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## New Proposals

### 1. [A New Field of Technical Activity – Sustainable Finance](#)

ISO has received a New Field of Technical Activity Proposal from the British National Standards Body (BSI) to **Form a new Technical Committee in the field of Sustainable Finance.**

The scope of the new committee is proposed to be

*Standardization in the field of Sustainable Finance.*

The programme of work will promote the integration of sustainability considerations and environmental, social and governance (ESG) practices into institutional investment decision-making and wider finance management. It will ultimately look to support the alignment of the global financial system with sustainable development goals.

The initial Sustainable Finance programme of work would align with the conceptual framework developed by the United Nations Environmental Programme (UNEP). The priority would be to establish a *Framework for Sustainable Finance Management Guide*, this would be followed by:

1. Integration of Sustainability considerations and ESG principles into financial decision-making and broader financial services and products
2. Green finance
3. Sustainable investment at the sector level / sustainable finance applications

Standards Australia will be consulting with stakeholders for this proposal. For more information on the proposal, or to make a submission, please contact the Stakeholder Engagement Management team at [sem@standards.org.au](mailto:sem@standards.org.au) by Tuesday 31 July 2018.

## International

### 1. [Calling all creatives! The #mycrazyidea Design Contest is now open](#)

To celebrate World Standards Day, [IEC](#) (International Electrotechnical Commission), [ISO](#) (International Organization for Standardization) and [ITU](#) (International Telecommunication Union) are organizing a drawing and video contest where you can win up to 1 500 Swiss francs. The competition is open to all countries and will close on 30 July 2018.

To participate, think of a problem in your community, something that could be better. Now, imagine that you have the latest technology (robotics, artificial intelligence, smart manufacturing, virtual reality, etc.) at your disposal. How could you use this technology paired up with international standards to solve the problem?

The **#mycrazyidea** competition is inspired by the 2018 World Standards Day theme “International Standards and the Fourth Industrial Revolution”. The day will draw attention to the technologies that are blurring the boundaries between the digital and the real world, and the role of international standards in enabling their positive development.

Follow the competition’s [Facebook](#), [Twitter](#) and [Instagram](#) pages for live updates and interactive guidance for contestants. The winning design will be decided by public voting.

Since 1970, 14 October has been dedicated to celebrating international standards. Coordinated by IEC, ISO and ITU, World Standards Day celebrates the collaborative efforts of the thousands of public- and private-sector experts that dedicate their time and expertise to the development of international standards.

To participate, find the rules and requirements [here](#).

For some inspiration, read all about last year’s winners [here](#).

### 2. [WTO to hold seminar on cross-border movement of service-providing individuals](#)

At a meeting of the Council for Trade in Services (CTS) on 30 May, WTO members agreed to hold a thematic seminar on the temporary movement of natural persons across borders for the purpose of supplying services. Also known as “Mode 4”, this trade modality covers individuals who are either service suppliers (such as independent professionals) or are employed by a service supplier.

Under the [General Agreement on Trade in Services \(GATS\)](#), services can be traded internationally in four different ways — known as [the four modes](#). Mode 4 does not concern persons seeking access to the employment market in the host member, nor does it affect measures regarding citizenship, residence or employment on a permanent basis.

Initially proposed by India, the seminar will be held back-to-back with a meeting of the Council for Trade in Services on a date still to be confirmed. The event will be based on a draft programme by the WTO Secretariat and will be opened to representatives of WTO members, international organizations, public and private entities and individual experts.

Under the title "CTS Thematic Seminar – Mode 4 at work", the proposed programme will provide an overview of Mode 4 of the GATS and discuss its scope, offering also a snapshot of the specific commitments undertaken and most favoured nation exemptions listed by WTO members. Mode 4 access and pertinent regulatory disciplines negotiated in Regional Trade Agreements, the main challenges of measuring Mode 4 trade and its economic impact will also feature in the discussion.

