



53rd CIML Meeting - Working Document

Additional Meeting Document

53-CIML-AMD-01

2018-07-13

Agenda item 9.3: Updates by organizations in liaison

IEC Update Report



Update to OIML

2018-07-11

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SUBJECT

IEC update to OIML – for the CIML in October 2018

BACKGROUND

To support the collaboration between IEC and OIML and in accordance with the MoU, IEC is delighted to update OIML on IEC activities. IEC looks forward to furthering synergies between IEC and OIML to benefit the two organizations' respective communities, members and stakeholders.

ACTION

For information only.

This is the IEC

The IEC is the world's leading developer and publisher of more than 10 000 International Standards for electrical and electronic technologies and the only organization today providing the world's best practice for testing and certification with four global Conformity Assessment Systems. The IEC is a global, independent, not-for-profit membership organization (funded by membership fees and sales). In 2017, it included 170 countries (84 members and 86 affiliates) that represent over 99% of world population and world energy generation. Each IEC member, no matter how big or small, commits to represent all national stakeholders in electrotechnology in IEC work and has a single vote in the IEC. Each affiliate country is able to benefit from IEC work without the financial burden of membership and can adopt many IEC International Standards free of charge.

The IEC also supports all forms of conformity assessment (CA) and administers four CA Systems – IECEE, IECEx, IECQ and IECRE – that certify that components, equipment, installations persons and systems used in homes, offices, healthcare facilities, public spaces, transportation, manufacturing, explosive environments and during energy generation conform to them.

The IEC CA Systems are the largest working multilateral agreements based on one-time testing of products globally. They bring together more than 150 certification bodies and hundreds of testing laboratories which have issued over one million certificates that are accepted and used by most countries in the world. With them, manufacturers are able to get products much faster and cheaper to many more markets.

Standards and conformity assessment are like two sides of a coin: only together do they deliver real value. Standards provide the measurement and rating methods that allow verification and testing to take place. Conformity assessment helps demonstrate proof of conformity to a Standard.



170 countries



84 members & 86 affiliates



Offices on 5 continents



10 163 International Standards



Agreements with close to 200 organizations

1906

Year founded

The IEC provides a worldwide, neutral and independent platform where 20 000 experts from the private and public sectors cooperate in over 200 technical committees and subcommittees (TC/SCs) to develop state-of-the-art, globally relevant IEC International Standards. The large majority of these TC/SCs are headed by volunteering professionals who are experts in their technology areas. This means that IEC work is guided by genuine know-how and concrete needs.

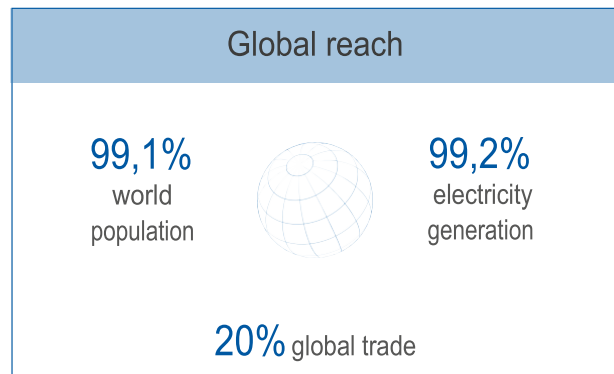
IEC work directly concerns 20% of global trade (in value) and looks at aspects such as safety and security, interoperability, performance and other essential requirements for a vast range of technology areas, including energy, manufacturing, transportation, healthcare, homes, buildings or cities.

IEC International Standards form the basis for testing and certification, support economic development and protect people and the environment.

The IEC has agreements with close to 200 organizations and cooperates with all relevant standards bodies, consortia, fora and other groups.

IEC work is essential for safety, quality and risk management. It helps make cities smarter, supports universal energy access and improves energy efficiency of devices and systems. It allows industry to consistently build better products; helps governments and critical asset owners ensure the safety and long-term viability of infrastructure investments and reassures investors and insurers.

The IEC is neutral and independent and its statutes do not allow any public or private entity to pay to influence IEC standardization or conformity assessment work.



Global Offices

Please visit the IEC website at www.iec.ch for further information. In the “About the IEC” section, you can contact your local IEC National Committee directly. Alternatively, please contact the IEC Central Office in Geneva, Switzerland or the nearest IEC Regional Centre.

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IEC Activities

Two sides of the value coin

IEC has two main activities which are standards development (SD) and conformity assessment (CA). Each of these two activities is like one side of the value coin. Each side by itself creates little value, only together is maximum value created.

Safety, reliability, interoperability

IEC International Standards and the IEC Conformity Assessment Systems are important for global trade and form the basis for testing and certification, ensuring that devices and systems work as promised.

Quality and risk management

Consistent quality and risk management is impossible to achieve without Standards, testing and verification. They provide reassurance to customers, investors, insurers or regulators, that state-of-the-art, industry-wide accepted criteria have been applied. They help limit liability risks and demonstrate that products are reasonably safe in their use and for the environment.

Safety and security

Electricity is dangerous.

