Overview of the IEEE-SA Process

Malia Zaman
Program Manager
P1622 Working Group Meetings
March 8-9, 2012

In this Presentation we will cover:

- Overview of the IEEE-SA Process
- Project Approval Process
- Development of Draft Standard
- Sponsor Balloting Process
- myBallot/myProject Access/Membership Services
- Standards Board Approval Process
- Policy updates
- Resources

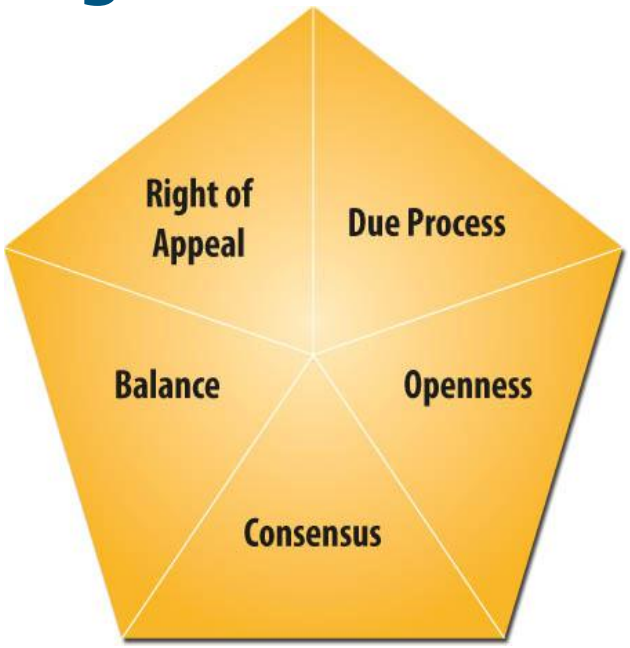
IEEE—A Global Organization

IEEE is a non-profit organization for scientific and educational advancement

IEEE is made up of international technical professionals living around the world who are fostering technological innovation and excellence for the benefit of humanity

IEEE Standards Development

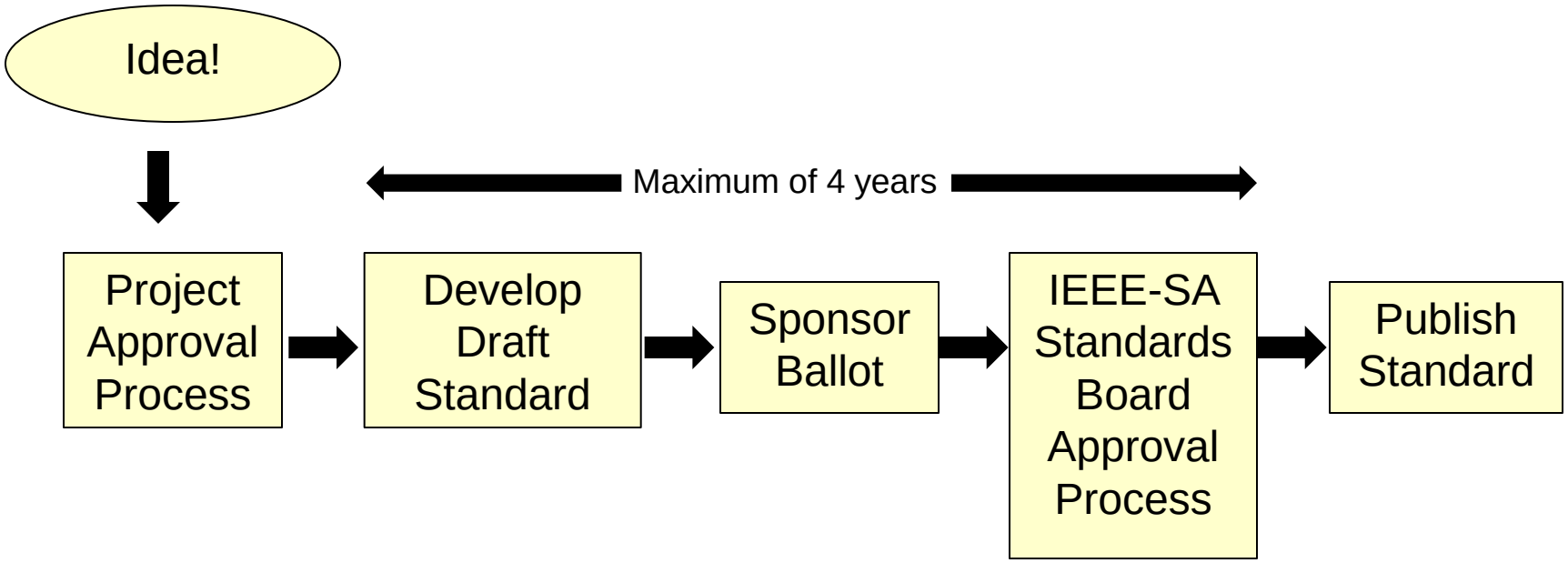
Five principles guide standards development



