

Introduction to IEC

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International Electrotechnical Commission

The world of standards

International:
IEC, ISO, ITU,
OIML

Regional:

Africa (e.g. AFSEC, SADC)

Americas (e.g. COPANT, CANENA,
MERCOSUR)

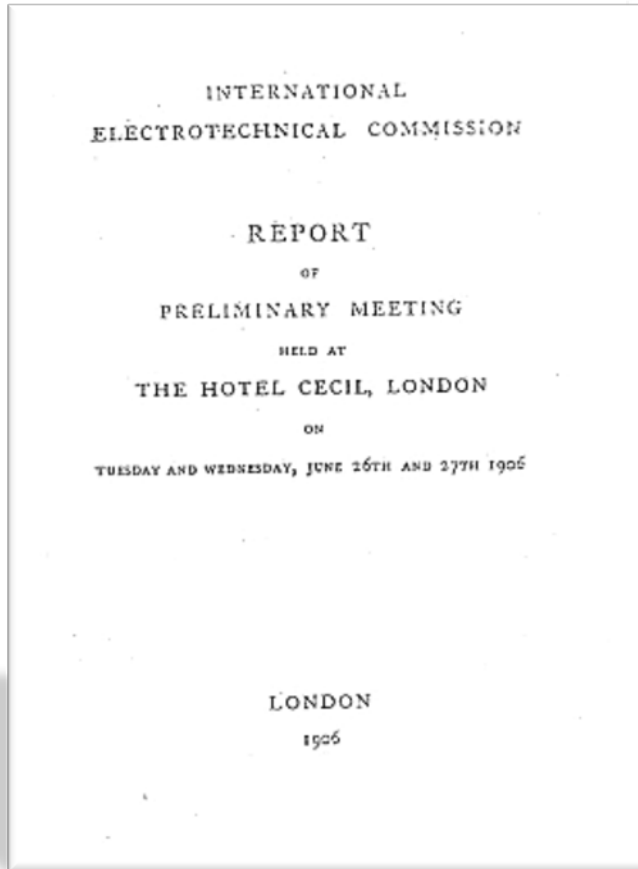
Asia-Pacific (e.g. ASEAN, PASC, SARSO)

Europe (e.g. **CENELEC**, ETSI, EASC)

National Committees:

(e.g. Austria, Brazil, China, France, Germany,
India, **Indonesia**, Japan, Korea, Malaysia,
Mexico, Philippines, Singapore, UK, USA)

The organization



- The IEC is a not-for-profit, non-governmental organization founded in 1906
- One member per country
- International Standards and Conformity Assessment Systems for all electrical and electronic components, devices and systems

How you might “see” the IEC

- Hydraulic turbines (TC 4)
- Solar photovoltaic energy systems (TC 82)
- Wind turbines (TC 88)
- Solar thermal electric plants (TC 117)

Overhead electrical
 conductors
 (TC 7)

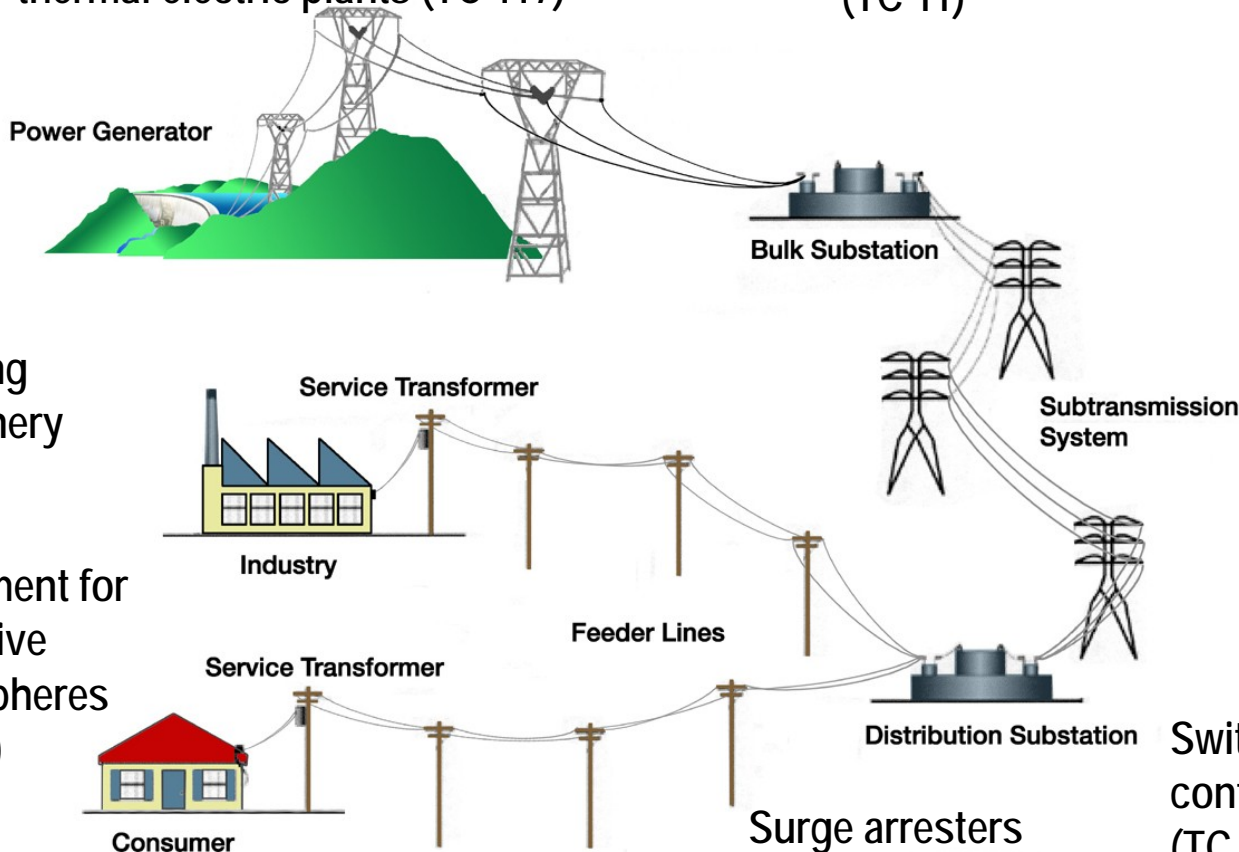
Overhead lines
 (TC 11)

