IEEE Standards Association (IEEE-SA)
Driving Global Innovation Through Standards and Consensus Building

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Agenda

Introduction to IEEE-SA
How standards development fits within IEEE
The IEEE standards development process
Standards and Regions/Sections
IEEE Today

The world’s largest professional association advancing technology for humanity

MEMBERS
Over 400,000

COUNTRIES
Over 160

CONFERENCES
Over 1200 per year

PUBLICATIONS
Over 30% of world’s electrotech literature

STANDARDS
Over 900 active standards
Over 500 active projects
Collaboration is our Foundation

IEEE brings people and technology together for mutual benefit
IEEE’s Role in Standards

IEEE is a leading global developer of standards that underpin many of today’s essential technologies

- IEEE is a central source of standardization in both traditional (e.g., power and energy, information technology, telecom, etc.) and emerging fields (e.g., nanotechnology, smart grid, cloud computing, etc.)
- Standards are developed in a unique environment that builds consensus in an open process based on input from all interested parties
- Draws on the expertise of the IEEE's 42 societies and technical councils
IEEE Standards

Span a broad spectrum of technologies

Examples:
- Aerospace Electronics
- Broadband Over Power Lines
- Broadcast Technology
- Clean Technology
- Cognitive Radio
- Design Automation
- Electromagnetic Compatibility
- Green Technology
- Ethernet/Wi-Fi
- Medical Device Communications
- Nanotechnology
- National Electrical Safety Code
- Organic Components
- Portable Battery Technology
- Power Electronics
- Power & Energy
- Radiation/Nuclear
- Reliability
- Transportation Technology
- Test Technology
IEEE-SA Standards Grow Markets

Evolution of traditional country-based models for standards development to **market-driven models**

- **Open Process**
  - Open membership
  - Open participation

- **Consensus-based**
  - Based on WTO core principles
  - Collaboration

- **eTools**
  - Facilitate remote participation, lessening travel costs

- **Global Community**
  - Participation from around the world

**Standardization is borderless:**

Global standards sustain products and services for implementation and use by customers in a globalized world
Rigorous Standards Process

The widely respected IEEE-SA standards-development process, which adheres to the WTO/TBT Principles, produces results that reflect the collective consensus view of participants and enable industry to achieve specific objectives and solutions.
Two Types of Standards Development

**Individual method**
- Participants are “individuals”: i.e., people
- Individuals represent themselves
- Each individual participant has one vote
- Ballot groups are made up of a minimum of 10 individuals
- Ballot group participants must be IEEE-SA individual members

**Entity (Corporate) method**
- Participants are “entities,” i.e., companies, universities, government bodies, etc.
- Designated representative and alternate represent the entity
- Each entity has one vote
- Standards project initiation requires 3 entities to commit to membership and payment of appropriate dues
- Entity sends representatives to participate in standards development meetings
Who Participates?

- Industry
- Government agencies (regional or national)
- Academia
- Consumers
- Standard Development Organizations
- Civil Society organizations
- Research Organizations
- Consultants
- ...and many more!

- Open membership, participation, and governance
- No restrictions
- Any individual or organization
- Any industry or size of company
IEEE Standards Development Process

1. Identify a Sponsor
2. Idea!
3. Project approval
4. Develop draft standard
5. Sponsor ballot
6. Standards Board approval
7. Publication
8. Revise or withdraw standard

IEEE STANDARDS ASSOCIATION
What Is myProject™?

- A free web-based tool that facilitates the IEEE Standards process
- Database that holds information related to the standards process
- A tool used by IEEE and SA members, staff, and whomever wants to participate in the standards process
- An IEEE Web Account is required for myProject
myProject – a Gateway to IEEE-SA Information

- [https://development.standards.ieee.org/my-site](https://development.standards.ieee.org/my-site)
- “Manage Activity Profile” to receive notifications in areas of interest

You do not have to be an IEEE or IEEE-SA member to obtain an IEEE web account!
How myProject™ Is Used in the Standards Development Process

Standards Development Process

Committee Formation
Standards Developing Committees and Working Groups are formed

Project Authorization
A PAR is submitted and approved

Sponsor Balloting
A ballot group is formed, Sponsor Balloting begins, the draft is modified until consensus is reached

Publishing
The Standard is published

Idea Formation
Ideas for standards are proposed

Drafting a Standard
Working Groups create a draft for a standard

Approval*
The Standards board approves the draft and it becomes a standard

* (coming soon to myProject™)

Do not directly use myProject™

Directly use myProject™
How to Start a Standard

- Any individual or company with a technical idea may come up with the idea for a new standard.

