

IEEE Standards Association Tech Policy Work Overview

25 October 2017

RIPE Collaboration Working Group Meeting

Today's Discussion

- Introduction to IEEE and IEEE Standards Association (IEEE-SA)
- IEEE's work at the intersection of technology, policy and standards
- Brief overview of
 - IEEE Ethics Initiative
 - IEEE Digital Trust & Identity Program
 - IEEE Internet Initiative

About IEEE

World's Largest Professional Association Advancing Technology for Humanity

420,000+

Members



46

Technical Societies &
Councils



160

Countries



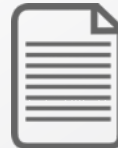
1,600

Annual Conferences



3,900,000+

Technical Documents



175+

Top-cited Periodicals



IEEE Standards Association

Mission: Provide a high quality, market-relevant standardization environment, respected worldwide

- An independent global community with an open standards development process
 - Proven process produces results that reflect the collective, consensus view of participants and enables industry to achieve specific objectives and solutions

IEEE Standards span a broad spectrum of technologies, such as

- | | | |
|------------------------------|------------------------------|------------------------------|
| ■ Aerospace Electronics | ■ Aerospace Electronics | ■ Aerospace Electronics |
| ■ Broadband Over Power Lines | ■ Broadband Over Power Lines | ■ Broadband Over Power Lines |
| ■ Broadcast Technology | ■ Broadcast Technology | ■ Broadcast Technology |
| ■ Clean Technology | ■ Clean Technology | ■ Clean Technology |
| ■ Cognitive Radio | ■ Cognitive Radio | ■ Cognitive Radio |
| ■ Design Automation | ■ Design Automation | ■ Design Automation |



IEEE Standards Association

Serving industry collaboration needs

- IEEE offers more than a globally open, rules-based standardization ecosystem
- For over 130 years, IEEE has been the place where new technology areas emerge, become visible for the first time and are thoroughly debated
- Where work matures, consensus is built and standards are established
- A global democracy of technical experts, with a formidable reputation of technical excellence in vast areas of technology and science, setting the stage for generations of scientists and technologists to advance technology for humanity

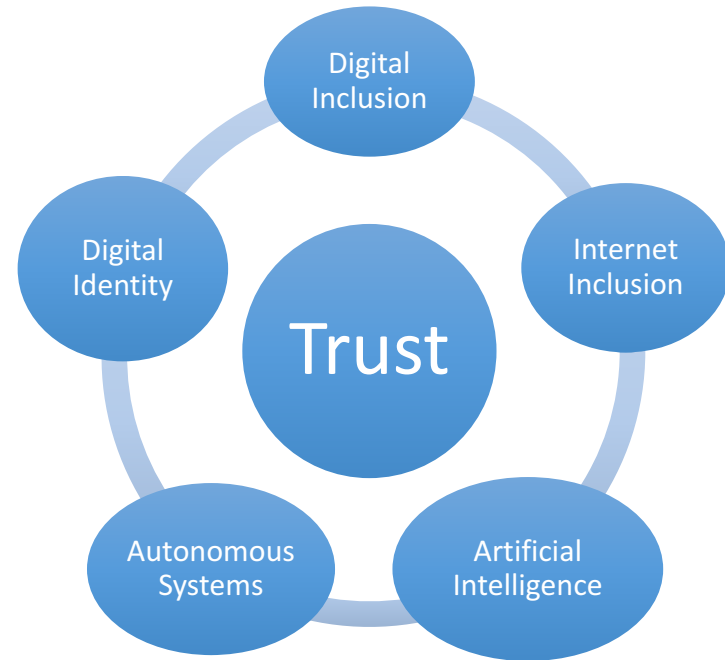
IEEE-SA and Technology Policy

- Technology Policy—one of four IEEE 2015-2020 goals
 - Leverage IEEE's technology-related insight to provide government, NGOs and other organizations, and the public with innovation and practical recommendations to address public policy issues
- Connect technologists with policy makers/venues to amplify the voice of the technical standards community
- Working at the intersection of technology and policy to advocate for and inform policy makers and other stakeholders about the IEEE standards development paradigm of collaborative, bottom up, technical, consensus-based open standards development
- Facilitate and promote technology policy environments that promote open, inclusive and transparent standards development
 - Goal is to foster global competition, provide building blocks for innovation, enable global interoperability, scalability, stability and resiliency, and contribute to the creation of global communities that advance technology to benefit humanity
- Develop and advocate contributions, positions and policies that promote best practices for open consensus and collaborative activities, including global standards and open participation