Systems aspects for
 electrical energy supply
 (TC 8)
 Grid Integration of
 Large-capacity
 Renewable Energy (RE)
 Generation (SC8A)

Electric cables
 (TC 20)

Switchgear and
 controlgear
 (TC 17)

Surge arresters
 (TC 37)



Rotating
 machinery
 (TC 2)

Equipment for
 explosive
 atmospheres
 (TC 31)

But if you look further, at home

Electrical accessories
(TC 23)

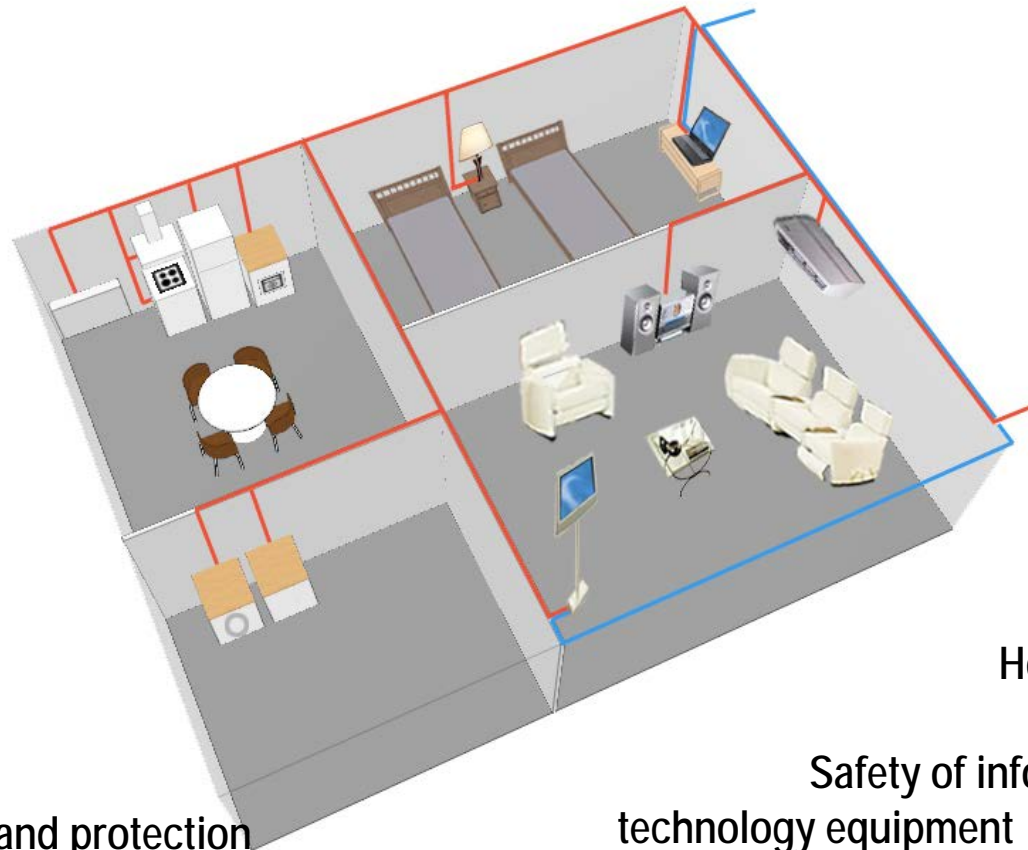
Fuses
(TC 32)

Winding wires
(TC 55)

Electric cables
(TC 20)

Lamps and related
equipment
(TC 34)

Electrical installations and protection
against electric shock
(TC 64)



Electromagnetic
compatibility
(TC 77)

Multimedia
(TC 100)

Fibre optics
(TC 86)

Cables, wires,
waveguides
(TC 46)

