

# International Electrotechnical Commission



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International Electrotechnical Commission

Commission électrotechnique internationale



Logotype of the IEC.

<b>Abbreviation</b>	IEC
<b>Motto</b>	"Making electrotechnology work for you"
<b>Formation</b>	26 June 1906 <a href="#">London, United Kingdom</a>
<b>Type</b>	Association <sup>[1]</sup>
<b>Legal status</b>	Active
<b>Purpose</b>	Standardization for electrical technology, electronic and related.
<b>Headquarters</b>	<a href="#">Geneva</a> , Switzerland
<b>Location</b>	<ul style="list-style-type: none"><li>List<a href="#">[show]</a></li></ul>
<b>Membership</b>	86 countries <a href="#">[show]</a>

<b>Official languages</b>	<a href="#">English</a> , <a href="#">French</a>
<b>President</b>	Yinbiao Shu <sup>[2]</sup>
<b>Budget</b>	<a href="#">CHF</a> 20 Million / <a href="#">US\$</a> 20.938 Million / <a href="#">€</a> 19.3 Million
<b>Website</b>	<a href="#">Official website</a> 

The **International Electrotechnical Commission**<sup>[3]</sup> (**IEC**; in [French](#): *Commission électrotechnique internationale*) is an international [standards organization](#)<sup>[4][5]</sup> that prepares and publishes international standards for all [electrical](#), [electronic](#) and related technologies – collectively known as "[electrotechnology](#)". IEC standards cover a vast range of technologies from power generation, transmission and distribution to home appliances and office equipment, semiconductors, fibre optics, batteries, [solar energy](#), [nanotechnology](#) and marine energy as well as many others. The IEC also manages four<sup>[6]</sup> global conformity assessment systems that certify whether equipment, system or components conform to its international standards.

All electrotechnologies are covered by IEC Standards, including energy production and distribution, electronics, magnetics and [electromagnetics](#), [electroacoustics](#), [multimedia](#), [telecommunication](#) and [medical technology](#), as well as associated general disciplines such as terminology and symbols, electromagnetic compatibility, measurement and performance, dependability, design and development, safety and the environment.



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## History

The first [International Electrical Congress](#) took place in 1881 at the [International Exposition of Electricity](#), held in Paris. At that time the [International System of Electrical and Magnetic Units](#) was agreed to.

The International Electrotechnical Commission held its inaugural meeting on 26 June 1906, following discussions among the British [Institution of Electrical Engineers](#), the [American Institute of Electrical Engineers](#), and others, which began at the 1900 Paris International Electrical Congress,<sup>[*citation needed*]</sup> and continued with [Colonel R. E. B. Crompton](#) playing a key role. In 1906, [Lord Kelvin](#) was elected as the first President of the International Electrotechnical Commission.<sup>[7]</sup>



International Electrotechnical Commission - Central Office - Geneva

The IEC was instrumental in developing and distributing standards for units of measurement, particularly the [gauss](#), [hertz](#), and [weber](#).<sup>[8]</sup> It also first proposed a system of standards, the [Giorgi System](#), which ultimately became the [SI](#), or *Système International d'unités* (in English, the International System of Units).

In 1938, it published a multilingual international vocabulary to unify terminology relating to electrical, electronic and related technologies. This effort continues, and the [International Electrotechnical Vocabulary](#) (the on-line version of which is known as the *Electropedia*) remains an important work in the electrical and electronic industries.

The [CISPR](#) (*Comité International Spécial des Perturbations Radioélectriques*) – in English, the International Special Committee on Radio Interference – is one of the groups founded by the IEC.

Currently, 86 countries are IEC members while another 87 participate in the Affiliate Country Programme, which is not a form of membership but is designed to help industrializing countries get involved with the IEC. Originally located in [London](#), the Commission moved to its current headquarters in [Geneva](#) in 1948.

It has regional centres in Africa [(Nairobi, Kenya)], Asia-Pacific ([Singapore](#)), Latin America ([São Paulo](#), Brazil) and North America ([Boston](#), United States).