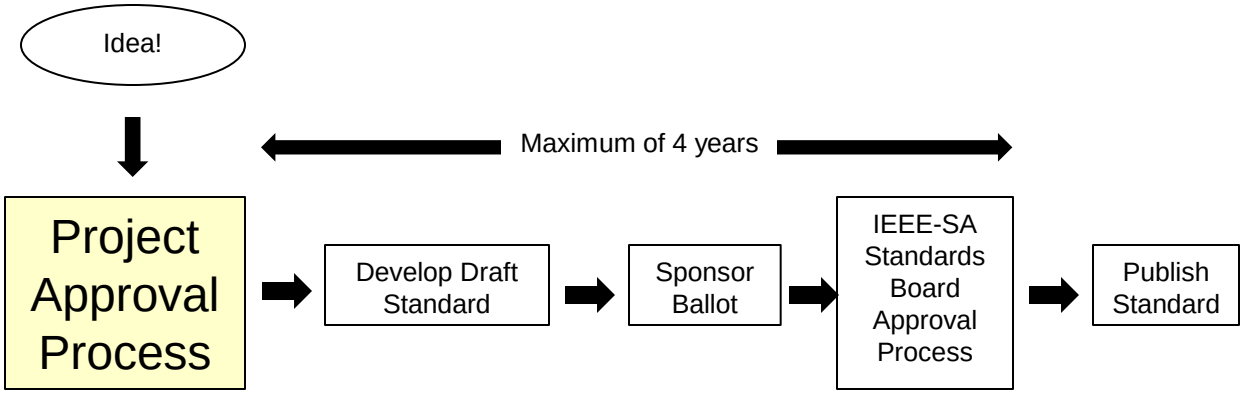
Ensuring integrity and wide acceptance for IEEE standards

IEEE standards reflect the standardization principles as stated by the WTO

IEEE Standards Development:
Process Flow

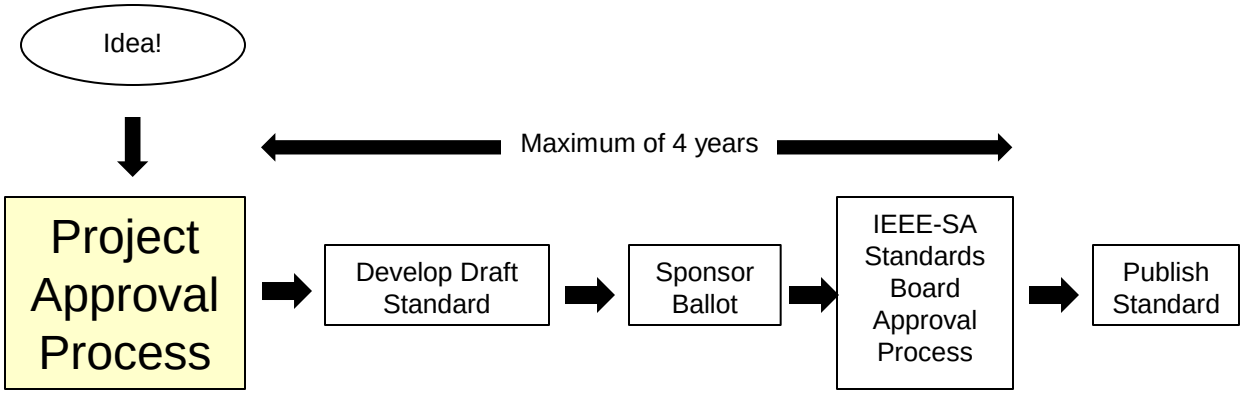


IEEE Standards Development:
Project Authorization



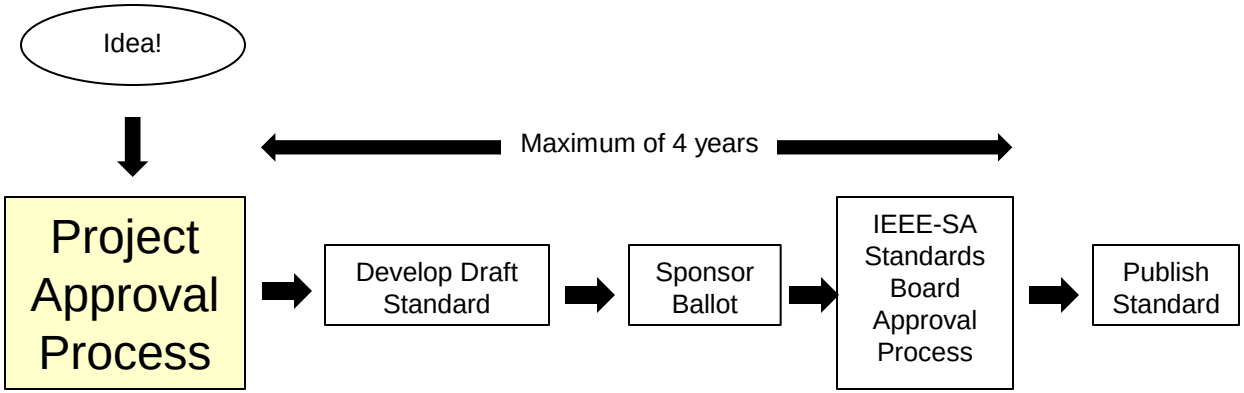
- A potential working group or study group gathers to work on the Project Authorization Request (PAR), up to six months before a PAR needs to be submitted.
- With the support of the sponsor, submit a PAR to IEEE-SA Standards Board (SASB) for an approval to start the project.
- PAR is reviewed by New Standards Committee (NesCom) and based on its recommendation, IEEE-SA Standards Board (SASB) approves/disapproves the project

IEEE Standards Development:
Project Authorization



- Once the PAR's Title, Scope and Purpose has been determined, then it can be submitted to NesCom
- In order to meet the next meeting deadline, a PAR will need to be submitted by April 27th in order to be reviewed at the June 6-8th IEEE-SA Standards Boards Meeting

IEEE Standards Development:
Project Authorization



PAR Options:

- **Option 1**: Continue with a series of 1622 Family of Standards, etc P1622.1, P1622.2 each project dedicated to a different topic. When all the parts have been developed, revise the standard to roll up all the parts into one standard. Each .1 and .2 project will have it's own Title Scope and Purpose.
- **Option 2**: Develop amendments to P1622, i.e. 1622a, 1622b. After 3 amendments the amendments will need to be rolled up. These may have its own scope but not necessary, and will only cover a particular clause, not an entire standard.