Participants will have the opportunity to discuss regulatory measures that may have a bearing on scheduled Mode 4 commitments and will address the challenges to realising the benefits of existing Mode 4 bindings.

On other issues, least developed countries (LDCs) stressed the need for capacity building and technical assistance measures to enable their suppliers to take advantage of the [LDC services waiver](#) preferences. They also advocated that, in line with the decision on the waiver taken at the WTO's 10th Ministerial Conference in Nairobi, the Council facilitate an exchange of information on relevant technical assistance measures, initiate a process to review the operation of notified preferences, and put forward a number of specific suggestions.

China reported on a two-week workshop on "E-commerce and development under the multilateral trading system" that was held in China in May and attended by 15 WTO developing members. Members reverted to a proposal that the Council hold a thematic seminar on e-commerce; delegations were generally supportive of the idea and consultations on a possible programme for the event will be organised.

The Russian Federation and Ukraine reiterated their differences regarding the reform of the Ukrainian gas transportation system and, under other business, Japan, echoed by the United States, repeated its concerns about existing and proposed cybersecurity measures by China and Viet Nam; the delegations concerned underscored that their respective measures are fully in compliance with their WTO obligations.

The Council appointed Ambassador Alfredo Suescum of Panama as the new chair of the Council.

Source: [https://www.wto.org/english/news\\_e/news18\\_e/serv\\_30may18\\_e.htm](https://www.wto.org/english/news_e/news18_e/serv_30may18_e.htm)

### [3. Symposium highlights role of Trade Facilitation Agreement in easing global flow of goods](#)

A joint G20-OECD-WTO event held on 30 May 2018 at the Organisation for Economic Cooperation and Development (OECD) in Paris discussed how the international community can join efforts to further ease the flow of goods among WTO members. The WTO's Trade Facilitation Agreement (TFA) was cited as a model for future trade cooperation initiatives aiming to promote productivity and economic development.

The panel said WTO members have made encouraging progress in implementing the [TFA](#). This is evident through the high number of ratifications of the Agreement by members and the notifications submitted by developing countries outlining the timetables envisaged for implementing the TFA, based on their respective capacities. The panel noted that 136 WTO members have ratified the Agreement, representing 83% of the membership. "The progress made is encouraging and it is heartening to see that WTO members seem keen to implement the TFA to support economic growth

and poverty alleviation," said Nora Neufeld, Secretary to the WTO Committee on Trade Facilitation, speaking at the event. More detail on TFA implementation is available [here](#).

The TFA establishes procedures to ease world trade among WTO members. It is estimated that when fully implemented, the TFA will reduce trade costs by an average of 14% worldwide, with the poorest countries benefitting the most.

The event highlighted that cooperation among international organizations, including the [G20](#), the [OECD](#) and the WTO, will be key to monitoring progress among countries in implementing the TFA and identifying areas which could be improved. It was suggested that further progress to ease international trade will be contingent upon enhanced cooperation with the private sector and improved coordination of border agencies. It was also mentioned that the international community has a key role to play in helping women overcome barriers to doing business, as many small and medium-sized enterprises are women-owned.

In his opening speech at the event, OECD Secretary-General Angel Gurría called on international organizations to pool their expertise into this project. He said: "International trade can contribute to more inclusive and sustainable growth. And trade facilitation is a key part of this effort. The TFA shows that multilateralism can work, and the Trade Facilitation Indicators show that it is working. Let's put our minds together to make global trade work for all. Getting this equation right is crucial to deactivate protectionism, improve productivity and reduce inequalities."

Other speakers included Argentina's Minister of Foreign Affairs, Jorge Faurie, the B20 Chair, Daniel Funes de Rioja, and the WTO Director-General's Principal Advisor, Tim Yeend.

Source: [https://www.wto.org/english/news\\_e/news18\\_e/fac\\_04jun18\\_e.htm](https://www.wto.org/english/news_e/news18_e/fac_04jun18_e.htm)

## ISO

### 1. [Australia to become a Participating Member of ISO/PC 311 \*Vulnerable Consumers\*](#)

At the recent Production Management Group meeting, approval was given for Australia to increase their participation level on ISO/PC 311 *Vulnerable Consumers* from non-member, to participating member.

