



Every two months, Prof. Dr. Thorsten Arnhold, IECEx Chairman 2014-2019, provides an update on developments within the organisation.

Initiated and steered by the IEC's top management, the strategic goals of the organisation for the coming years were proposed, discussed, and approved in various working groups during 2021.

The new IEC strategy is available in a very clear and well-structured form on the IEC homepage: <https://www.iec.ch/strategic-plan#enabling>

At the top level, the three focus areas of long-term development are described as follows:

- Enabling a digital and all-electric society
- Fostering a sustainable world
- Leading on trust, inclusion and collaboration

In this month's column, I would like to address the first heading dealing with digital and all-electric society. From this, the following three strategic objectives are derived, which I would like to illustrate with some examples from the IEC work in the field of standardisation and conformity assessment.

Producing standards and conformity assessment solutions for a safe and secure digital society

Through its work, the IEC ensures that safety is an integral aspect of devices and systems. IEC standards address aspects of safety

The new IEC strategy

that are relevant to many different products as well as those for a single product type or industry. The four IEC Conformity Assessment Systems – IECEE, IECEx, IECQ and IECRE – ensure that equipment and systems comply with the safety requirements inherent in IEC standards.

Hazard-based safety engineering (HSBE) is a methodology used in the development of safety standards. With HSBE, potentially hazardous situations are clearly identified, and safeguards are put in place to increase product safety. Since safety requirements are based on possible outcomes rather than prescriptive, HSBE can be applied to a wide range of systems and devices. IEC 62368-1 takes a hazard-based approach to the safety of electrical and electronic devices.

Developing and deploying SMART Standards and Conformity Assessment

Smart manufacturing covers the whole value chain and life cycle of a product, from concept, research and design to production, marketing and distribution, as well as eventual retirement and recycling. A technology-driven approach achieves efficiencies by integrating data from multiple technical systems across domains, hierarchies and geographic boundaries. The Industrial Internet of Things (IIoT) is making all of this possible by accelerating the convergence of information technology (IT) and operational technology (OT) into cyber-physical systems.

ISO/IEC JTC 1, the joint technical committee between ISO and IEC, prepares standards in the field of information technology. One of its subcommittees, SC 41, develops standards for the IoT and digital twin, including their related technologies. SC 41 started by developing agnostic and horizontal standards that promote level-one generic interoperability. These include ISO/IEC 30141, which establishes a common vocabulary and architecture as well as the ISO/IEC 21823 interoperability standards. IEC TC 47 prepares standards relating to semiconductor devices, including sensors, which are key enabling tools for the IoT.

A series of IEC TC 47 standards, IEC 62969, specifies the general requirements of power interfaces for automotive vehicle sensors. Sensors can be certified under IECQ (IEC Quality Assessment System for Electronic Components), which provides manufacturers with the assurance that the components they buy meet the required standards.

Strengthening the role of IEC Standards and Conformity Assessment

While government incentives are key in helping to accelerate the transition towards e-mobility, IEC standards and Conformity Assessment Systems are essential in enabling these electric transport systems to be safe, performance driven and as energy efficient as possible. Several IEC technical committees have developed the foundation for the integration of transportation within energy systems.

IEC TC 57 publishes the IEC 61850 standards, a foundational series of publications that pave the way for the use of a variety of digital technologies relating to smart energy. They deal with issues such as the integration of renewable energies and EVs within the electrical network. The standards developed in the IEC 62196 series specify the requirements for plugs, socket outlets, vehicle connectors and vehicle inlets to interface between the EV and the EV charging system.

A new edition of the first part of IEC 62196 has now been published. 'IEC 62196-1, plugs, socket outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles - Part 1: General requirements', describes the interface between the electric vehicle and the charging station and defines the requirements and test methods for the accessories used.

The list of examples could be continued at will. I hope that I was able to show that IEC has its finger on the pulse with its current and future activities and underpins this with a strong strategy. ■