Option 1: Family of Standards: Sample Language

- **IEEE 1903-2011**
- **2.1 Title:** Standard for the *Functional Architecture* of Next Generation Service Overlay Networks
- **5.2 Scope:** This Next Generation Service Overlay Network (NGSON) standard describes a framework of Internet Protocol(IP)-based service overlay networks and specifies context-aware (e.g., such as required Quality of Service (QoS) level, type of service such as real-time vs. data, nature of data stream such as I-frame vs. B-frame, and type of terminal such as TV monitor vs. personal digital assistant), dynamically adaptive (e.g., using locally derived information to discover, organize, and maintain traffic flows in the network within a local area network), and self-organizing networking capabilities (e.g., developing network structures based on the needs of the customers and the capabilities of existing network structures), including advanced routing and forwarding schemes, and that are independent of underlying networks.
- **5.4 Purpose:** The purpose of this standard is to enable network operators, service/content providers, and end-users to provide and consume composite services by the deployment of context-aware, dynamically adaptive, and self-organizing networking capabilities.
- **5.5 Need for the Project:** The amount of services and applications and their interaction are increasing at an exponential rate. This standard is needed to provide a better, more efficient way of providing these services and applications by means of context-aware, dynamically adaptive, and self-organizing networking capabilities.

Option 1: Family of Standards- Sample Language

- P1903.1
- **2.1 Title:** Standard for ***Content Delivery*** Protocols of Next Generation Service Overlay Network (NGSON)
- **5.2 Scope:** This Standard specifies protocols among Content Delivery (CD) Functional Entity (FE), Service Routing (SR) FE, Service Policy Decision (SPD) FE, Service Discovery and Negotiation (SDN) FE, and Context Information Management (CIM) FE to support advanced content delivery capability in next generation service overlay networks.
  The content delivery capability aims to support content discovery, content cache and storage management, content delivery control, and transport Quality of Service (QoS) control including context-aware and dynamically adaptive content delivery operations
- **5.4 Purpose:** This standard enables network operators, service/content providers, and end users to provide and consume content services based on advanced content delivery capability of NGSON with context-aware and dynamically adaptive features. This standard provides interoperability of content services between network operators and content providers.
- **5.5 Need for the Project:** The content delivery is an essential capability of NGSON to deliver the service content to the end-users in an efficient manner in terms of resource usage and QoS.

Option 1: Family of Standards- Sample Language

- **P1903.2**
- Title: Standard for Service ***Composition Protocols*** of Next Generation Service Overlay Network (NGSON)
- **5.2 Scope:** This standard specifies protocols among Service Composition (SC) Functional Entity (FE), Service Discovery and Negotiation (SDN) FE, Context Information Management (CIM) FE, Service Routing (SR) FE and Service Policy Decision (SPD) FE to support service composition capabilities in next generation service overlay network. The capabilities of service composition aim to support service chaining and instantiation, specification interpretation, service brokering and execution, and context- aware and dynamically adaptive service composition.
- **5.4 Purpose:** This standard enables network operators, service/content providers, and end users to provide and consume composite services based on advanced service composition capability of NGSON with context-aware and dynamically adaptive features. This standard also provides interoperability of composite services between network operators and service providers.
- **5.5 Need for the Project:** Service composition is one of the most important features defined in NGSON to support composite services. This project will define a set of protocols to provide service composition capabilities of NGSON

Option 2: Amendments: Sample

- **Root IEEE 802.11-2007**
- **Revision IEEE 802.11-2011**
- **2.1 Title: Standard** for Information Technology - Telecommunications and Information Exchange Between Systems - Local and Metropolitan Area Networks - Specific Requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications
- **5.2 Scope:** The scope of this standard is to define one medium access control (MAC) and several physical layer (PHY) specifications for wireless connectivity for fixed, portable, and moving stations (STAs) within a local area**.**
- **5.4 Purpose:** The purpose of this standard is to provide wireless connectivity for fixed, portable, and moving stations within a local area. This standard also offers regulatory bodies a means of standardizing access to one or more frequency bands for the purpose of local area communication.
- **5.5 Need for the Project:** The reason for this project is to incorporate accumulated maintenance changes (editorial and technical corrections) into 802.11-2007, and roll up of approved amendments to the standard. The approved amendments as of the filing of the revision PAR include IEEE 802.11k-2008, IEEE 802.11r-2008, and IEEE 802.11y-2008 amendments

Option 2: Sample Amendment Language

- **Amendment P802.11aa**
- **2.1 Title:** IEEE Standard for Information Technology - Telecommunications and Information Exchange Between Systems - Local and Metropolitan Area Networks - Specific Requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications - ***Amendment: MAC enhancements for robust audio video streaming***
- **5.2 Scope:** ***This amendment specifies enhancements to the 802.11 MAC (Medium Access Control)for robust audio video streaming, while maintaining co-existence with other types of traffic.*** The MAC enhancements specified in this amendment enable:
  * Graceful degradation of audio video streams when there is insufficient channel capacity, by enabling packet discarding without any requirement for deep packet inspection,
  * Increased robustness in overlapping BSS environments, without the requirement for a centralised management entity,
  * Intra-Access Category prioritization of transport streams by modifying EDCA timing and parameter selection without any requirement for deep packet inspection,
  * Improved link reliability and low jitter characteristics for multicast/broadcast audio video streams,
  * Interworking with relevant 802.1AVB mechanisms (802.1Qat, 802.1Qav, 802.1AS)
- **5.4 Purpose:** ***This amendment specifies a standard for robust audio video stream transport over 802.11 for consumer/enterprise applications*****.**