Today, the IEC is the world's leading international organization in its field, and its standards are adopted as national standards by its members. The work is done by some 10,000 electrical and electronics experts from industry, government, academia, test labs and others with an interest in the subject.

## IEC standards

See also: [List of IEC standards](#)



Cable with an angled IEC connector (IEC 60320 C13) and an EU plug (CEE 7/7).

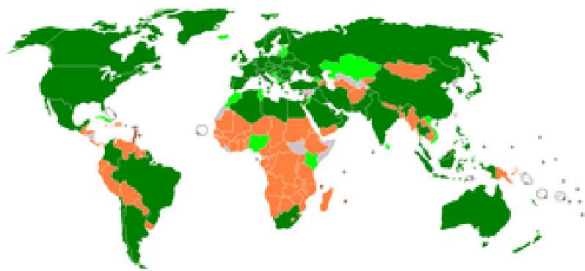
IEC standards have numbers in the range 60000–79999 and their titles take a form such as *IEC 60417: Graphical symbols for use on equipment*. Following the Dresden Agreement with [CENELEC](#) the numbers of older IEC standards were converted in 1997 by adding 60000, for example IEC 27 became IEC 60027. Standards of the 60000 series are also found preceded by EN to indicate that the IEC standard is also adopted by CENELEC as a European standard; for example IEC 60034 is also available as EN 60034.

The IEC cooperates closely with the [International Organization for Standardization \(ISO\)](#) and the [International Telecommunication Union \(ITU\)](#). In addition, it works with several major standards development organizations, including the [IEEE](#) with which it signed a cooperation agreement in 2002, which was amended in 2008 to include joint development work.

Standards developed jointly with ISO such as ISO/IEC 26300 (*Open Document Format for Office Applications (OpenDocument) v1.0*), ISO/IEC 27001 (*Information technology, Security techniques, Information security management systems, Requirements*), and CASCO ISO/IEC 17000 series, carry the acronym of both organizations. The use of the ISO/IEC prefix covers publications from [ISO/IEC Joint Technical Committee 1 - Information Technology](#), as well as conformity assessment standards developed by ISO CASCO and IEC CAB (Conformity Assessment Board). Other standards developed in cooperation between IEC and ISO are assigned numbers in the 80000 series, such as IEC 82045–1.

IEC standards are also being adopted by other certifying bodies such as [BSI](#) (United Kingdom), [CSA](#) (Canada), [UL](#) & [ANSI/INCITS](#) (United States), [SABS](#) (South Africa), [SAI](#) (Australia), [SPC/GB](#) (China) and [DIN](#) (Germany). IEC standards adopted by other certifying bodies may have some noted differences from the original IEC standard.<sup>[9]</sup>

# Membership and participation



■ Full members

■ Associate members

■ Affiliates

The IEC is made up of members, called national committees, and each NC represents its nation's electrotechnical interests in the IEC. This includes manufacturers, providers, distributors and vendors, consumers and users, all levels of governmental agencies, professional societies and trade associations as well as standards developers from national standards bodies. National committees are constituted in different ways. Some NCs are public sector only, some are a combination of public and private sector, and some are private sector only. About 90% of those who prepare IEC standards work in industry.

IEC Member countries include:<sup>[10]</sup>

## Full members

- [Algeria](#)
- [Argentina](#) – [Instituto Argentino de Normalización y Certificación](#) (IRAM)
- [Australia](#) – [Standards Australia](#)
- [Austria](#) – Österreichischer Verband für Elektrotechnik (ÖVE)
- [Belarus](#)
- [Belgium](#)
- [Brazil](#) – [Comitê Brasileiro de Eletricidade, Eletrônica, Iluminação e Telecomunicações](#) (Cobei)
- [India](#) – [Bureau of Indian Standards](#) (BIS)
- [Indonesia](#)
- [Iran](#)
- [Iraq](#)
- [Ireland](#)
- [Israel](#)
- [Italy](#) – Comitato Elettrotecnico Italiano (CEI)
- [Japan](#) – [Japanese Industrial Standards Committee](#)
- [Libya](#)
- [Luxembourg](#)
- [Malaysia](#)
- [Mexico](#)
- [Netherlands](#)
- [New Zealand](#)
- [Saudi Arabia](#)
- [Serbia](#)
- [Singapore](#)
- [Slovakia](#)
- [Slovenia](#)
- [South Korea](#) – [Korean Agency for Technology and Standards](#) (KATS)
- [South Africa](#) – [South African Bureau of Standards](#) (SABS)
- [Spain](#) – [Asociación Española de Normalización y Certificación](#) (AENOR)
- [Sweden](#) – Swedish Electrical Standard (SEK)
- [Switzerland](#) – Swiss Electrotechnical Committee (CES)
- [Thailand](#)

