

IEEE STANDARDIZATION ACTIVITIES

IEEE R8 COMMITTEE MEETING, 25 MARCH 2023

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AGENDA

- **Why Standards matter**
- **Digital transformation: challenges**
- **How IEEE SA works**
- **Some examples (technical, socio-technical, planet positive)**

IMAGINE A WORLD WITHOUT STANDARDS – DRIVERS FOR STANDARDS

Our devices would not work



Our devices would not be affordable



Our devices could not be offered for sale



Technology



Business
/
Markets/
Value
Chains



Legislation/regulation/
policy/society

Advancing Technology for Humanity

- Everything digitized, connected, computerized
- **New wave of convergence:** Shannon (information theory) and Wiener (control theory), IT and OT, digital and physical

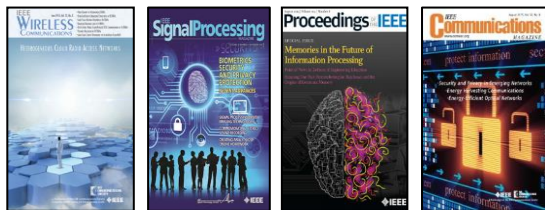


- **Automated** mixed reality **cyber-physical systems**
- **continuous physical/virtual interactions**

Challenges

- Cross sector
- Horizontal vs vertical
- Technical vs contextual (ethics)
- ***Safe the planet for humanity***

IEEE Approach to Standardization



- IEEE-SA's process aligns with the WTO and OpenStand principles



Transparency	Cooperation
Openness	Due Process
Impartiality & Consensus	Availability for deployment

- IEEE SA encourages a **bottom-up, market-driven, and inclusive** standards development paradigm
 - DIRECT PARTICIPATION** of individuals or organizations from all over the world
 - GLOBALLY APPLICABLE** standards
 - OFFERED FOR ADOPTION** with options
 - MoUs and PSDO **AGREEMENTS** e.g.



- Whole product lifecycle support** (see next slide)
- Latest **research input** from Technical Societies e.g.



IEEE SA PROGRAM PORTFOLIO



Industry Connections

Exploring & incubating
new tech & its use



Standardization

Creating markets & protecting public
safety through standards development



Membership

Getting connected to experts &
resources & enabling advanced
participation options



Conformity Assessment

Providing confidence & assurance
& accelerating market adoption



Open Source

Providing a community-powered
platform to support open source projects



Alliance Management

Providing program support to
alliances & trade associations



Registries

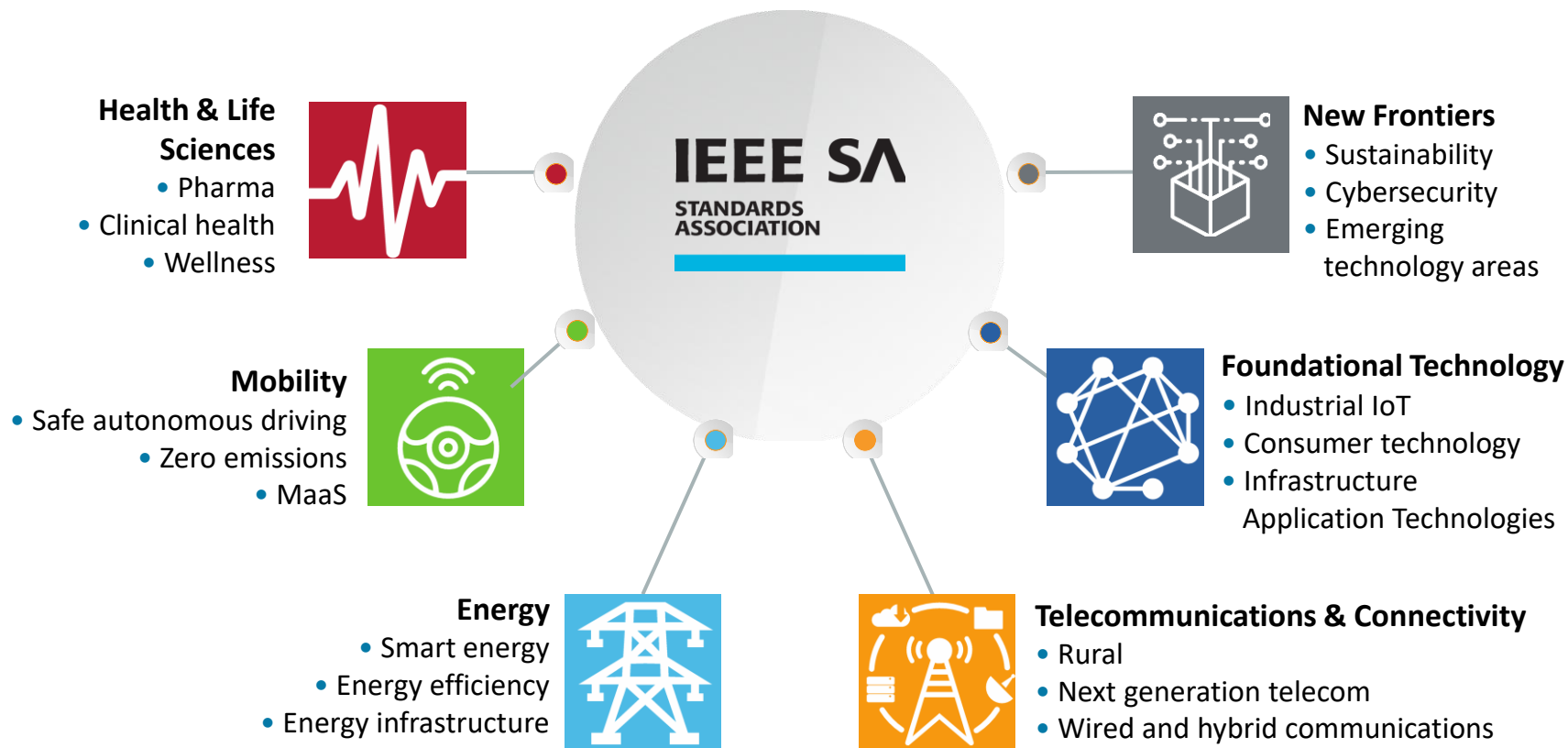
Providing unique identifiers to support
global compatibility & interoperability