Determine need for standard
- Referred to as a “Sponsor”
- Sponsor provides guidance and support from a technical standpoint.

Find a technical group within IEEE to “sponsor” the project
- Referred to as a “Sponsor”
- Sponsor provides guidance and support from a technical standpoint.

Submit a Project Authorization Request (PAR) form for approval by New Standards Committee (NesCom)
- Develop scope and purpose of the project.
PAR (Project Authorization Request)

- A detailed document that essentially states who is sponsoring/working on the project, the reason the project exists and the project’s intent
- Used to enter information into IEEE databases regarding the proposed standard and to inform others about that project
- An approved PAR is needed before official work is begun on a standard
- An approved PAR is valid for 4 years
- Each PAR is assigned a project number by which the published standard will eventually be known
What Is NesCom?

• New Standards Committee

• Reviews all PARs and provides recommendations to the IEEE-SA Standards Board regarding their approval

• NesCom can only accept PARs from Sponsors with approved P&Ps (Policies & Procedures) on file - a list of sponsor P&P’s can be found here: https://development.standards.ieee.org/pub/view-sponsor-pnps

• More information on finding a project sponsor can be found here: http://standards.ieee.org/develop/sponsor.html
Project Approval Process

Identify a Sponsor

Complete Project Authorization Request (PAR)

Submit to NesCom Secretary through myProject™

Is the PAR complete?

No

Is the PAR approved?

No

Draft Standards development continues

Yes

Review by NesCom and Standards Board

Yes

Yes

No
Mobilizing the Working Group

• Working Groups are open groups
  • Comprised of individuals for individual standards projects or representatives from entities for corporate standards projects
  • Participants in WGs have technical expertise, knowledge, and dedicated interest in the technology being standardized
  • Individuals and/or corporations in working groups work collaboratively to reach consensus in order to move the project forward
Development of the Draft Standard

Chair appointed by Sponsor → PAR approved → Form Working Group → Establish goals, deadline, and schedule → Draft document

Do changes need to be made?

- No → Document reviewed by working group’s technical editor → Input from IEEE Project Editor
- Yes → Revise document → Ballot

IEEE STANDARDS ASSOCIATION
Tips for Draft Development

• Develop an outline
• Assign leads among working group members to developed clauses of the draft
• Avoid writing document in meetings
• Refer to *IEEE Standards Style Manual* often for document structure and utilize draft template
• Utilization of a technical editor, to gather inputs and ensure technical consistency
• Do not make the draft, or contributions to the draft, public
Ballot = Vote

Interested parties are invited to ballot on draft standards

IEEE-SA Members receive document, review it, and vote on it
Sponsor Ballot Invitation & MEC

- **Mandatory Editorial Coordination (MEC)**
  - Once the working group has an approved draft for ballot (after approval from working group/ Subcommittee/ Sponsor), they submit the draft for MEC through myProject™
  - Typically 30 days

- **Ballot Invitation**
  - Working Group Chair initiates the Invitation in myProject™
  - Typically 30-day invitation period
  - Must have balance within ballot group

**Usually done in parallel**
Sponsor Ballot & Membership

• Membership requirements
  • Individual Method
    • IEEE–SA Individual Membership is needed to join an individual ballot
    • Or pay a per-ballot fee
  • Corporate Method
    • At least a Basic Corporate membership is needed to join an entity ballot
    • Or pay a per-ballot fee
Determining the Ballot Group

- All IEEE-SA ballot groups must be balanced
- No one interest category can be more than 33% of the ballot group
- Typical categories include
  - Producer
  - User
  - Academia
  - Utility
  - General Interest
- Working Group chair must address any balance issues prior to close of ballot group formation with assistance of IEEE-SA staff
Balloting the Standard – Sponsor Ballot