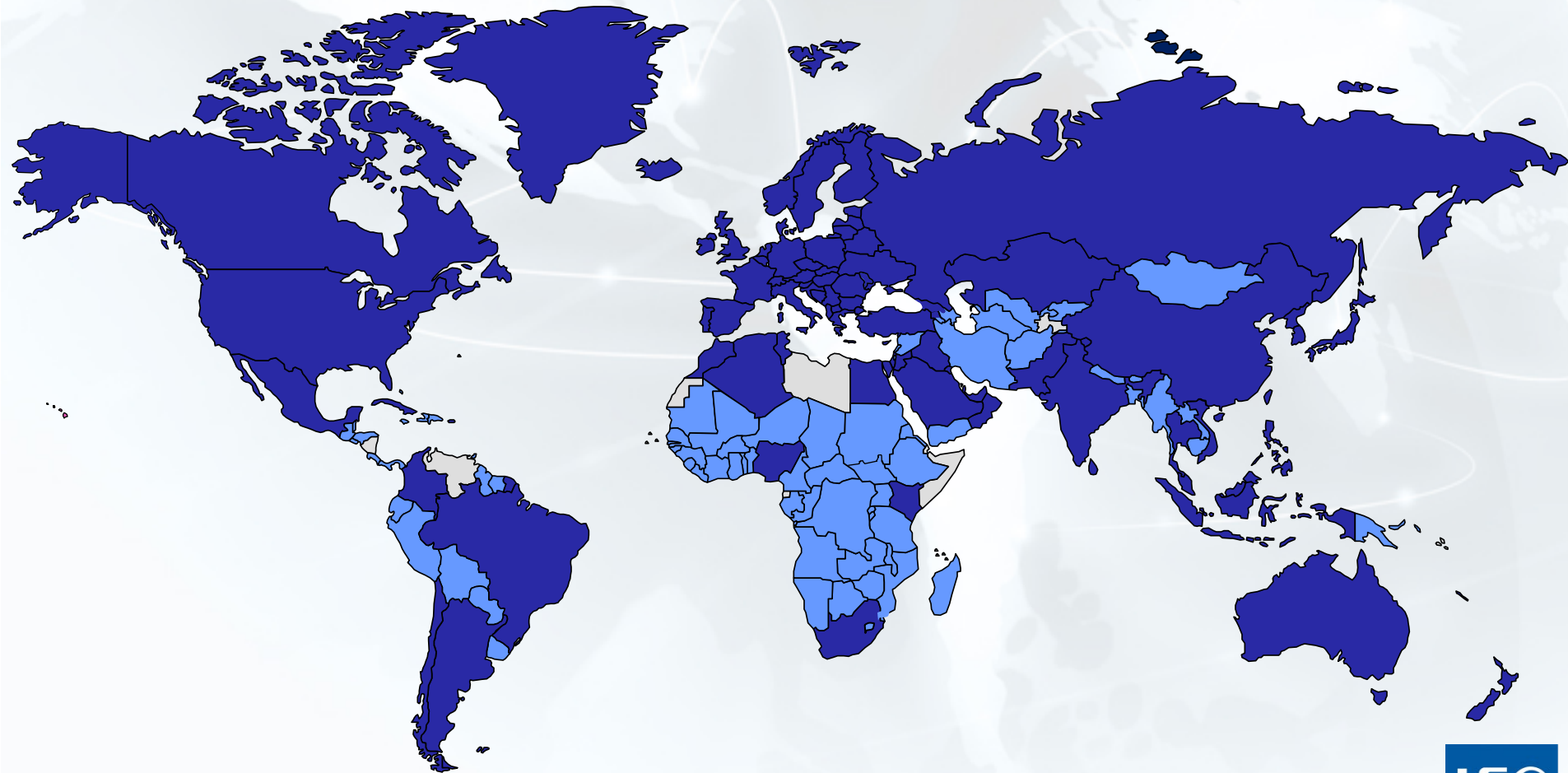
Household appliances
(TCs 59 & 61)

Safety of information
technology equipment (TC 108)

IEC Family: 170 countries

83 Members

87 Affiliates



83 National Committees

ALBANIA (AM)
ALGERIA
ARGENTINA
AUSTRALIA
AUSTRIA
BAHRAIN (AM)
BELARUS
BELGIUM
BOSNIA-HERZEGOVINA (AM)
BRAZIL
BULGARIA
CANADA
CHILE
CHINA
COLOMBIA
CROATIA
CUBA (AM)
CYPRUS (AM)
CZECH REP.
DENMARK
DPR OF KOREA (AM)

EGYPT
ESTONIA (AM)
FINLAND
FRANCE
GEORGIA (AM)
GERMANY
GREECE
HUNGARY
ICELAND (AM)
INDIA
INDONESIA
IRAN
IRAQ
IRELAND
ISRAEL
ITALY
JAPAN
JORDAN (AM)
KAZAKHSTAN (AM)
KENYA (AM)
KOREA, REP. OF