Industry Affiliate Network

Assisting industry organizations in accelerating
development and adoption of global standards

PRACTICES (Centers-of-Competence)



Addressing global problems through community and consensus.



- **All modes of transportation:** *roadways, railways, airways, seaways*
- E.g. Mobility Practice - **Road**



Workstream I –
Smart, Safe &
Trustworthy
Transportation
Zero accidents



Workstream II –
Sustainable
Transportation
Zero emissions



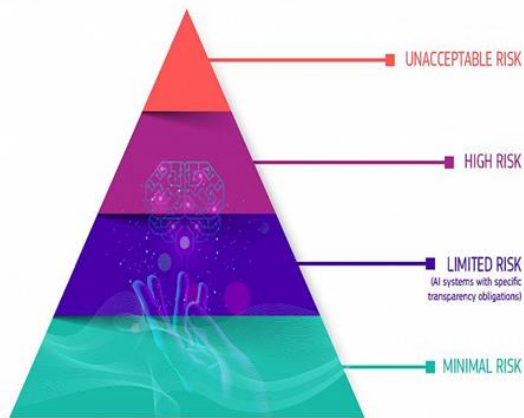
Workstream III –
Mobility-as-a-Service,
Traffic Management
No congestions,
inclusive mobility

e.g. Standards for AVs

- Communication (e.g. 802.1/3/11...)
- Sensors
- Dependability life-cycle (P2851)
- Ethically aligned design (e.g. 7000)
- Electronic design automation
- SW Engineering

IEEE STANDARDS FOR AI GOVERNANCE

Industry Connection 'Ethical Aligned Design (EAD) of Autonomous Systems' *7000 series of standards launched*



Draft EU AI Act



EAD, Version 1
December, 2016



EAD, Version 2
December 2017



EAD, Edition 1
March 2019



BKCenter Chart
January, 2020



EC JRC Report

**Acknowledges IEEE standards
to be relevant in support of the
EU AI Act**

In partnership with companies
selected IEEE standards are
provided at no cost to you
through the **IEEE GET Program**
incl. 7000, 7001, 7002, 7007, also
2089

THE INITIATIVE



What is Planet Positive 2030?

Planet Positive 2030 is an open, global initiative that is focused on developing practical paths to achieve a sustainable planet—a Planet Positive future for 2030 and beyond.



What do we mean by “Planet Positive?”

“Positive” = identifying how to ‘give back’ more to the Planet than is ‘removed’ (versus “climate neutral”) and not harming the biosphere/planet.



planet 20 positive 30

- Under the IC ‘Sustainable Infrastructures & Community Development Program’
- An initiative to identify pathways to net planet positive by 2030
- **Accountable Sustainability by Design**
- Visit ieeesa.io/PP2030
- **IEEE P7800:** Recommended Practice for Addressing Sustainability, Environmental Stewardship and Climate Change Challenges in Professional Practice





THANK YOU

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ADDITIONAL INFORMATION FOR REFERENCE

IEEE STANDARDS ASSOCIATION <https://standards.ieee.org/>

Stages in the IEEE Standardization Process

Working with a framework of open participation and diversity, IEEE's unique, borderless standardization paradigm espouses competition and at the same time collaboration among a wide variety of stakeholders to create standards that drive innovation and national and global growth.

2. PROPOSAL

The group submits a proposal for a standard. If approved, the project moves forward and a Working Group is formed.