Option 2: Amendments, Sample Cont'd)

- **5.4 Purpose:** *This amendment specifies a standard for robust audio video stream transport over 802.11 for consumer/enterprise applications*.
- **5.5 Need for the Project:** 802.11 devices are widely deployed. While the devices, including 802.11n Draft 2.0 devices, provide reliable data and voice performance, the performance of video streaming is not always of acceptable quality. A set of enhancements to 802.11 MAC can improve video streaming performance significantly while maintaining data and voice performance.
- **8.1 Additional Explanatory Notes (Item Number and Explanation):**
- Section 5.2/5.5 Expanded titles for referenced documents: 802.1Qat: "Standard for Local and Metropolitan Area Networks - Virtual Bridged Local Area Networks - Amendment: 9: Stream Reservation Protocol (SRP)."

GET 802® STANDARDS

- 802: Overview & Architecture
- 802.1: Bridging & Management
- 802.2: Logical Link Control
- 802.3: Ethernet
- 802.11: Wireless LANs
- 802.15: Wireless PANs
- 802.16: Broadband Wireless MANs
- 802.17: Resilient Packet Rings
- 802.20: Mobile Broadband Wireless Access
- 802.21: Media Independent Handover Services
- 802.22: Wireless Regional Area Networks

IEEE 802.11™: WIRELESS LOCAL AREA NETWORKS (LANs)

IEEE 802.11-2007 IEEE Standard for Information technology—Telecommunications and information exchange between systems—Local and metropolitan area networks—Specific requirements—Part 11: Wireless LAN Medium Access Control (MAC) and Physical Laye (PHY) Specifications

- An interpretation is available.

IEEE 802.11k™-2008 IEEE Standard for information technology—Telecommunications and information exchange between systems—Local and metropolitan area networks—Specific requirements Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications - Amendment 1: Radio Resource Measurement of Wireless LANs

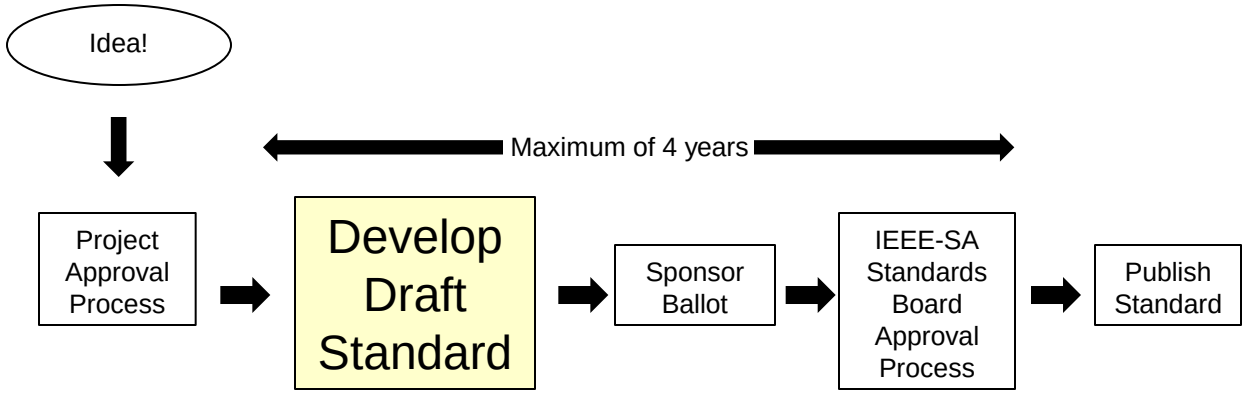
IEEE 802.11n™-2009 IEEE Standard for information technology—Telecommunications and information exchange between systems—Local and metropolitan area networks—Specific requirements Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications - Amendment 5: Enhancements for Higher Throughput

IEEE 802.11p™-2010 IEEE Standard for information technology—Telecommunications and information exchange between systems—Local and metropolitan area networks—Specific requirements Part 11: Wireless LAN