KUWAIT
LATVIA (AM)
LITHUANIA (AM)
LUXEMBOURG
MALAYSIA
MALTA (AM)
MEXICO
MOLDOVA (AM)
MONTENEGRO (AM)
MOROCCO (AM)
NETHERLANDS
NEW ZEALAND
NIGERIA (AM)
NORWAY
OMAN
PAKISTAN
PHILIPPINES
POLAND
PORTUGAL
QATAR
ROMANIA

RUSSIAN FEDERATION
SAUDI ARABIA
SERBIA
SINGAPORE
SLOVAKIA
SLOVENIA
SOUTH AFRICA
SPAIN
SRI LANKA (AM)
SWEDEN
SWITZERLAND
THAILAND
THE FYR OF MACEDONIA (AM)
TUNISIA (AM)
TURKEY
UKRAINE
UAE
UK
USA
VIETNAM (AM)

87 Affiliates

AMERICAS

Antigua & Barbuda
Bahamas
Barbados
Belize
Bolivia
Costa Rica
Dominica
Dominican Republic
Ecuador
El Salvador
Grenada
Guatemala
Guyana
Haiti
Honduras
Jamaica
Panama
Paraguay
Peru
Saint Kitts & Nevis
Saint Lucia
St Vincent & the Grenadines
Suriname
Trinidad & Tobago
Uruguay

AFRICA

Angola
Benin
Botswana
Burkina Faso
Burundi
Cabo Verde
Cameroon
Central African Rep.
Chad
Comoros
Congo
Côte d'Ivoire
DRC Congo
Eritrea
Ethiopia
Gabon
Gambia
Ghana
Guinea
Guinea Bissau
Lesotho
Liberia
Madagascar
Malawi
Mali
Mauritania
Mauritius
Mozambique
Namibia
Niger
Rwanda
Senegal
Seychelles
Sierra Leone
South Sudan
Sudan
Swaziland
Tanzania
Togo
Uganda
Zambia
Zimbabwe

ASIA

Afghanistan
Armenia
Azerbaijan
Bangladesh
Bhutan
Kyrgyzstan
Lebanon
Mongolia
Myanmar
Nepal
Palestine
Syrian Arab Rep.
Turkmenistan
Uzbekistan
Yemen

