

This document contains supplemental information referenced by the European Rolling Plan for ICT Standardisation.

IEEE Standards Activities in the Robotics and Automation Space

Overview

IEEE has several standardization activities in the Robotics and Automation Space. The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems is part of the IEEE [Industry Connections](#) program. It is an incubation space for new standards and solutions, certifications and codes of conduct as well as for consensus-building for ethical implementation of intelligent technologies. IEEE strives to ensure that every stakeholder involved in the design and development of autonomous and intelligent systems is educated, trained, and empowered to prioritize ethical considerations, so that these technologies are advanced for the benefit of humanity.

Another area of work is overseen by the IEEE Robotics and Automation Society (RAS). The Standing Committee for Standards Activities (SCSA), under the Industrial Activities Board (IAB) of RAS, has been actively working with research and industrial communities and other Standards Developing Organizations (SDOs) to identify areas in robotics and automation that are ripe for standardization.

The scope of the activities of the IEEE Robotics and Automation Society's Standing Committee for Standards Activities (RAS-SCSA) is to formally adopt and confirm best practices in robotics and automation as standards. The Standing Committee will work with interested members of RAS in supporting standards that define activities in both established, mature application areas and nascent, emerging technologies related to robotics and automation. Within this scope, the RAS Standing Committee for Standards Activities shall pursue the following objectives:

- Promote common measures and definitions in robotics and automation,
- Promote measurability and comparability of robotics and automation technology,
- Promote integrity, portability, and reusability of robotics and automation technology.

Participation and leadership in its standards activities includes experts from around the globe.

In addition, other IEEE Standards Association (IEEE-SA) sponsors are working in related areas, for example:

- The Standards Coordinating Committee 42 has standards projects for autonomous cars.
- The IEEE Consumer Electronics is sponsoring new projects on consumer drones.
- The Corporate Advisory Group (CAG) under the IEEE-SA Board of Governors is leading an effort for the Internet of Things (IoT).
- Sensors standards are sponsored by committees under the IEEE Instrument and Measurement Society and IEEE Electron Devices Society.
- Society on Social Implications of Technology, social implications of robotics and AI.

Relevant Standards Activities

Approved Standards*

- [IEEE 1872-2015](#), IEEE Standard Ontologies for Robotics and Automation
- [IEEE 1873-2015](#), IEEE Standard for Robot Map Data Representation for Navigation

Current New or Revision Projects*

- [IEEE P1872.1](#), IEEE Draft Standard for Robot Task Representation
- [IEEE P1872.2](#), IEEE Draft Standard for Autonomous Robotics (AuR) Ontology
- [IEEE P2751](#), IEEE Draft Standard for 3D Map Data Representation for Robotics and Automation
- [IEEE P7007™](#), IEEE Draft Ontological Standard for Ethically Driven Robotics and Automation Systems
- [IEEE P7008™](#), IEEE Draft Standard for Ethically Driven Nudging for Robotic, Intelligent and Autonomous Systems

Pre-standardization Industry Connections Activities

- IC16-002, The Global Initiative for Ethical Considerations in the Design of Autonomous Systems

The following link provides additional information about the Internet of Things and the corresponding IEEE standards and projects:

<https://ieeesa.io/rp-iot>

**Draft standards projects, once approved, are often revised and/or used as the base for new projects. The status of these projects is updated periodically. For the most up-to-date status, please see the following link:
<<https://standards.ieee.org/project/index.html>>*