IEEE 1622 PAR Language

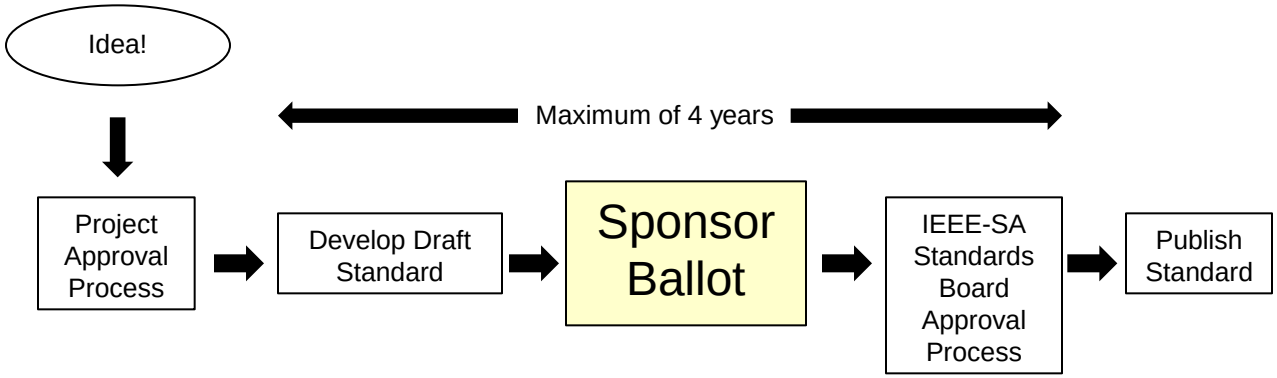
- **2.1 Title:** Standard for Electronic Distribution of Blank Ballots for Voting Systems
- **5.2 Scope:** This standard specifies electronic data interchange formats for blank ballot distribution, primarily to satisfy the needs of the UOCAVA (Uniform and Overseas Citizens Assistance in Voting Act) and MOVE (Military and Overseas Voter Empowerment) Acts. Subsequent standards may address other requirements for electronic data interchange formats used by components of voting systems for exchange of electronic data. This scope does not include return of cast ballots by electronic means.
- **5.4 Purpose:** This standard defines common data interchange formats to allow export of blank ballots from voting systems, primarily to facilitate the casting of ballots by military and overseas voters.
- **5.5 Need for the Project:** This standard will facilitate the casting of ballots by military and overseas voters, as distributing blank ballots to military and overseas voters can be lengthy and preclude returning the ballots in a timely manner.
- **8.1 Additional Explanatory Notes (Item Number and Explanation):** We are reducing scope to get an initial standard for the 2012 US election. We plan later to expand our scope for a subsequent standard to cover other voting systems electronic data interchange issues.

IEEE Standards Development:
Draft Development



- Working group (WG) is created/maintained under policies and procedures (P&P) of the sponsoring committee
- WG officers are designated to start the development of the standard
- Write the draft of the standard
- Submit finalized draft for Mandatory Editorial Coordination (MEC) to ensure conformance with IEEE requirements.

IEEE Standards Development:
Sponsor Balloting



- A ballot group is formed using an electronic balloting system called myProject/myBallot™ .
  - Composition of that balloting group cannot change when the ballot is initiated.
- A sponsor ballot is initiated with the draft, to be reviewed, commented, and voted by the ballot group.
  - Needs 75% return response rate from the ballot group, and needs 75% affirmative(approved) votes
- WG reviews all the approved and disapproved votes with comments submitted by the ballot group.
- Make a reasonable attempt to resolve all negative votes
  - Add or revise materials as suggested
  - Submit responses to the comments
- Recirculate the revised draft standard and comments out to the ballot group .

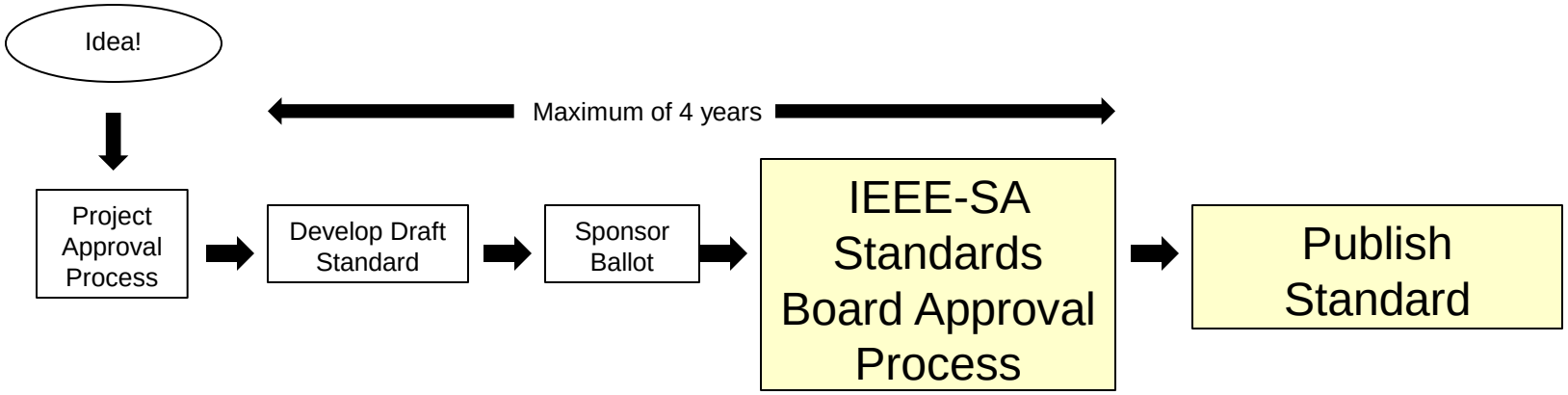
Creating a Web Account and MyBallot/myProject Access/Membership Services

- **Accessing the myProject system requires an IEEE Web Account:**
  https://webapps1.ieee.org/WebAccount/Registration

- **MyBallot /MyProject Link:**
  https://development.standards.ieee.org/my-site/home

Membership Services:
http://standards.ieee.org/membership/index.html

IEEE Standards Development:
Approval Process to Publication



- Submit the final draft standard to Standard Review Committee (RevCom).
- RevCom reviews the submitted documents and materials, and makes a recommendation to IEEE-SA Standards Board for an approval of the draft standard.
- IEEE-SA Standards Board reviews the recommendation and approve the draft standard.
- Publish Standard
- Complimentary copies sent to the WG.