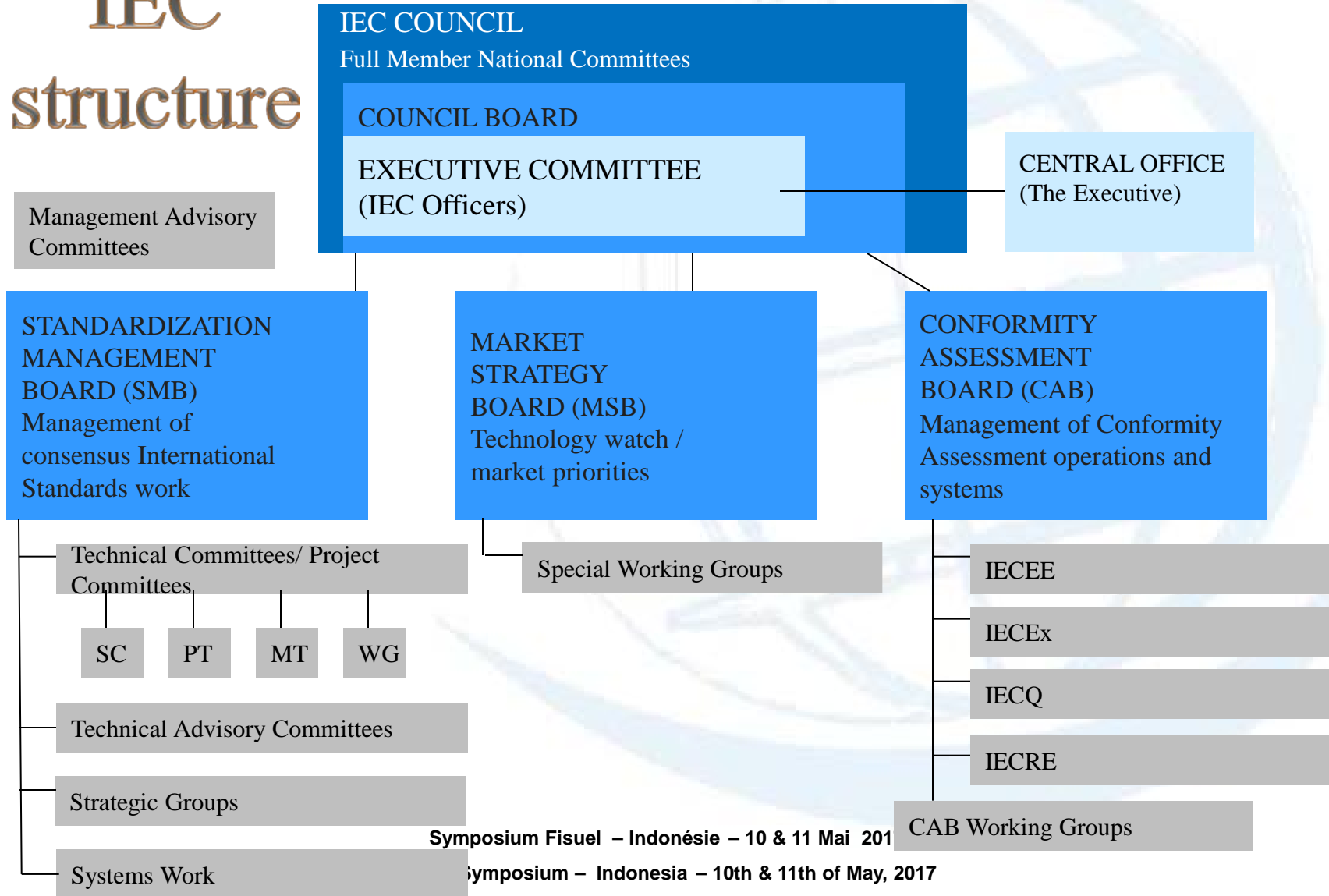
ASIA-PACIFIC

Brunei Darussalam
Cambodia
Fiji
Lao PDR
Papua New Guinea

Types of participation

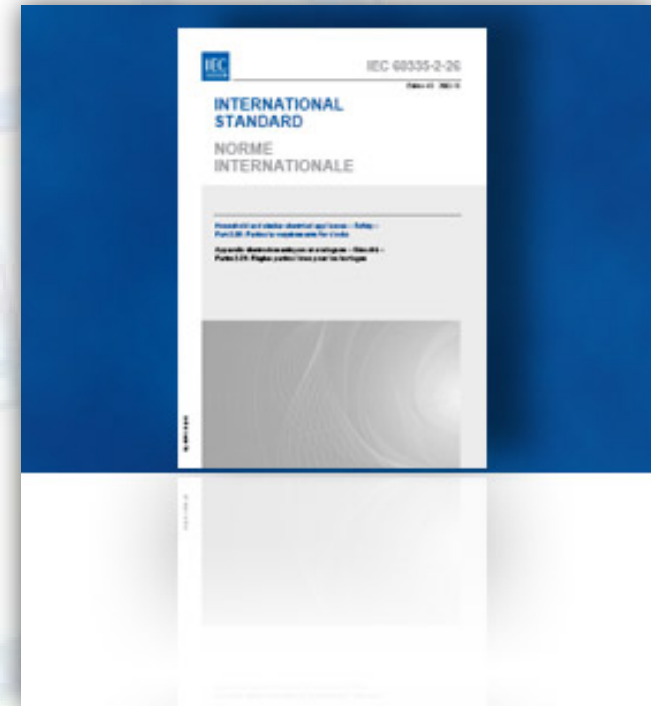
- IEC is a voluntary association of National Committees that fully represent electrotechnical interests in their countries
 - Government, industry, testing laboratories, academia, consumer groups...
- Membership – one member per country
 - Full Members (61) ex: China, Japan, Korea
 - Associate Members (22) ex: Sri Lanka, Viet Nam
- Affiliate Country programme
 - 87 participants ex: Bhutan, Cambodia

IEC structure



International Standard (IS)

A document, established by consensus and approved by IEC, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context



Technical Specification (TS)

Published when :

- Insufficient consensus for approval of an IS is available
- There is doubt that consensus has been achieved
- The subject is still under technical development
- Other reason precluding immediate publication of an IS



Publicly Available Specification (PAS)

- A publication responding to an urgent market need, representing either:
 - a consensus in an organization external to the IEC or,
 - a consensus of experts within a working group
 - Published after verification and checking that no conflict with existing IS by the committee concerned



Technical Report (TR)

➤ Informative document

Data of a different kind, e.g.

- Scientific supporting material
- Data collection
- Results of surveys
- State of the art
- Supplementary information or explanation



Conformity Assessment Board (CAB)

IECEE

System of Conformity Assessment Schemes for Electrotechnical Equipment and Components

CB Scheme

CB-FCS Scheme

PV Programme

E3 Energy Efficiency

Hazardous Substances

IECEX

System for Certification to Standards Relating to Equipment for use in Explosive Atmospheres

Ex Equipment

Ex Services

Ex Personnel

IECQ

Quality Assessment System for Electronic Components, assemblies, materials and related processes

Components + assemblies

Processes

HSPM

Avionics

LED Lighting

IECRE

System for certification to Standards relating to equipment for use in renewable energy applications

Wind Energy

Marine Energy

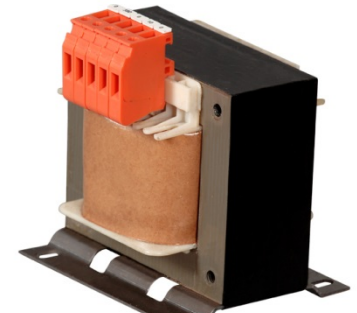
PV Solar

What value do the IEC CA Systems create?

