 802 standards
  - <https://ieeexplore.ieee.org/browse/standards/get-program/page/series?id=68>
- “Mentor” document server (EC and most WGs and TAGs)
  - <https://mentor.ieee.org/802/bp/StartPage>
- “IMAT” meeting attendance logging tool
  - <https://imat.ieee.org/attendance>