Integrated approach

Trust: Digital Inclusion, Digital Identity & Intelligent Systems

- Optimizing the relationship & work of initiatives & programs
 - Global Initiative for the Ethical Considerations in the Design of AI/AS
 - Digital Inclusion through Trust and Agency
 - IEEE Internet Initiative/Internet Inclusion
- Encouraging privacy & ethical responsibility in technology & use
- Educating and informing developers & users
- Identifying opportunities for technical oriented outputs that support interoperability & trustworthy solutions & models
- Advocating for & bolstering collective action for trust & agency



IEEE Global Initiative for Ethical Considerations of AI/AS

Intelligent Systems

The screenshot shows the IEEE Standards Association website. At the top right is the IEEE logo. Below it is the text "IEEE STANDARDS ASSOCIATION" and navigation links for "Contact", "FAQs", a search bar, and a dropdown menu set to "standards.ieee.org only" with a "GO" button. A horizontal menu contains "Find Standards", "Develop Standards", "Get Involved", "News & Events", "About Us", "Buy Standards", and "eTools". The main content area features a blue header with the title "The IEEE Global Initiative for Ethical Considerations in Artificial Intelligence and Autonomous Systems" and a sub-header: "An incubation space for new standards and solutions, certifications and codes of conduct, and consensus building for ethical implementation of intelligent technologies". To the right of the text is an image of a person in a futuristic, glowing environment. Below the header is an "INDUSTRY CONNECTIONS" section with a link to "The IEEE Global Initiative for Ethical Considerations in Artificial Intelligence and Autonomous Systems" and two download links for "ICAID" and "Ethically Aligned Design" documents. To the right is an "ABOUT" section with a paragraph stating the purpose of the initiative and a bulleted list of links: "View specifics regarding the Mission and deliverables for the Initiative.", "See a list of The Initiative's Executive and other Committees.", and "Learn more from Frequently Asked Questions.". Below this is a section for "Ethically Aligned Design, Version 1 - Request For Input" with a paragraph describing the document. At the bottom are two thumbnail images for "ETHICALLY ALIGNED DESIGN" documents, one labeled "v1" and the other "OVERVIEW".

IEEE STANDARDS ASSOCIATION Contact FAQs standards.ieee.org only **GO**

Find Standards | **Develop Standards** | Get Involved | News & Events | About Us | Buy Standards | eTools

The IEEE Global Initiative for Ethical Considerations in Artificial Intelligence and Autonomous Systems

An incubation space for new standards and solutions, certifications and codes of conduct, and consensus building for ethical implementation of intelligent technologies

INDUSTRY CONNECTIONS

The IEEE Global Initiative for Ethical Considerations in Artificial Intelligence and Autonomous Systems

ICAID

Download the IEEE Global Initiative *Ethically Aligned Design* document

Download the IEEE Global Initiative brochure

ABOUT

The purpose of this Initiative is to ensure every technologist is educated, trained, and empowered to prioritize ethical considerations in the design and development of autonomous and intelligent systems.

- [View specifics regarding the Mission and deliverables for the Initiative.](#)
- [See a list of The Initiative's Executive and other Committees.](#)
- [Learn more from Frequently Asked Questions.](#)

Ethically Aligned Design, Version 1 - Request For Input

Ethically Aligned Design: A Vision for Prioritizing Human Wellbeing with Artificial Intelligence and Autonomous Systems represents the collective input of over one hundred global thought leaders from academia, science, government and corporate sectors in the fields of Artificial Intelligence, ethics, philosophy, and policy.