- **World trade & a level playing field.**
- **One “reference” world-wide CA organisation**
- **Higher safety, quality & interoperability**
- **Aid regulatory recognition of safety & quality**
- **Create opportunity for smaller players**
- **Reduce industry’s time & cost to enter markets**
- **Global market access and encourage world trade**

IECEE

System for conformity testing and certification of electrotechnical equipment and components



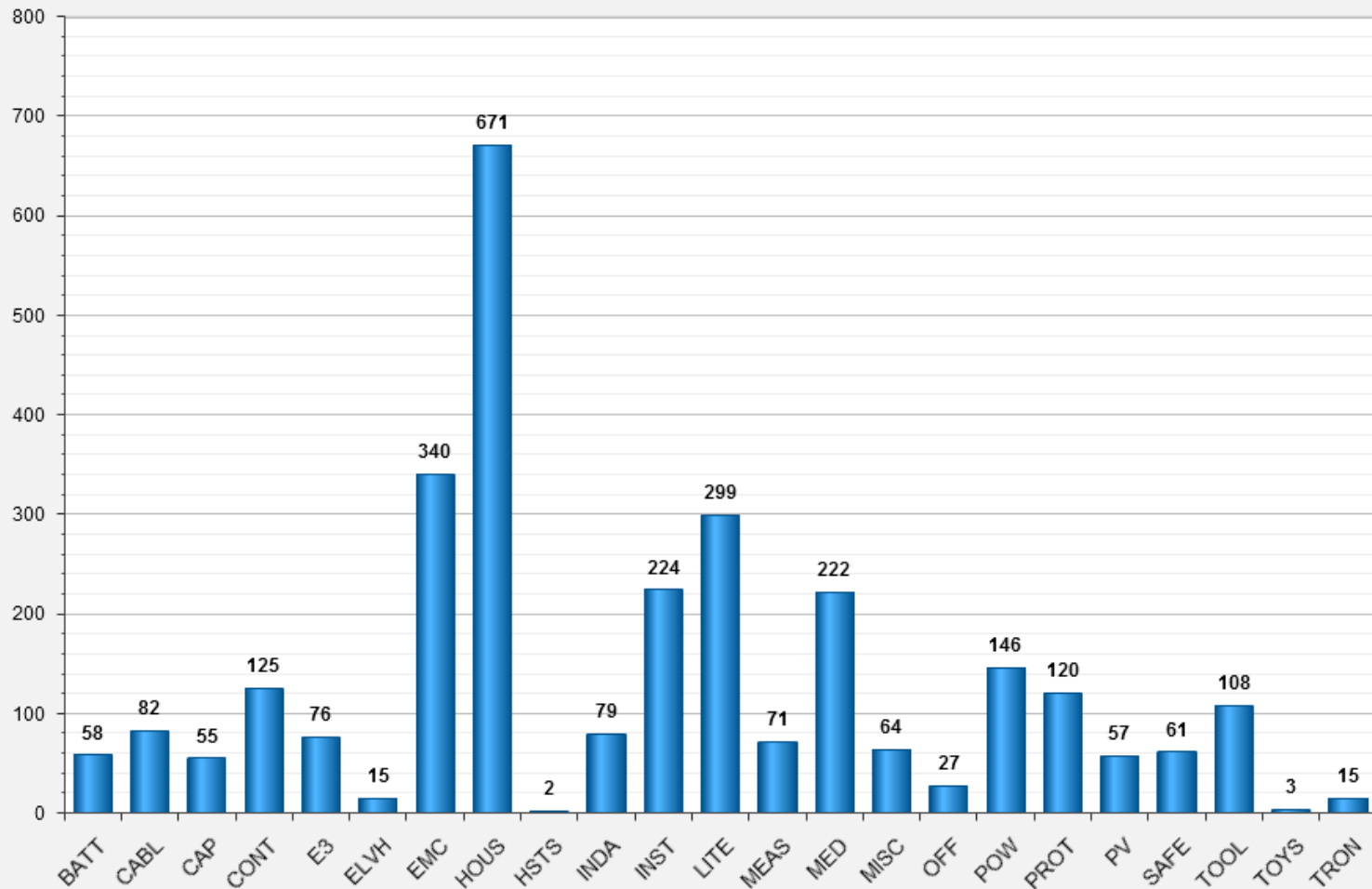
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10th & 11th of May, 2017