ISO/PC 311 is a project committee which was established in 2017 for standardization in the field of vulnerable consumers. The committee, currently consisting of 13 participating members and 10 observer members, is in the process of developing their first standard: ISO/NP 22458 *Inclusive Service: identifying and responding to consumers in vulnerable situations*. The secretariat of the committee is held by the British National Standards Body, BSI.

There has been increasing national interest in this areas of standardization and, following industry leadership and support, Standards Australia is now in the process of developing a National Mirror Committee to mirror and engage with this new work at ISO. If you are interested in finding out more or participating in this international work, please contact Senior Stakeholder Engagement Manager, Brett Lovett, at [brett.lovett@standards.org.au](mailto:brett.lovett@standards.org.au) for further information.

### 2. [New edition of ISO 22000 just out!](#)

With over two hundred diseases spread through the food chain, it's clear that safe, sustainable food production is one of our greatest challenges. Globalization of the food trade further complicates food safety and the new edition of ISO 22000 on food safety management systems presents a timely response.

Food safety is about the prevention, elimination and control of foodborne hazards, from the site of production to the point of consumption. Since food safety hazards may be introduced at any stage of the process, every company in the food supply chain must exercise adequate hazard controls. In fact, food safety can only be maintained through the combined efforts of all parties: governments, producers, retailers and end consumers.

Aimed at all organizations in the food and feed industries, regardless of size or sector, ISO 22000:2018, Food safety management systems – Requirements for any organization in the food chain, translates food safety management into a continuously improving process. It takes a precautionary approach to food safety by helping to identify, prevent and reduce foodborne hazards in the food and feed chains.

The new edition brings clarity of understanding for the thousands of companies worldwide that already used the standard. Its latest improvements include:

Adoption of the High-Level Structure common to all ISO management system standards, making it easier for organizations to combine ISO 22000 with other management systems (such as ISO 9001 or ISO 14001) at a given time

A new approach to risk – as a vital concept in the food business – which distinguishes between risk at the operational level and the business level of the management system

Strong links to the Codex Alimentarius, a United Nations food group that develops food safety guidelines for governments

The new standard offers a dynamic control of food safety hazards combining the following generally recognized key elements: interactive communication, systems management, Prerequisite Programmes (PRPs), and the principles of Hazard Analysis and Critical Control Points (HACCP).

Jacob Faergemand, Chair of technical committee ISO/TC 34, Food products, subcommittee 17, Management systems for food safety, that developed the standard, says: “To meet the market needs for food safety, ISO 22000 is created by stakeholders who are involved in food safety organizations: governance, consumers, consulting, industry and research. When a food safety management system is developed by the users of ISO 22000, you make sure that requirements from the market are met.”

ISO 22000:2018 cancels and replaces ISO 22000:2005. Organizations certified to the standard have three years from the date of publication to transition to the new version.

Australia is a Participating member of ISO/TC 34/SC 17 *Management Systems for Food Safety*, with National Mirror Committee FT-024 *Food Products*. If you are interested in engaging in the work of this committee or looking for further information, please contact Senior Stakeholder Engagement Manager, Brett Lovett, at [brett.lovett@standards.org.au](mailto:brett.lovett@standards.org.au).

Source: <https://www.iso.org/news/ref2301.html>

### 3. [New ISO standards for greener machine tools](#)

When the topic of energy efficiency comes up, energy-efficient machine tools don't immediately spring to mind. Yet machine tools contain motors and auxiliary components whose energy demand varies widely during machining operations. Happily, a new series of ISO standards can help measure energy supplied and improve machine design and performance.

Machine tools are complex power-driven industrial devices employed to manufacture ready-for-use parts or semi-finished products. Encompassing a whole array of tools for cutting and forming metal, wood and plastics, and all their accessories, machine tools are used by companies in a variety of sectors like the automotive industry, general machinery, precision engineering, the medical sector, transport, aerospace, and dies and mould.