- [Bulgaria](#)
- [Canada – Standards Council of Canada](#)
- [Colombia - Colombian Institute of Technical Standards and Certification](#)
- [Chile](#)
- [China – Standardization Administration of China \(SAC\)](#)
- [Croatia – Hrvatski Zavod za Norme<sup>\[11\]</sup> \(HZN\)](#)
- [Czech Republic](#)
- [Denmark](#)
- [Egypt](#)
- [Finland – SESKO](#)
- [France – AFNOR](#)
- [Germany – Deutsche Kommission Elektrotechnik Elektronik Informationstechnik im DIN und VDE \(DKE\)](#)
- [Greece](#)
- [Hungary](#)
- [Norway](#)
- [Oman](#)
- [Pakistan](#)
- [Perú](#)
- [Philippines](#)
- [Poland](#)
- [Portugal](#)
- [Qatar](#)
- [Romania](#)
- [Russia – Federal Agency for Technical Regulation and Metrology \(Rostekhnregulirovaniye\)](#)
- [Turkey – Turkish Standards Institution](#)
- [Ukraine](#)
- [United Arab Emirates](#)
- [United Kingdom – British Electrotechnical Committee \(BEC\), part of the British Standards Institution \(BSI\)](#)
- [United States – American National Standards Institute \(ANSI\) \(USNC/IEC\); The National Electrical Manufacturers Association \(NEMA\) also helps to develop and promote IEC standards<sup>\[12\]</sup>](#)

### Associate members (limited voting and managerial rights)

Source:<sup>[13]</sup>

- [Albania<sup>\[14\]</sup>](#)
- [Bahrain](#)
- [Bosnia & Herzegovina](#)
- [Cuba](#)
- [Cyprus](#)
- [Estonia](#)
- [Georgia<sup>\[14\]</sup>](#)
- [Iceland – Icelandic Standards \(IST\)](#)
- [Jordan<sup>\[14\]</sup>](#)
- [Kazakhstan](#)
- [Kenya](#)
- [Latvia](#)
- [Lithuania](#)
- [North Macedonia](#)
- [Malta](#)
- [Moldova<sup>\[14\]</sup>](#)
- [Montenegro](#)
- [Morocco – COMELEC<sup>\[15\]</sup>](#)
- [Nigeria](#)
- [Sri Lanka](#)
- [Tunisia](#)
- [Vietnam – Vietnamese National Committee Directorate for Standards and Quality \(STAMEQ\)](#)

## Affiliates

In 2001 and in response to calls from the WTO to open itself to more developing nations, the IEC launched the Affiliate Country Programme to encourage developing nations to become involved in the Commission's work or to use its International Standards. Countries signing a pledge to participate in the work and to encourage the use of IEC Standards in national standards and regulations are granted access to a limited number of technical committee documents for the purposes of commenting. In addition, they can select a limited number of IEC Standards for their national standards' library. Countries as of 2011 participating in the Affiliate Country Programme are: [16](#)

- Afghanistan
- Angola
- Antigua and Barbuda
- Armenia
- Azerbaijan
- Bangladesh
- Barbados
- Belize
- Benin
- Bhutan
- Bolivia
- Botswana
- Brunei Darussalam
- Burkina Faso
- Burundi
- Cambodia
- Cameroon
- Central African Republic
- Chad
- Comoros
- Congo
- Congo (Democratic Rep. of)
- Costa Rica
- Côte d'Ivoire
- Dominica
- Dominican Republic
- Ecuador
- El Salvador