Policy Changes

- Reaffirmation/Stabilization
- Interpretations
- ANSI Balance Rule
- Invited Experts
- Match Rule
- Public Notice/Patent Disclaimer

Reaffirmation/Stabilization

New Process for Maintaining Active Standards

- In June 2011, the IEEE-SA Board of Governors (BoG) and Standards Board (SASB) approved a new process for maintaining active standards.
- Changes are reflected in the policies and procedures:
  - SASB Bylaws
  - SASB Operations Manual
- The changes are available online at http://standards.ieee.org/about/sasb/procom/reaff-changes.pdf

Benefits

- The IEEE-SASB, which is comprised of appointed volunteers who oversee the standards development process, determined that it was important to:
  - Streamline/simplify the maintenance process to assist participants in complying with the policies and procedures of both IEEE and ANSI
  - Offer Sponsors and Working Groups additional time to review and complete a revision cycle
  - Enable Sponsors to focus on revisions of standards that require maintenance action, rather than a diffusion of Sponsor efforts to meet administrative requirements for reaffirmation or stabilization
  - Have a process that permitted a standard to be revised when addressing comments during maintenance so that IEEE standards will remain pertinent and of high technical value

Rationale

- Various options were considered and it was determined that the new process:
  - Was simplest and least taxing on volunteer resources
  - Allowed standards developers to concentrate on keeping IEEE standards relevant
  - Reduced IEEE's legal risk associated with outdated standards by making needed revisions where warranted by the Sponsor, Working Group, and Sponsor Balloting Group

Changes

Effective Jan 1, 2012

- There will be no new reaffirmation or stabilization ballots
- The only actions available to Sponsors will be:
  - Revision
  - Amendment/Corrigendum (does not impact maintenance cycle)
  - Withdrawal
- Standards will have a 10 year maintenance cycle (i.e., extended from 5 years to 10 years after the last date of approval or maintenance action)
- The status for a standard will be either **active** or **inactive**
- All standards must have a revision approved by the IEEE-SASB prior to the close of Year 10 in order to remain active
- Any standard not approved as a revision will become inactive after Year 10

Categories of Inactive Standards

- ***inactive-superseded:*** These standards have been replaced with a revised version of the standard, or by a compilation of the original active standard and all its existing amendments, corrigenda, and errata.

- ***inactive-reserved:*** These standards are removed from active status through an administrative process for standards that have not undergone a revision process within 10 years.

- ***inactive-withdrawn*** *(valid for standards categorized after 1 January 2012)**:*** These standards have been removed from active status through a ballot where the standard is made inactive as a consensus decision of the balloting group.

Revisions

- A revision ballot may result in:
  - Changes to the standard
  - Changes to only the references or bibliography
  - No changes at all

Reaffirmation/Stabilization Transition Plan

A. Standards reaffirmed/stabilized prior to 1 Jan 2012 – use the latest of the following dates to complete the revision process or standard will be transferred to inactive status:
   - By 31 December 2018 – 7 years after start of new program, or
   - 10 years from initial approval, or
   - 10 years from last maintenance action

B. Reaffirmation/Stabilization in invitation/ballot on 1 Jan 2012:
   - 1 year to complete (approved at the December 2012 SASB meeting)
   - If not completed by 31 Dec 2012, then item A applies

C. No new reaffirmation/stabilization invitations permitted after 31 Dec 2011

Input from Users of a Standard

- Users (those who use or implement a standard) can notify Sponsors or the IEEE if they believe a revision should occur prior to 10 years:
  - 1) In the front matter of each standard, users are notified that they can contact the Secretary of the IEEE-SASB to submit issues/concerns
  - 2) Users can contact the Sponsor directly online, or can contact a Staff Liaison who would be able to provide contact information or pass along the issues/concerns to Sponsors
  - 3) Sponsors can revise, amend or withdraw their standards at any time prior to Year 10
  - 4) An inaction on the Sponsor's part can be appealed to the IEEE-SASB where an appeal hearing can be performed

American National Standards

- An ANS can be revised prior to Year 10 if deemed appropriate
- Any standard that is currently an ANS will need to report to the administrator of the Standards Review Committee (RevCom) during Year 5 and explain whether a revision is in progress, or whether a revision is slated to be completed within the next 5 years
- IEEE has informally submitted the procedural changes to ANSI. No objections were obtained. The updated policies and procedures will be submitted to ANSI for audit in early 2012 along with all other 2011 procedural changes.

Interpretations

Elimination of Interpretations

- The IEEE-SA Standards Board approved a proposal to eliminate issuing interpretations in June 2011
- Current practice: Interpretations should not constitute an alteration to the original standard
  - At present, they are permitted to provide meaning to text that is ambiguous

Interpretations - Rationale

- Inefficient and a risk
  - Interpretation responses made in an attempt to clarify ambiguous text to be derived from a process that does not inform all materially interested parties of the activity
  - Does not require consensus to be achieved through the Sponsor balloting process

Interpretations - Solution

- More sensible to simply funnel comments on standards to Sponsors for handling
  - Any document changes would appear in a revision amendment/corrigendum
  - All require PARs – an open process & consensus through balloting
- Therefore interpretations as discrete documents should be discontinued

Interpretations – Going Forward

- Elimination of Interpretations
  - In order to maintain ANSI accreditation, we are required to have an interpretations policy.
    - Our interpretations policy can be that we do not supply Interpretations
- Changes will be effective 1 January 2012
- Changes to Ops Man, ByLaws, etc
  - "The IEEE does not offer interpretations of its standards"

Balance Rule

ANSI Essential Requirements-Balance Rule

- ANSI Essential Requirements require that interest categories for "safety-related" standards balloting can not be greater than 1/3 of balloters
- ANSI's audit of IEEE-SA's procedures for 2009 determined that
  - IEEE SA's current rule that balance is achieved if no one classification is 50% or more

ANSI – Balance Rule

- "Safety Standard" was not defined or included by ANSI's rule
- IEEE left with three choices
  - Adopt the 1/3 rule across the board
  - Define "safety standards"
  - Implement the 1/3 rule if the word "safety" was included anywhere in the document

ANSI – Balance Rule Resolution

- Changing the ANSI Essential Requirement would be difficult
- After significant deliberation, the Standards Board approved a motion:
  - Balance will be achieved by not permitting any single interest category to comprise more than 1/3 of the Sponsor balloting group
- Other categories can be considered beyond user, producer, general interest, etc.