Machine tools obviously use different forms of energy, such as electrical energy, compressed air, hydraulic energy, energy hidden in the cooling and lubrication system, etc. Therefore, the energy demand of a machine tool is considered as key data for investment, but does not stand alone. The performance of a machine tool is multidimensional regarding its economic value, its technical specification and its operating requirements, which are influenced by the specific application. Hence why the ecological footprint is a common challenge for all these products and, as natural resources



become scarce, environmental performance criteria for machine tools need to be defined and the use of these criteria specified.

ISO has recently published the first two parts of a new International Standard for the environmental evaluation of machine tools, which proposes to analyse machine tools with regard to the delivered functions in order to highlight the commonalities in the huge variety of existing machine tool types.

[ISO 14955-1](#), *Machine tools – Environmental evaluation of machine tools – Part 1: Design methodology for energy-efficient machine tools*, addresses the energy efficiency of machine tools during their working life. It identifies the main functions and machine tool components that are responsible for energy demand during the use phase. These components are then compared with previous components or with the state-of-the-art for their future improvement.

[ISO 14955-2](#), *Machine tools – Environmental evaluation of machine tools – Part 2: Methods for measuring energy supplied to machine tools and machine tool components*, supports the energy-saving design methodology according to ISO 14955-1 by providing practical methods for measuring the energy supplied to machine tools.

Ralf Reines, Convenor of ISO/TC 39/WG 12 that developed the standards, explains: *“This is, to my knowledge, the only standard concerning this topic that is tailored for machine tools. It covers the topic in a way that it can be applied to each and every machine tool, despite the fact that the product group of machine tools is extremely diverse, e.g. different technologies (such as milling, turning, grinding, laser processing, forming), processing of material (metal, wood, plastics), sizes (to produce parts the size of a tooth or to process gears for windmills of 10 m in diameter). The standard focuses on the relevant energy users to achieve a higher environmental performance without losing in technical possibilities.”*

According to the study Market Report 2016 by the German Machine Tool Builders’ Association, the world production of machine tools represents EUR 67.7 billion. The increasing demand for machinery and production systems to be more energy-efficient is a relatively new challenge for machine designers. Now, with the new ISO 14955 series, energy efficiency is likely to become an increasingly important quality attribute of modern machine tools.

ISO 14955-1 and ISO 14955-2 were developed by ISO technical committee ISO/TC 39, *Machine tools*, whose secretariat is held by [SNV](#), ISO’s member for Switzerland. Australia is not a member of this committee.

Source: <https://www.iso.org/news/ref2262.html>

#### 4. [Delivering a safer world](#)

A common expectation of improved safety in almost all aspects of our lives, from safer workplaces, to safer consumer products and food, highlights an important role for accreditation.

The challenge now faced by employers, businesses and government is to ensure that those expectations become reality. It’s a substantial task, made considerably easier thanks to International Standards that keep people safer in their homes, at their workplaces, and on their journeys. Many of these work as part of a coherent system of ISO management standards, addressing sectors from



information security (ISO/IEC 27001) and food safety (ISO 22000), to the recently-published [ISO 45001 — Occupational health and safety](#).

International Standards reassure employers, workers and consumers alike, providing a tried and trusted answer to any organization looking to improve the efficiency and safety of its processes. For many, getting certified is a way of showing the world that your services or products are packing the power of standards. While certification is not compulsory, many choose to engage an independent expert to verify the procedures and processes that they have in place.

But what processes exist for making sure that independent experts, really are just that? The answer lies in accreditation, where certifying bodies are themselves assessed and approved to [provide certification services](#). The organizations responsible for coordinating accreditation activities on a global scale, are the [International Laboratory Accreditation Cooperation](#) (ILAC) and the [International Accreditation Forum](#) (IAF). They're also the people behind the annual world accreditation day, celebrated each year on June 9.