Whenever electricity is involved, there is no room for trial and error because every error can be fatal. This is ever so more obvious when electricity and dangerous environments, with flammable gases and materials are in close proximity. At every stage, from manufacturing to operation and repair, safety precautions need to be taken around electricity. Electrical and mechanical safety considerations are an integral part of all IEC International Standards. Together with testing and certification they help protect humans, animals and property.

Using IEC International Standards in the design, manufacturing and conformity processes of electrical devices provides powerful evidence that a product is reasonably safe and demonstrates that state-of-the-art expertise was applied and achieved. This in turn can help reduce liability risks.

In addition to developing safety related IEC International Standards and third party Conformity Assessment Services under IECEx, IECCE, IECRE or IECQ, the IEC also organized several seminars and workshops on the topic of safety in different parts of the world.

Functional safety

While absolute safety is an unattainable goal, there are many areas where the detection of dangerous conditions activates automatic protection mechanisms. For example, the detection of smoke by a sensor will trigger the activation of a water sprinkler system; an overflow-valve will be automatically closed when a certain liquid or pressure level has been reached. In countless situations IEC work helps protect critical infrastructure, the economy, people and the environment. More information on IEC work for functional safety can be found in this brochure: [Functional safety: essential to overall safety](#)

Testing, verification, certification

The IEC administers [four Conformity Assessment \(CA\) Systems](#) that provide confidence and assurance to regulators, policy makers and the general public that requirements for safety and reliability of electrical and electronic products being sold in their national markets have been thoroughly met. The IEC CA Systems achieve this through independent third party testing, verification and certification according to International Standards:

http://www.iec.ch/about/brochures/conformity_assessment.htm

IEC work supports all [types of testing and verification](#).

Since the early 1980s the IEC has extensive experience in operating global worldwide CA schemes and systems. The IEC does no testing, inspection or certification itself, but rather brings together professional organisations from around the world to into its global framework. It is the IEC CA System framework that achieves highly consistent and comparable CA results from anywhere in the world. This value comes about by reducing the variance of CA result, and by converging those results onto correct and consistent CA results from anywhere in the world.

Outside of the IEC framework, testing, inspection and certification bodies operate as separate, individual businesses that are in competition with each other. Their competencies and CA results vary significantly from competent and correct, to competent and too demanding, to competent and too lax, to incompetent, to fraudulent. Accreditation should narrow down the variance to only those that are competent, but will not have much effect on the variance that comes from different interpretation, experience and methodology towards the standards. The IEC CA Systems, however, narrow the variance down further by harmonizing the interpretation and methodology. The IEC CA Systems bring the highest convergence onto correct and consistent CA results from anywhere in the world. It is for this reason that it is considered as the world's best practice, at this time, for global certification.

The four IEC CA Systems represent the largest and most successful multilateral recognition agreements in the world. This success is based on the consistency, comparability and reproducibility of the results no matter where in the world they come from. This consistency, comparability and reproducibility comes from the proven operational model that develops, and documents, harmonised interpretations of the standards and common work practices and then ensures consistent application of those interpretations and work practices through peer assessment. It is due to these methods that certificates of the IEC CA Systems are widely accepted, well beyond member countries.

Thousands of testing labs participate in the CA Systems. They accept the certificates and conformity assessment reports of other Members of a CA System.

Market Driven

The market drivers for the IEC CA Systems are many and quite varied.

The IECEE type certificates help remove significant delays and expense for multiple testing and approval. This allows industry to reduce cost and enter markets faster with their products.

The IECEx services also help industry but further help protect asset owners' high cost investment in infrastructure such as oil refineries, gas works, mines, etc, and in so doing protect the people working there, the environment and the economy from catastrophes.

The IECRE services help make renewable energy a reality. To achieve the 30 and 50 years forecasts in renewable energy installed capacity requires huge investment. To manage their financial risk, the investors and insurers require that world's best practices be systematically applied to renewable energy projects. It is the investors and insurers who are the driver for the IECRE.

The IECQ services are business-to-business services that are driven by cost and time saving. In the

past qualifying suppliers required conducting many audits. Manufacturers had to audit many suppliers, and suppliers had to be audited by many manufacturers. All of this was time consuming, drawing time away from their real business of producing components or products, and was costly, especially when suppliers and manufacturers were on the other side of the world. An IECQ certificate eliminates all of this wasted time and cost.

Building blocks for future services

The IEC Conformity Assessment Board (CAB) is gearing itself for an anticipated expansion in demand for its global CA services. CAB is developing building blocks for fast and easy establishment of new services. The first of these building blocks is the BizL, or future Business watch List. The BizL is a forward-looking radar to identify and track incoming CA needs from different market sectors. Its role is also to help incubate those services until they are ready to become a fully-fledged CA scheme or system. The second building block is the Toolbox of scheme rules and procedures. Once CAB has taken the decision to create a new service it is important to get the service operational as quickly as possible. Having ready-made rules and procedures helps kick-start the operations.

The IEC CA Systems

IECEE

The IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components provides testing and certification for home, office, health facilities, manufacturing, lighting, components, switches, EVs, Smart Grid, etc.