◆ IEEE v1

◆ IEEE OVERVIEW

NEWS AND EVENTS

IEEE Global Initiative for Ethical Considerations of AI/AS

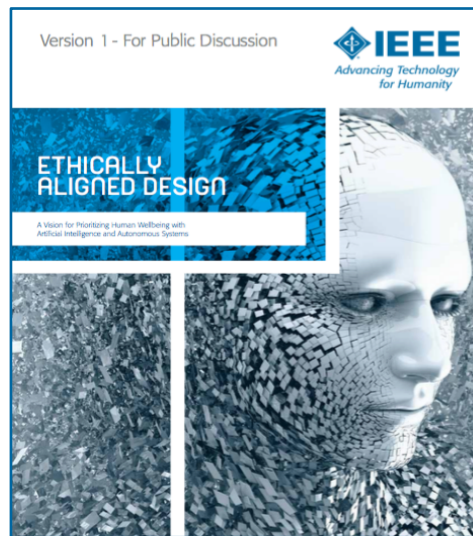
Overview

- Work begun in late 2015
 - Public launch as an Industry Connections Group, April 2016
- Over 200 AI / Ethics experts involved from the US, EU, Australia, India, China, Korea, and Japan
- Working on Ethically Aligned Design, version 2
- Eleven approved Standards Projects
- Events featuring Ethically Aligned Design in India, Japan, China, World Economic Forum, OECD, EU Parliament, and UN/ITU in Geneva
- 13 Working Groups
 - General Principles
 - Embedding Values into Autonomous Intelligent Systems
 - Methodologies to Guide Ethical Research and Design
 - Safety and Beneficence of AGI/ASI
 - Personal Data and Individual Access control
 - Reframing Autonomous Weapons Systems
 - Economics/Humanitarian Issues
 - Law
 - Affective Computing
 - Policy
 - Classical Ethics in Artificial Intelligence
 - Mixed Reality
 - Well-being

Ethically Aligned Design

A Vision for Prioritizing Human Wellbeing with Intelligent Systems

- Create “Ethically-aligned” autonomous and intelligent systems:
 - Incorporate ethical aspects of human wellbeing that may not automatically be considered in the current design and manufacture of intelligent technologies
 - To reframe the notion of success so human progress can include the intentional prioritization of individual, community, and societal ethical values



IEEE P7000™ Series Standards Projects

- **IEEE P7000™:** [Model Process for Addressing Ethical Concerns During System Design](#)
- **IEEE P7001™:** [Transparency of Autonomous Systems](#)
- **IEEE P7002™:** [Data Privacy Process](#)
- **IEEE P7003™:** [Algorithmic Bias Considerations](#)
- **IEEE P7004™:** [Standard on Child and Student Data Governance](#)
- **IEEE P7005™:** [Standard on Employer Data Governance](#)
- **IEEE P7006™:** [Standard on Personal Data AI Agent Working Group](#)
- **IEEE P7007™:** [Ontological Standard for Ethically driven Robotics and Automation Systems](#)
- **IEEE P7008™:** [Standard for Ethically Driven Nudging for Robotic, Intelligent and Autonomous Systems](#)
- **IEEE P7009™:** [Standard for Fail-Safe Design of Autonomous and Semi-Autonomous Systems](#)
- **IEEE P7010™:** [Wellbeing Metrics Standard for Ethical Artificial Intelligence and Autonomous Systems](#)

Digital Inclusion through Trust and Agency

Industry Connections Program

- **INDUSTRY CHALLENGE**

- A clear and imminent threat to the security to everyone's (already online and those coming online) digital identity within the digital universe
- Lack of industry-recognized definition for "what is digital identity."
- Build consensus and to develop a framework towards solutions that facilitate digital inclusion, trust, personal data agency and security
- **Trust and Agency** – Using the "Digital Identity Framework Discussion" as a roadmap combined with the robustness of distributed ledger and other emerging technologies that provide a platform to support the digital citizen self-managing their data with the desired outcomes
 - The ability to be forgotten online and offline
 - Having the option with which (entity) to transact
 - Protecting and securing one's data
 - Developing frameworks that equally benefit the privileged and the underserved

IEEE Internet Initiative

- Mission: To provide a collaborative platform for advancing solutions and informing global technology policymaking through a consensus of sound technical and scientific knowledge in the areas of internet governance, cybersecurity, privacy, and inclusion.
- A multi-domain and multi-discipline community that connects technologists and policymakers from around the world to foster a better understanding of, and to improve decisions affecting, Internet governance, cybersecurity, and privacy issues
- Provides a neutral, respected forum to help ensure [trustworthy](#) technology solutions and best practices in guiding Internet policymaking
- Focused on building trust and confidence in the internet and its technology underpinnings, and advancing solutions to provide [meaningful and ethical](#) internet access and use to all the world's citizens

IEEE Internet Initiative

Global IEEE Internet Community

- ▶ Through the IEEE Internet Initiative, global technical and policy communities can work together to improve internet governance
 - Inform, debate, share findings, and improve decisions
 - Help foster trustworthy technology solutions and best practices
- ▶ We enable multi-directional dialogue to encourage online collaboration and information exchange
- ▶ Community participants can connect via global conferences and workshops on internet governance, cybersecurity, privacy and inclusion
- ▶ 7 working groups under the Internet Inclusion: Advancing Solutions work stream
 - Community Networks
 - Connectivity and Energy
 - Digital Gender Divide
 - Digital Literacy
 - Evidence-based Research
 - New models for Financing Connectivity
 - Public Access

Thank You

Karen McCabe

Senior Director Technology Policy and International Affairs, IEEE-SA

k.mccabe@ieee.org

+1 732 562 3824