ANSI – Balance Rule Going Forward

- Changes to IEEE- SASB Ops Man to be implemented 1 March 2012
  -
- A Standards Board AdHoc will continue to create education material and to address implementation issues

Balance Rule Implementation

- Here are the new guidelines:
- 1) If your invitation was opened **before 1 March 2012 you follow the 50% balance rule.**

- **If for some reason, the invitation goes stale (i.e., the initial ballot does not open within 6 months of the invitation close date), then a new invitation will need to occur under the 1/3 balance rule.**

- 2) If your invitation opens **on or after 1 March 2012 you follow the 1/3 balance rule.**

- So for example: If the invitation open date is Feb 29th, they would follow the 50% balance rule. If it opens on Mar 1, it will follow the 1/3 balance rule.

Invited Experts

Invited Experts - Elimination

- Prior to 1998, IEEE membership was required to ballot on an IEEE standard
  - IEEE membership requires certain technical/educational credentials
    - Having invited experts beneficial then
- 1999 IEEE-SA created & IEEE membership no longer needed, just IEEE-SA
  - No technical/educational credentials

Invited Experts – Going Forward

- Invited Experts in IEEE's balloting process is no longer needed
  - Anyone can qualify for membership or can pay the per-ballot fee
- Removing Invited Experts will create an equal participation field for all those interested in an IEEE ballot
- Effective 1 January 2012 "Invite an Expert" will not be available

Match Rule

Match Rule - Elimination

- Current Practice: Title/Scope/Purpose of the PAR for new and revision projects must match that of the draft document
- Proposed change: Update ballot announcement in myProject to make it clear that one of the balloters responsibilities is to ensure that the scope of the draft is within the scope of the work authorized by the PAR

Match Rule - Rationale

- If the scope of an approved standard were to go beyond the scope of the PAR
  - Materially interested persons may not have the opportunity to participate
    - Fail to meet openness
- RevCom not to make judgment if scope of document is within scope of PAR
- Match rule created unnecessary Modified PAR requests

Match Rule – Going Forward

- It is the job of the balloters to determine if the scope of the final standard is within the scope of the work authorized by the PAR
  - It is okay for the scope of the draft to be less than the scope of the PAR
- Eliminate the Match Rule on January 1, 2012

Public Notice/Patent Disclaimer

Public Notice/Patent Disclaimer

- For published documents, at present, there are two options for frontmatter disclaimer language based upon whether or not a patent letter of assurance (LOA) was on file at the time of publication
- Goal is to have 1 public disclaimer in the document
  - Avoid the possibility of incorrect statement

Public Notice/Patent Disclaimer

- Creation of 1 disclaimer will eliminate:
  - Miscommunication if an LOA is accepted
  - Timing of the receipt of the patent LOA if received after a standard is approved
  - Misunderstanding by implementers as to whether or not they should refer to the patent listing for LOAs
- Effective January 2012

Questions

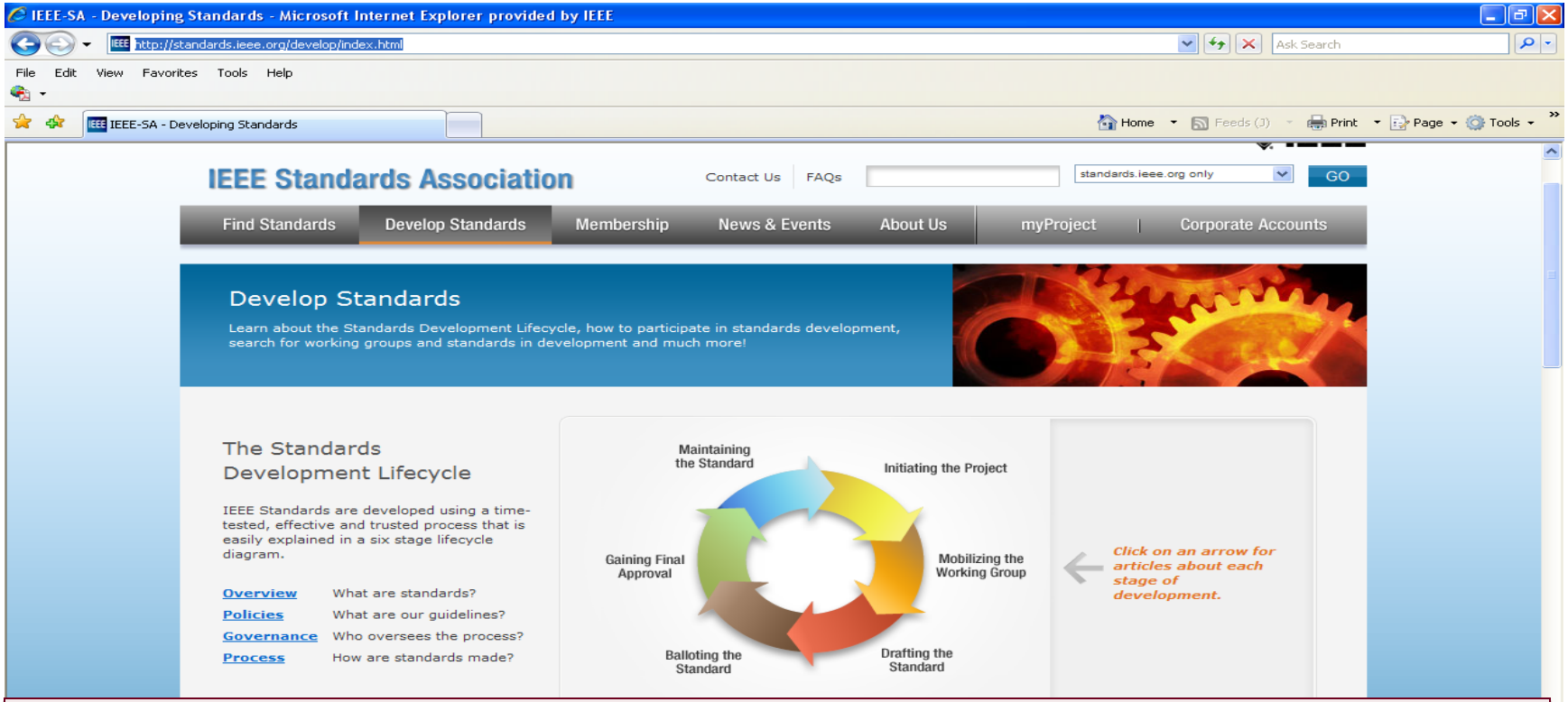
- URL for FAQs: http://standards.ieee.org/faqs/reaff.html
- The current version of the IEEE-SA Standards Board Bylaws is available at:
  http://standards.ieee.org/develop/policies/bylaws/index.html (HTML version)
  http://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf (PDF version)
- The current version of the IEEE-SA Standards Board Operations Manual is available at:
  http://standards.ieee.org/develop/policies/opman/index.html (HTML version)
  http://standards.ieee.org/develop/policies/opman/sb_om.pdf (PDF version)