IECEX

The IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres covers all needs of the Ex industry. IECEX is unique in that it is the only IEC CA System that provides global CA services covering all of the three basic objects of conformity, which are product/equipment, people competencies and processes (management/operational/production/maintenance processes).

IECQ

The IEC Quality Assessment System for Electronic Components offers a quality and supply-chain management tool for the electronics industry

IECRE

The IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications covers PV-solar, wind, marine energy technologies and systems

International and Regional partners

The IEC works closely with its international standards development partners, ISO and ITU. It also has close relationships with the UNECE, UNIDO, OIML, BIPM, WTO, CIGRE, IFAN, ILAC/IAF, and many others.

At the regional level, the IEC works to achieve harmonization of standards among regional standardization organizations, such as the CENELEC, ETSI, CANENA, COPANT, EASC, PASC, and so on.

Recent Activities with OIML

Exploration of opportunities for future CA Service Cooperation

History

For many years the late, Willem Kool, from OIML, recognizing the limitations of the OIML schemes had often suggested that OIML and IEC should work together to create a global CA scheme for measuring equipment based on the IECEx model.

Following the signing of the current MoU in 2011, discussions between Mr Kool, Mr Roman Schwartz and the IECEE Executive Secretary (at that time), Mr Pierre d’Ruvo, were initiated. Work in this regard began in 2013 with a seminar in Viet Nam in conjunction with the CIML meeting, where an IEC representative, from the IEC regional office in Singapore, gave a presentation, and a number of Resolutions were taken. The revision work of the OIML schemes formerly started at an ad-hoc working group meeting in Gaithersburg in 2014.

Following the retirement of Mr d’Ruvo from the IEC in 2014, and the death of Mr Kool in February 2016, new discussions were initiated by PTB on behalf of the Mr Schwartz, CIML Vice-President, concerning a mandate to propose restructuring of the existing OIML certification system. In this regard a meeting was held at the IEC CO in June 2016, between Mr Koch of PTB, Mr Dixon representing OIML and Mr Agius the IECEx Executive Secretary and Mr Hanlon the IEC CAB Secretary, where descriptions of the operation of the IECEx were discussed and the possibilities for cooperation explored. One of those possibilities was the offer to use IEC IP (specifically the IECEx Basic Rules, RoP and ODs) on the basis of an agreement to cooperate possibly via a joint venture arrangement.

At a follow-up lunch meeting in London in July 2016, Mr Dixon informed Mr Agius that OIML wished to pursue the development and operation of this new system on their own. Mr Agius wished OIML well, and reminded Mr Dixon that, in this case, the offer to use IEC IP was of course no longer available.

In October 2016, at the CIML meeting, a foundational document for a new OIML-CS (Certification System) was approved. IEC was invited to participate in the development of the system, but due to the message that OIML wished to proceed alone, IEC declined and remained only as an observer. At that time IEC wished OIML well with this endeavour, but once again confirmed the remark that IEC IP could not be used.

In October 2017 IEC learned that the scheme documents developed during 2017 for the launch of the new system in January 2018, were largely based on IECEx documents. In this regard an exchange of letters was initiated by the IEC GS in November, and a meeting was scheduled and held in January at the BIML offices in Paris, between the IEC General Secretary, BIML Director, OIML-CS Executive Secretary and the IEC CAB Secretary.

At this meeting it was agreed to investigate the IP issue in greater detail and, where necessary, to add specific references to IEC IP, or to add a general acknowledgement in the foreword of the OIML scheme documents. It was also agreed to investigate possible cooperation on the new scheme where it was logical to do so and where synergies could be achieved, such as in the Ex sector. It was also decided to update the MoU.

Following review of a detailed comparison document, between OIML-CS and IECEx documents, OIML agreed that a general acknowledgement would be added to all the OIML-CS documents.

At the OIML-CS management meeting in Sydney, Australia, in March 2018, OIML and IEC agreed to consider opportunities for cooperation with IEC concerning the new OIML CA system.

At a follow-up meeting during the week of IECEX Management meetings in Weimar Germany between the IECEX Chair and IECEX Executive Secretary and CIML President, discussions were continued on the possible cooperation between IEC and OIML in the area of Conformity Assessment, but exploring the specific areas covered by IECEX and OIML in the area of explosive atmospheres, as an initial pilot. This was an excellent meeting and followed-on from the good spirit of the Sydney meeting in providing clarification of the needs of both parties and a good way forward to explore areas of cooperation to the mutual benefit of the industries that both organizations serve.

The result of the two meetings, in Sydney and Weimar, was acknowledgement of the strengths of both organisations and agreement to propose the formation of a Joint Working Group (JWG) between OIML and IECEX to explore opportunities for cooperation to better serve the International Ex industries and prevent wasteful duplication of effort. The IECEX Executive at its recent 22 June 2018 meeting endorsed this approach and they expect a formal decision supporting the JWG to be recorded at the 2018 IECEX Management Committee meeting in Cannes France in September 2018. Both the CIML President and BIML Assistant Director (and OIML-CS Executive Secretary) have been invited and are planning to attend the meeting in Cannes.

MOU

The MoU from 2011 has been updated by both organizations for signature at the CIML in Hamburg, Germany in October 2018.