



# IEC International Standards and Conformity Assessment Systems – *an activity update*

49<sup>th</sup> CIML Meeting  
Mark Amos, IEC



INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

# International Electrotechnical Commission (IEC)

- A not-for-profit, non-government organization
- Founded in 1906 to
  - promote international co-operation on all questions of standardization and conformity assessment
  - provide International Standards and Conformity Assessment Systems for all electrical and electronic components, devices and systems



# IEC's scope of work



**All electrical and electronic components, devices and systems ...**

**... from power generation, transmission and distribution incl. all renewables, off-grid/rural electrification to Smart Grids and cities**

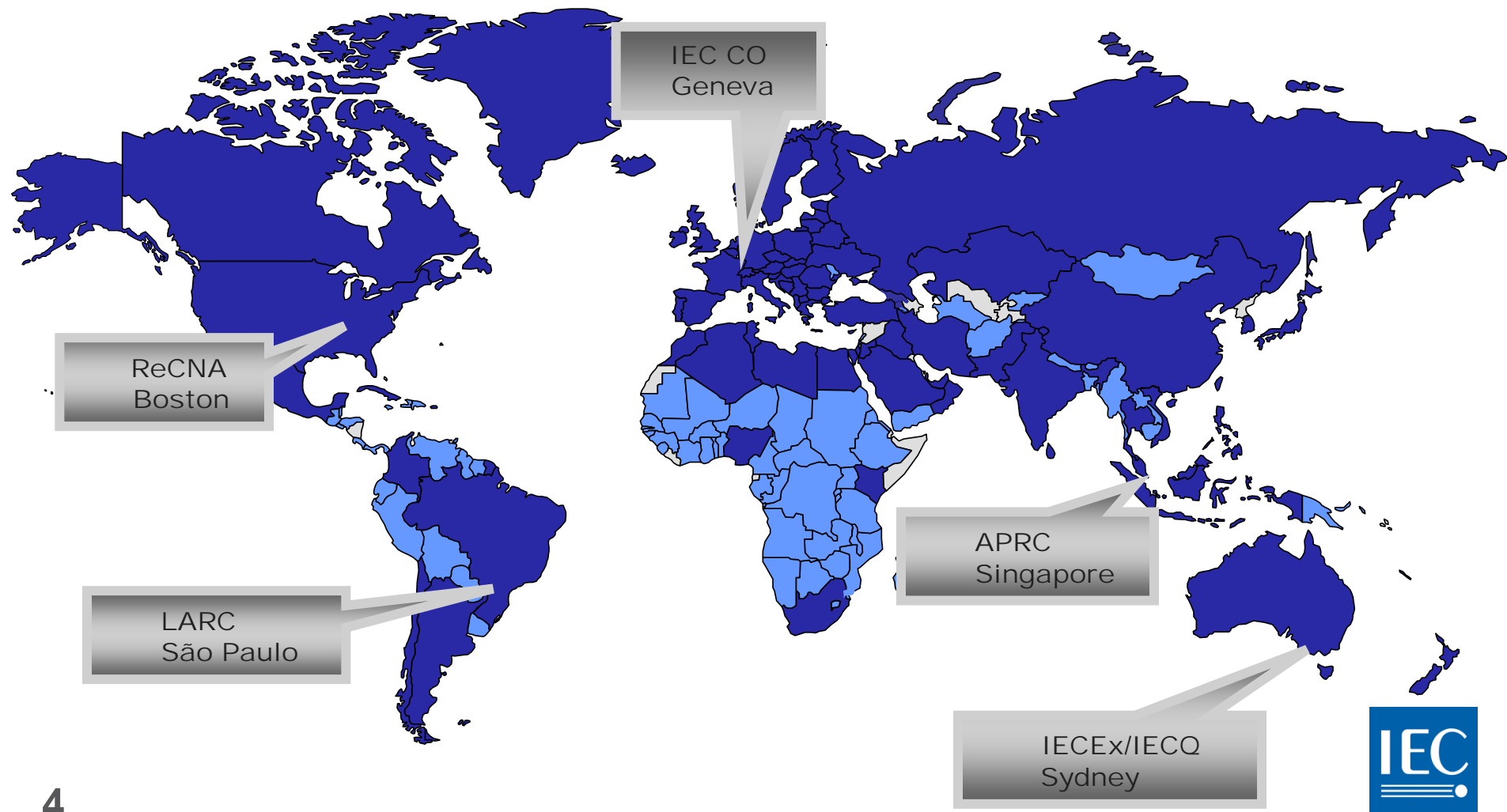
**... about safety, electromagnetic interference, environment & waste management**