Thank You!

Contact Information

Malia Zaman, TPD Program Manager
Email: m.zaman@ieee.org
Tel:732 562 3838

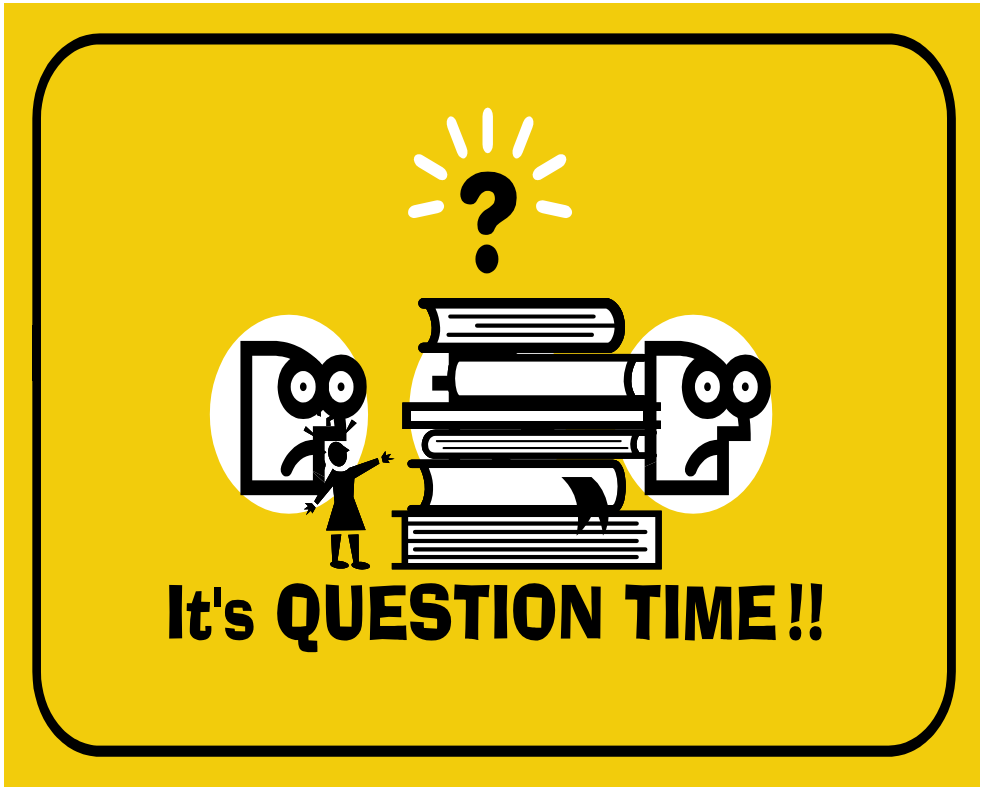
Resource Links



Additional Information:

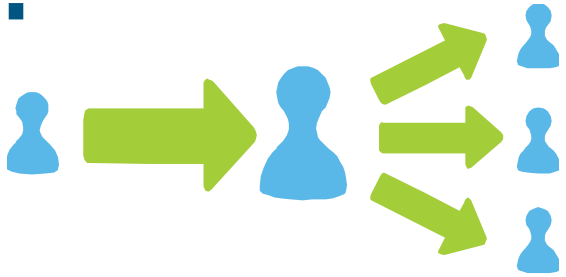
http://standards.ieee.org/develop/index.html

Comments/Questions:



IEEE

For more information…



Contact:

Malia Zaman
Program Manager
Technical Program Development
Phone: +1 732 562 3838
Email: m.zaman@ieee.org