The Chairs of both organizations have reiterated the importance of delivering a “safer world” and how accreditation can support government, regulators and businesses, aiming to keep people safer in their work, their domestic life, their journeys and all other parts of their lives.

For further information, consult [the World Accreditation Day site](#), where you will find further information from ILAC and the LAF, as well as a brochure that shows how accredited testing, inspection and certification is being used to deliver a safer world.

Australia’s member body of the ILAC is the National Association of Testing Authorities ([NATA](#)). The Australian representation at IAF is coordinated with New Zealand through the Joint Accreditation System of Australia and New Zealand ([JAS-ANZ](#)).

## IEC

### 1. IECRE issues first solar PV certificate

The IECRE (the IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications) is pleased to announce the first IEC TS 62941 certificate issued to First Solar, Inc., a leading global provider of comprehensive photovoltaic (PV) solar systems.

IEC TS 62941 identifies best practices for PV product design, manufacturing processes, and the selection and control of materials. The certification was issued by the global safety and certification organization, Underwriters Laboratories – UL (US), one of the first approved Renewable Energy Certification Bodies (RECBs) in the IECRE.

First Solar becomes the first company to benefit from the harmonized certification process for the PV sector. The IECRE System enables broader industry stakeholder participation in defining the third party certification process, which guarantees the certificates will meet the needs of industry.

It reduces costs for manufacturers and consumers by eliminating the need for duplicative evaluations and certifications in different markets.

“The IECRE System for certifying PV products, systems, and farms ensures that all stakeholders will have confidence and trust that devices and installations are built to International Standards and perform as promised”, said Kerry McManama, Executive Secretary & COO of the IECRE System.

IEC TS 62941 has raised the industry standards for PV module product design, development, product certification, process control, raw material control and procurement, as well as product testing and monitoring.

First Solar was assessed by UL, consistent with the processes defined by the IECRE Conformity Assessment (CA) system. IECRE certification is highly valued because third party evaluation is carried out by accredited, independent laboratories accepted to participate in the CA system.

#### **About IECRE**

IECRE is a new worldwide approval and certification system that covers equipment and services for use in Renewable Energy sectors and notably those in solar PV energy, wind energy and marine energy. Each of these sectors operates Schemes that cover products, services and personnel and provide testing, inspection and certification.

IECRE has been created in recognition that the ever-increasing demand for electricity and the need to reduce the share of fossil fuels in power generation have led to rapid development and growth of the renewable energy (RE) sector.

The System aims to facilitate international trade in equipment and services for use in RE, while maintaining the required level of safety and performance. Currently IECRE focuses on the above three energy sectors; however, the door remains open for consideration of other technologies such as concentrated solar power (CSP), geothermal energy and fuel cells.

Source: <http://www.iec.ch/newslog/2018/nr0418.htm>

## 2. Future-proofing pre-payment meters

The IEC has revised a key International Standard to enhance the security and functionality of metering pre-payment systems. The open Standard Transfer Specification (STS), IEC 62055-41, will benefit customers of electricity, water and gas utilities, particularly in developing countries.

The 'pay-as-you-go' solution is based on a 20-digit token system that enables consumers to buy in advance and to manage their consumption more efficiently. Offline token-based credit transfer methods are particularly suitable for environments where the online communication infrastructure is poorly supported.

The 'pay-as-you-go' solution is based on a 20-digit token system that enables consumers to buy in advance and to manage their consumption more efficiently. Offline token-based credit transfer methods are particularly suitable for environments where the online communication infrastructure is poorly supported.

"Most people living in developing countries find it very difficult to predict how much money they will have left at the end of the month," says Don Taylor, the convenor of the IEC working group that developed the Standard, as well as the director of the STS association. "Wages are often paid weekly and a monthly electricity bill, similar to what exists in Europe or the USA, would be totally impractical."

IEC 62055-41 enhances security through a robust and proven encryption technology. "We wanted to improve drastically the encryption algorithms and make them state-of-the-art secure. The idea is for the encryption level to be valid for the next 30 years," explains Mr. Taylor.