# IEC's Global Reach

82 Members

83 Affiliates

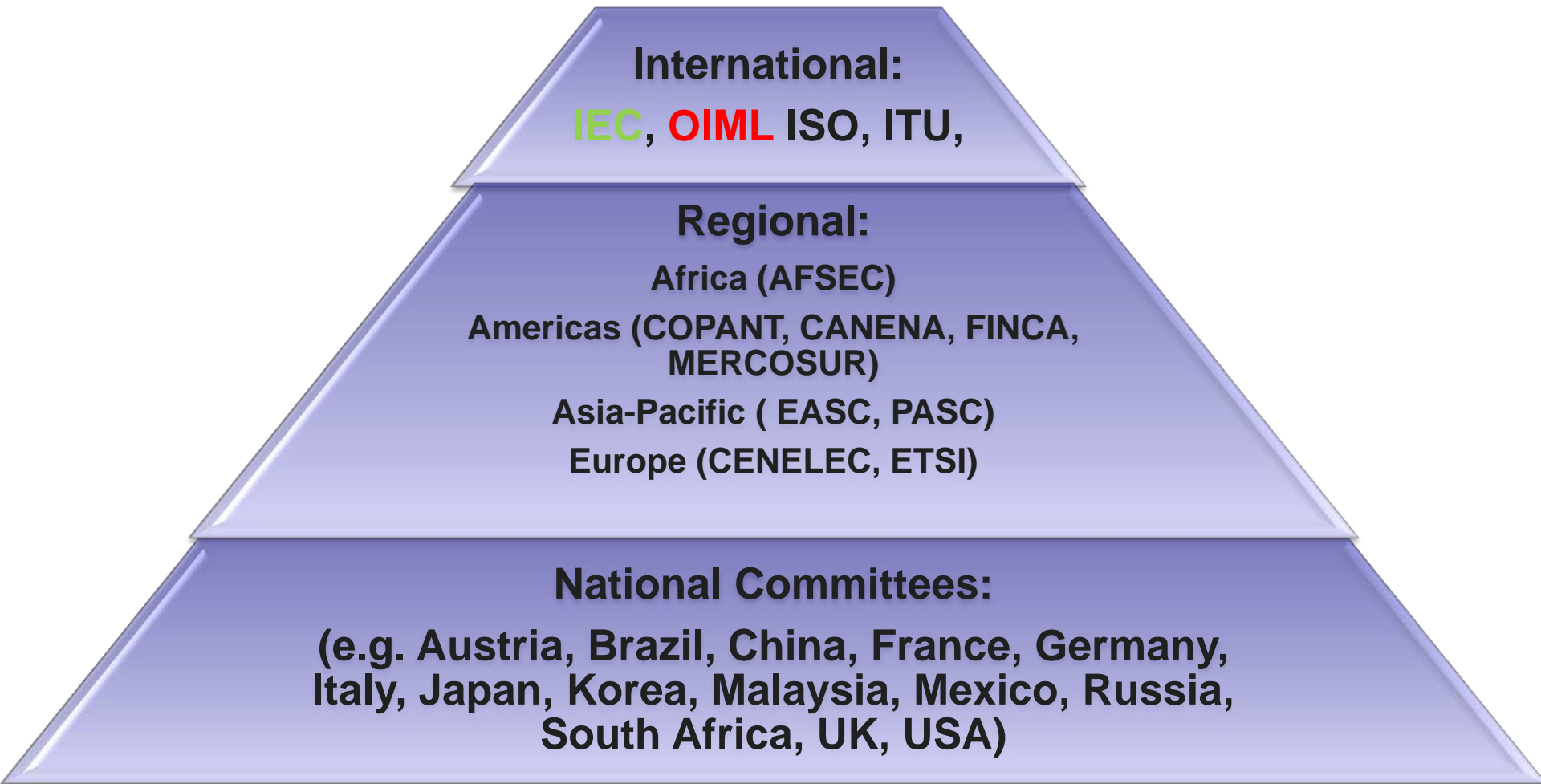


# IEC in numbers

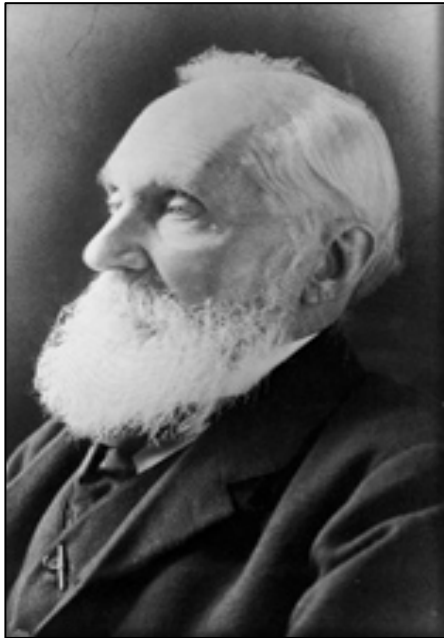
■ Technical committees	> 170
■ Working groups	> 1200
■ Number of experts	> 15,000
■ Publications	> 7,200
■ CA Systems	4
■ CA Certificates and reports	> 1,000,0000



# The world of standards



# IEC and OIML



*“... when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind; ...”*

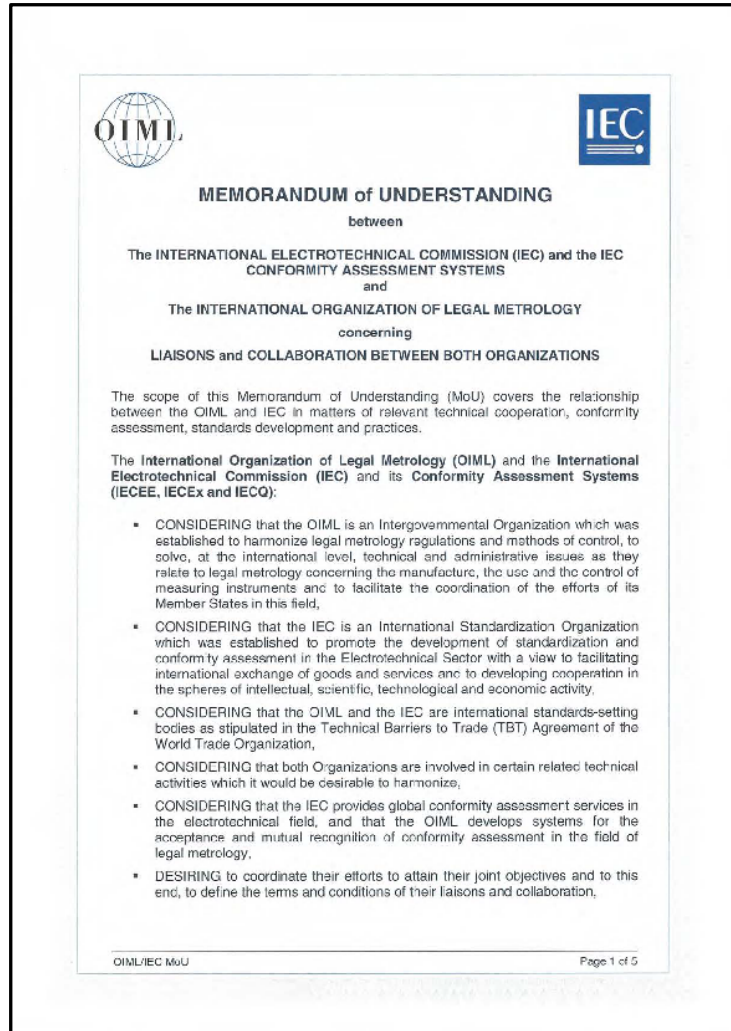
*"If you cannot measure it, you cannot improve it."*

Lord Kelvin, 1883  
1<sup>st</sup> President of IEC

***IEC Standards presume and require reliable measurement – hence the activities of the IEC and the OIML are interdependent***



# OIML & IEC MOU



- *Formalises our relationship*
- *Permits and encourages cooperation and collaboration*
- *Facilitates participation and joint publications*
  - *ISO/IEC Guide 99, International Vocabulary of Metrology*
  - *ISO/IEC Guide 98-1, Uncertainty of Measurement*
- *..... is working well for IEC*
- *.... IEC welcomes further cooperation and a stronger relationship*