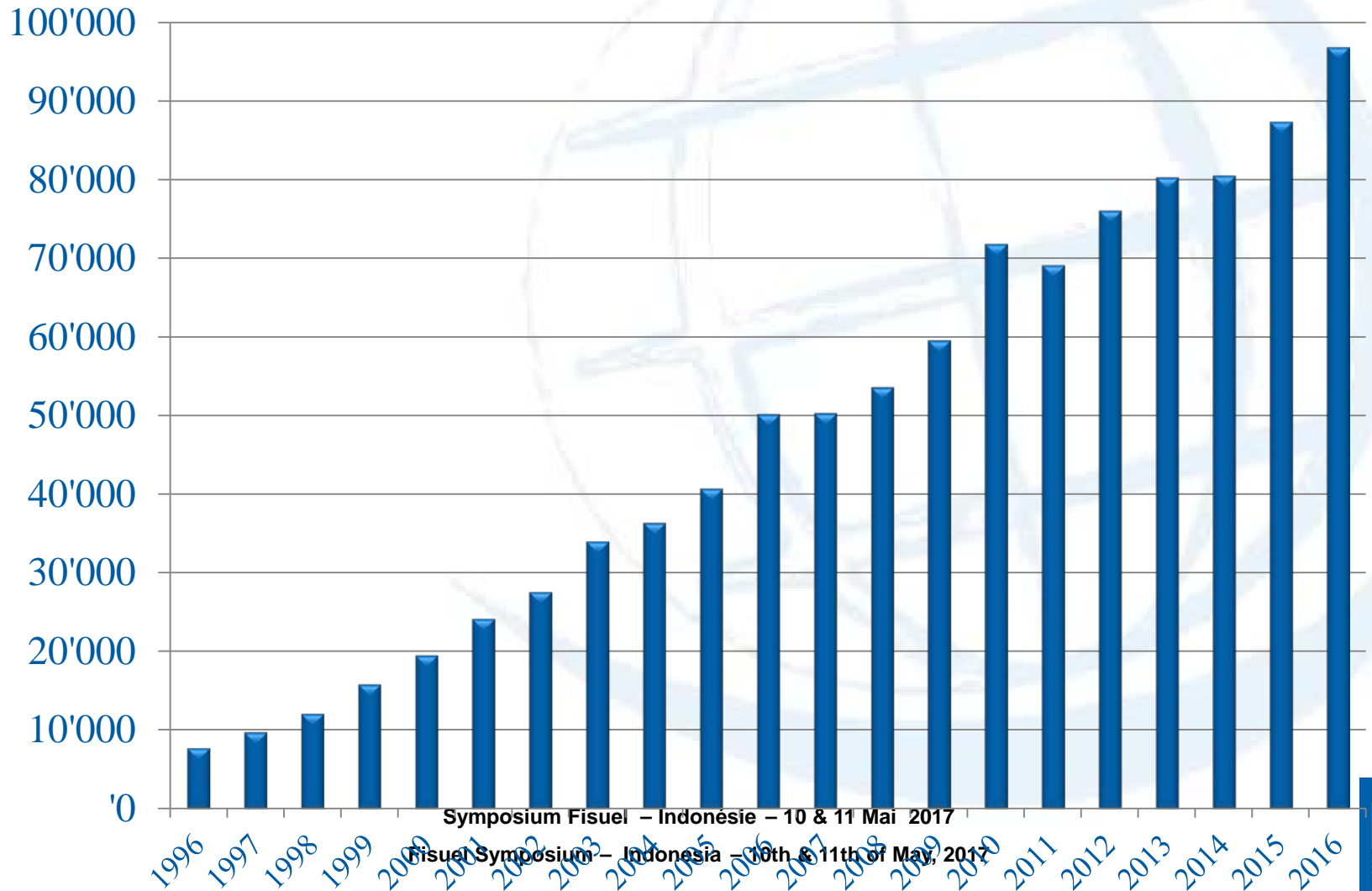
IECEE 23 Categories of Products

Total 2763

IEC Standards: Distribution by Category



IECEE CB Test Certificates issued



Members of the IECEE System

The Members and service providers of the IECEE System are:

- 53 Member Bodies - 1 per Country
- 77 Certification Bodies - 1 or more per Country
- Almost 500 Testing Laboratories - 1 or more per Country
- More than 2300 Manufacturer's Testing Laboratories under the responsibility of the relevant National Certification Body

53 participating countries

| | | | |
|---|---|---|--|
|  Argentina |  Finland |  Malaysia |  Slovakia |
|  Australia |  France |  Mexico |  Slovenia |
|  Austria |  Germany |  Netherlands |  South Africa |
|  Bahrain |  Greece |  New Zealand |  Spain |
|  Belarus |  Hungary |  Nigeria |  Sweden |
|  Belgium |  India |  Norway |  Switzerland |
|  Brazil |  Indonesia |  Pakistan |  Thailand |
|  Bulgaria |  Ireland |  Poland |  Turkey |
|  Canada |  Israel |  Portugal |  Ukraine |
|  China |  Italy |  Russian Federation |  United Arab Emirates |
|  Colombia |  Japan |  Saudi Arabia |  United Kingdom |
|  Croatia |  Kenya |  Serbia |  United States |
|  Czech Rep. |  Korea Rep. of |  Singapore |  Viet Nam |
|  Denmark | | | |