IEC 62055-41 is the only globally recognized International Standard for electricity metering payment systems. It facilitates more efficient grid management by giving utilities access to enhanced consumption data, as well as ensuring interoperability between system components from different manufacturers.

The STS is developed by IEC Technical Committee 13: Electrical energy measurement and control. The technologies developed by TC13 help governments to liberalize energy markets and play an important role in the fight on climate change by allowing both utilities and users to track carbon emissions.

### **About STS**

The STS was originally created in South Africa in 1993 as an industry Standard to support the public utility's electrification programme to connect 10 million households to the supply grid by making use of prepayment metering technology.

Australia is a participating member of IEC/TC 13 with National Mirror Committee EL-011. To find out more about Australia's participation or become involved, contact Stakeholder Engagement Manager, Simona Tomevska [simona.tomevska@standards.org.au](mailto:simona.tomevska@standards.org.au)

Source: <http://www.iec.ch/newslog/2018/nr0318.htm>

### 3. [DIY robot helper](#)

Robots are ready to move into our homes. Already present in manufacturing, robots are now able to build the furniture.

At Nanyang Technological University, in Singapore, scientists have built a robot that can autonomously assemble an IKEA chair in 20 minutes. Depending on levels of frustration and exasperation, this might be quicker than assembly by a human.

The robot furniture builder consists of a 3D camera, to serve as its eyes, and two robotic arms equipped with grippers. Force sensors on the robot's arms determine the strength of the grippers and how powerfully to press objects together. The scientists developed algorithms to enable the robot to coordinate the multiple skills needed to assemble the chair.

This was a tough test, requiring the robot to use force control, visual localization and hand-eye coordination, as well as the ability to understand each step of the instructions. The results were impressive.

As a first step, the robot took 3D photos of the parts of the chair to be assembled in order to generate a map of the estimated positions of the different parts. Next, it planned its motion pathways that integrated visual and tactile perception, grasping and execution.

When assembling the chair, the robot needed to be able to grasp the pieces tightly and insert wood plugs into the work pieces. This task proved challenging since the robot needed to regulate the amount of force necessary and required the use of force sensors mounted on its arms.

#### **IEC Standards**

IEC produces International Standards for many of the technologies that robots incorporate including sensors, batteries, and hardware products.

- [IEC/TC 2](#) develops Standards for rotating electrical machines, including the drives and motors used in industrial robots
- [IEC/TC 17](#) prepares Standards for switchgear and controlgear;
- [IEC/SC 21A](#) develops Standards for batteries containing alkaline or other non-acid electrolytes,
- [IEC/TC 22](#) develops Standards for power electronic systems and equipment,
- [IEC/TC 47](#) develops Standards for the design and use of semiconductor devices, including sensors. Among its subcommittees, IEC SC 47F specifically addresses micro electromechanical systems (MEMS) while IEC SC 47E provides Standards for sensors used in imaging, motion and distance detection.
- [IEC/TC 91](#) is responsible for Standards used in electronic assembly technologies including components.

In addition, the Joint Technical Committee of IEC and ISO on information technology (ISO/IEC JTC 1) prepares Standards used for artificial intelligence including the internet of things and cloud computing. In 2017, a new subcommittee on artificial intelligence, ISO/IEC JTC 1/SC 42, was set up. It held its first meeting in April.

## Robots at home?

When George Devol, a founding figure of the modern robotics industry, first developed his robots, they were met with scepticism and distrust. Now they are an integral part of many manufacturing processes.

Already, robots have entered our homes to vacuum, cut grass and clean pools. Furniture assembly should ensue next to spare the psychological angst it has caused in many households.

Source: <https://blog.iec.ch/2018/06/diy-robot-helper/>

## 4. [Good things come in pairs in Industry 4.0](#)

Imagine opening your email and finding a medical prescription to treat an illness you didn't know you had, without any prior physical tests and perhaps before you even felt unwell. Your doctor could have decided on the treatment after examining a digital replica of you, including real time data about your diet, lifestyle and current environment.