- Working Group Chair initiates the Request to Ballot in myProject™
  - Typically a 30-day ballot
  - Balloters can approve, disapprove, abstain
- Consensus must be reached for the standard to move forward (75%/75%)
- Comment Resolution period begins after ballot closes
  - Resolve comments (accepted, rejected, revised)
    - Often handled by a ballot resolution committee formed by the working group
- Initiate Recirculation(s)
  - 10 days
  - Draft should show (highlight) changes
Sponsor Ballot

1. Form the balloting group
2. Ballot the document
3. Is there a 75% response to close ballot?
   - Yes: Resolve / rebut comments
   - No: Ballot fails; either revise document or start over
4. Ballot fails; either revise document or start over
5. Is there a 75% affirmative vote?
   - Yes: Is it necessary to revise draft?
     - Yes: Revise document
     - No: Recirculate unresolved negative comments, and rebuttal
   - No: Recirculate revised document, unresolved negative comments, and rebuttal
6. Is 75% affirmative maintained?
   - Yes: Are there any new negative votes?
     - Yes: Recirculate unresolved negative comments, and rebuttal
     - No: Draft standard goes to Standards Board approval process
   - No: No
Submit the final draft standard to Review Committee (RevCom)

RevCom recommends approval to IEEE-SA Standards Board

IEEE-SA Standards Board approves the draft standard

Publish standard
Submitting to RevCom

- RevCom - The Standards Review Committee
  - Once a project has achieved approval within the balloting group, it can be submitted to RevCom for final review
- RevCom makes recommendation to the SASB who makes final approval
- Next step is IEEE Editorial
  - The IEEE-SA staff editor will contact the WG Chair to process the draft for final publication
Approval of the Draft Standard

1. Complete RevCom Submittal Form
2. Submit Form, with all supporting material, to RevCom Secretary through myProject™
3. Is submittal complete?
   - Yes: Submit form to RevCom Secretary through myProject™
   - No: Return to Sponsor to address
4. Submittal reviewed by RevCom
   - Yes: Did RevCom recommend approval?
   - No: Return to Sponsor to address
5. Did RevCom recommend approval?
   - Yes: Reviewed by IEEE-SA Standards Board
   - No: Return to Sponsor to address
6. Did Standards Board approve?
   - Yes: Publish standards
   - No: Return to Sponsor to address
Post-Approval and Publication

Draft standard approved → Final Edit → Pages of standard are reviewed by working group chair → Is document ready for both electronic and print publication?

No →

Yes → Distribute standard
Maintenance

• Standards must have a revision approved by the IEEE-SA Standards Board prior to the close of year 10 in order to remain active
• Any Standard without an approved revision will become inactive after year 10
• A revision action can result in:
  • Changes to the Standard
  • Changes to only the references or bibliography
  • No changes
Project Status?

- You can search for a project at: http://standards.ieee.org/develop/project/

Use the search bar above if you know what you are looking for, or browse by topic under “Develop Standards”
IEEE-SA Presence

- Globally recognized standards
- Clear IPR policy
- Independent global community
- Leverages the breath of 40+ technical areas

IEEE-SA Strengths

- Over 100 Smart Grid standards
- Flagship transport layer standards in communications (IEEE 802)
- 400-500 standards focused on the power and energy sector, etc.
- Open standards process
Standards + Regions/Sections = ACTION

Standards touch your lives and the lives of all of your Region and Section members

Technology is evolving

Standards developers are in your area

New standards projects are always being suggested

Promote standards education to engage with students, faculty, and practitioners (training, funding, publication in eZine)

http://www.standardsuniversity.org/

Check out standards.ieee.org for projects, meetings, and Working Groups
Helpful Information

• How to become an IEEE Standards Association Member
  http://standards.ieee.org/membership/

• How to get a MyProject™ Account
  https://development.standards.ieee.org/my-site/home

• User guide – walks through myProject™ and has instructions for all the process steps

• Complete myProject™ documentation
  • https://mentor.ieee.org/etools_documentation/bp/myProject
Thank You!

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