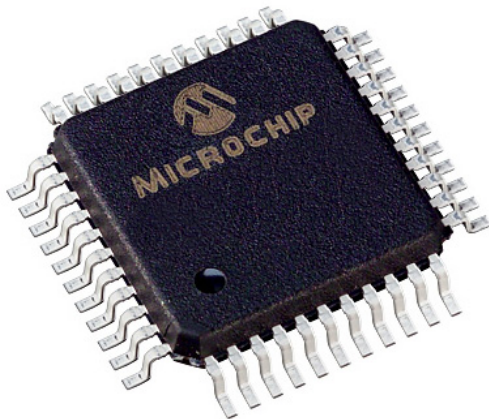
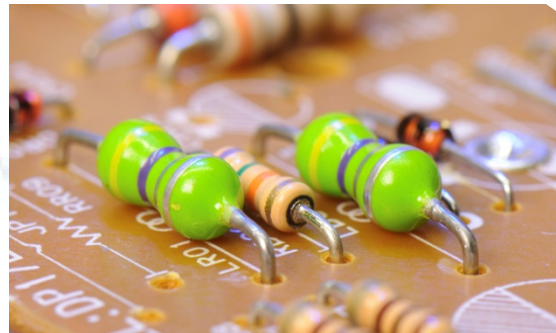
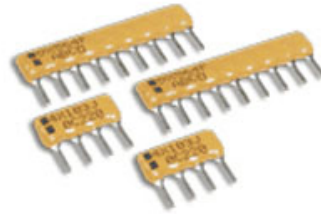
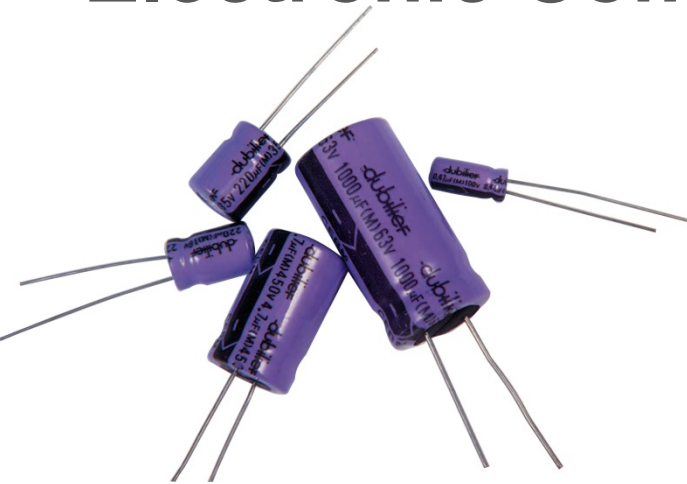
IEC System for Certification to Standards Relating to Equipment for use in Explosive ('Ex') Atmospheres.



Scope and Standards for IECEx include ...

- Electrical Equipment Conformance to **IEC 60079 Series** and **IEC 61241 Series** requirements
- Non-electrical Equipment to **ISO/IEC 80079 Series**
- Hazardous Area Classification to **IEC 60079-10**
- Ex Equipment Installation and Inspection
 - to **IEC 60079-14** and **IEC 60079-17** requirements
- Ex Equipment Maintenance, Repair, Overhaul and Reclamation to **IEC 60079-19**
- Personnel Competence to **ISO/IEC 17024**
-

IECQ - Quality Assessment System for Electronic Components



IECRE



Symposium Fisuel – Indonésie – 10 & 11 Mai 2017

Fisuel Symposium – Indonesia – 10th & 11th of May, 2017







IEC Offices



IEC Central Office & IECEE/IECRE Secretariat

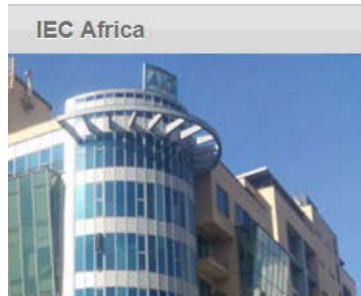


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 IEC Central Office
[More about the IEC Central Office](#)
 Visit the [IECEE](#) & [IECRE](#) websites

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 Australia
 Tel : +61 246 28 4690
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IEC Africa

IEC-AFRC

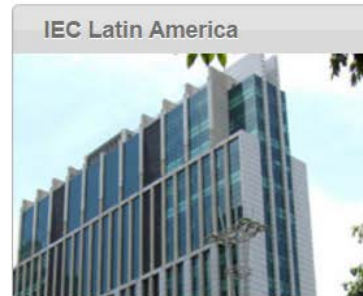
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 Tel : + 254 20 3673000



IEC Asia-Pacific

IEC-APRC

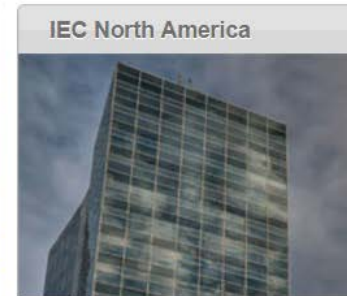
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 Tel : + 65 6377 5173



IEC Latin America

IEC-LARC

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 Brazil
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IEC North America

IEC-ReCNA

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 U.S.A.
 Tel : + 1 508 755 5663

Team in Singapore



Symposium Fisuel – Indonésie – 10 & 11 Mai 2017

Fisuel Symposium – Indonesia – 10th & 11th of May, 2017

Key activities

➤ Promotional

- Participation in Regional Groups/Events
- Information Sessions and Training Activities
- Venue for AC/AG/WG/MT meetings

➤ Technical

- Support to 53 TCs/SCs
- Secretary to Advisory Committees – ACTAD and ACEE

IEC in figures

- IEC Family (Members & Affiliates) 83 + 87 = 170
- Number of Technical Committees 216
- Number of Working Groups close to 1 450
- Number of experts approx. 20 000
- Number of pubs. in catalogue close to 10 000
- Conformity Assessment Systems 4
- Number of CA certificates approx. 1 mio
- Regional offices 5

THANK YOU

MERCI



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