Medicine may not have arrived at that point yet, but so-called "digital twins" are very much a reality in the world of smart manufacturing, also known as Industry 4.0. Smart manufacturing covers the whole value chain and life cycle of a product, from idea to order, construction and development, delivery, recycling and all related services, as well as real-time integration of user or consumer input and feedback.

Digital twins are the virtual representation of the elements and dynamics of how a product is made, how it operates and how it works throughout its lifecycle. Digital twins influence the design, production and operation of a product.

On the other end of the scale, a growing number of major infrastructure assets have digital twins. In Australia, for example, more than 2000 sensors monitor the physical integrity of the Sydney Harbour Bridge [in order to align it with a digital twin](#).

The technology is integral to the [Siemens factory in Amberg](#), Germany. The plant in Bavaria is 75% automated, but still employs 1 300 people because—at least for the time being—humans still perform many tasks better than machines.

The physical factory has a digital twin that is identical in every respect. It is used to plan the production process and programme machines as well as design products and test them.

Once there is an efficient working model and all the bugs have been ironed out, the physical factory begins production. The technology has allowed the factory to scale production to 15 million units a year, a 13-fold increase since 1989, without hiring more people, or moving into larger premises.

Digital twins are made possible by the prevalence of inexpensive sensors, networks for the reliable transmission of data and intelligent analytics systems to process and make decisions. Technology is easily available and is enabling manufacturers to understand how their machines influence a product's tolerances, stresses and design.

According to Siemens the defect rate at the Amberg plant is close to zero. This is all the more remarkable given that the plant manufactures 1 200 different products on the same production lines.

### **Smart manufacturing can rely on International Standards**

Standardization is of crucial importance, as more companies around the world adopt smart processes. Industry 4.0 requires an unprecedented integration of systems across domains, hierarchical boundaries and lifecycle phases.

For this reason, the IEC places a strong emphasis on [systems work](#).

The IEC Standardization Management Board ([SMB](#)) has set up [Systems Evaluation Group \(SEG\) 7](#) to pave the way for the creation of a Systems Committee (SyC). The group's scope includes providing an inventory of existing Standards and projects in progress, as well as inviting the cooperation of other organizations to assist in mapping smart manufacturing activities that are closely related and to participate in the activities of the proposed SyC.

SEG 7 works closely with and enhances collaboration between different IEC Technical Committees (TCs). These include:

- [TC 3](#): Information structures and elements, identification and marking principles, documentation and graphical symbols,
- [TC 17](#): High-voltage switchgear and controlgear
- [TC 22](#): Power electronic systems and equipment
- [TC 44](#): Safety of machinery - Electrotechnical aspects
- [TC 65](#): Industrial-process measurement, control and automation
- [TC 77](#): Electromagnetic compatibility
- [TC 111](#): Environmental standardization for electrical and electronic products and systems
- [TC 121](#): Switchgear and controlgear and their assemblies for low voltage
- [CISPR](#): International special committee on radio interference, and its SCs

The Joint Technical Committee (JTC) 1 for Information technology, created by the IEC and [ISO](#), also develops relevant Standards through its Subcommittees (SCs). Among them are:

- [ISO/IEC JTC 1/SC 27](#): IT security techniques
- [ISO/IEC JTC1/SC 41](#): Internet of things and related technologies
- [ISO/IEC JTC1/SC 42](#): Artificial intelligence

International Standards are helping manufacturers to develop their products and services in a more efficient, safer and sustainable way. Many companies, consortia and other industry bodies are actively involved in standardization work.

Standardization is of central importance for smart manufacturing. Industry 4.0 requires an unprecedented integration of systems across domains, hierarchic boundaries and life cycle phases.

Source: <https://www.iecotech.org/Technology-Focus/2018-03/Good-things-come-in-pairs-in-Industry-4.0>