4. VOTING

A diverse group of individuals or entities with an interest in the standard votes to approve/disapprove the draft standard. Broad consensus must be obtained. If approved, the IEEE Standards Board votes on it.

1. IDEATION

A diverse group of expert individuals or organizations sees a need for a standard—e.g., to grow the market, ensure interoperability, spread adoption of a promising technology—and comes together to develop it.

3. DRAFTING

The Working Group makes agreements and compromises to create the standard with its technical specifications, often using existing technology/documentation contributed by one or more members of the group.

5. PUBLICATION and MAINTENANCE

Once the standard is approved, it is available for use around the world. Updates are made as needed during the lifetime.

IEEE STANDARDS READING ROOM

- 40 standards available at no charge for [reading-only access](#) - including:
 - **IEEE 2089-2021™** - IEEE Standard for an Age Appropriate Digital Services Framework Based on the 5Rights Principles for Children
 - **IEEE 7000-2021™** - IEEE Standard Model Process for Addressing Ethical Concerns during System Design
 - **IEEE 7005-2021™** - IEEE Standard for Transparent Employer Data Governance
 - **IEEE 7007-2021™** - IEEE Ontological Standard for Ethically Driven Robotics and Automation Systems
 - **IEEE 7010-2020™** - IEEE Recommended Practice for Assessing the Impact of Autonomous and Intelligent Systems on Human Well-Being
 - **C2-2012** - National Electric Safety Code

Browse Standards ⓘ

By Collection By Number By Topic By ICS Code **Reading Room** IEEE GET Program™ IEEE Standards Dictionary

IEEE Standards Reading Room

Standards in the Reading Room are available in "view only" format. Standards are available in recognition of their incorporation by reference in the U.S. Code of Federal Regulations (CFR) along with other initiatives.

[Sign Up for Alerts](#)

IEEE GET PROGRAM

About

The subsidized sponsorship of standards via IEEE GET Program helps expand the global reach of technical knowledge developed by industry, accelerates adoption of IEEE standards, contributes to an open knowledge community, promulgates open information exchange to foster innovation, and connects the IEEE brand with the development of world changing technologies for the benefit of humanity.

Below is the current list of standards available to you through the IEEE Get Program TM:

GET 802(R) Standards

GET 1622 Standard: Electronic Distribution of Blank Ballots for Voting Systems

GET IEEE/ANSI N42 Standards: Radiation Detection Standards

GET C95 Standards: Safety Levels with Respect To Human Exposure To Radio Frequency Electromagnetic Fields

GET 1680 Environmental Assessment

GET Design Automation Standards

For more information: <https://standards.ieee.org/products-services/ieee-get-program/>

IEEE SASB STANDING COMMITTEES

■ AudCom: Audit Committee

Responsible for all Standards Committee's rules for development of IEEE standards

■ NesCom: New Standards Committee

Reviews requests from Standards Committees for authorization to start developing an IEEE standard

■ RevCom: Standards Review Committee

Reviews the balloting process before an IEEE standard is approved for publication

■ PatCom: Patent Committee

Develops the policies and procedures for patents in IEEE standards

■ ProCom: Procedure Committee

Reviews all changes to the operating procedures of the IEEE SA Standards Board (SASB)

IEEE SASB AGENDAS*

- **IEEE Standards Board (SASB):** <https://standards.ieee.org/content/dam/ieee-standards/standards/web/governance/sasb/agenda.pdf>
- **Audit Committee (AudCom):** <https://standards.ieee.org/content/dam/ieee-standards/standards/web/governance/audcom/agenda.pdf>
- **New Standards Committee (NesCom):** <https://standards.ieee.org/content/dam/ieee-standards/standards/web/governance/nescom/agenda.pdf>
- **Patent Committee (PatCom):** <https://standards.ieee.org/content/dam/ieee-standards/standards/web/governance/patcom/agenda.pdf>
- **Procedures Committee (ProCom):** <https://standards.ieee.org/content/dam/ieee-standards/standards/web/governance/procom/agenda.pdf>
- **Standards Review Committee (RevCom):** <https://standards.ieee.org/content/dam/ieee-standards/standards/web/governance/revcom/agenda.pdf>

*Latest agendas will be uploaded to these links nearer the time.

ADDITIONAL RESOURCES

- **Standards Board (SASB):**
standards.ieee.org/about/sasb/
- **Board of Governors (BOG):**
<https://standards.ieee.org/content/ieee-standards/en/about/bog/index.html>
- **Guide for IEEE Standards for Policy Makers:**
standards.ieee.org/content/dam/ieeestandards/standards/web/documents/other/policymakers-guide-to-standards.pdf
- **IEEE GEPS:**
standards.ieee.org/about/intl/geps/index.html
- **IEEE GEPS Terms of Reference:**
<https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/geps-tor-jan-2021.pdf>
- **IEEE GEPS FAQs:**
<https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/geps-faq.pdf>
- **GEPS Repository (housed on iMeet Central):**