# Achieving its Mission

- To achieve its mission, the IEC works in three ways:
  - through its National Committee members,
  - through co-operative agreements, and
  - directly
- and encourages national use of **IEC International Standards** and **IEC Conformity Assessment Systems**

# Standards put into practice...

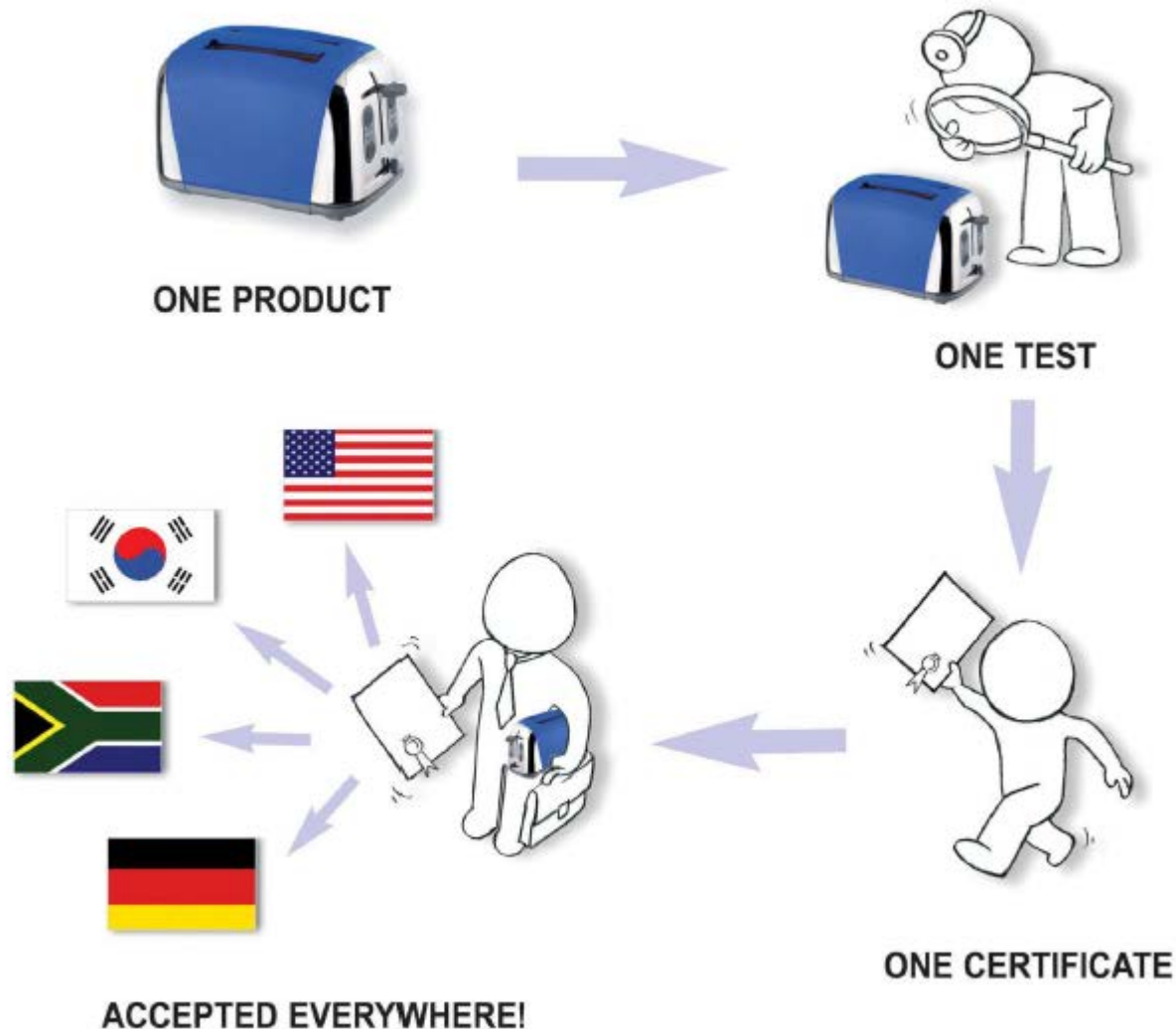
## *...through Conformity Assessment*

provide **confidence** that:

- the product, service, process or person is what they appear to be
- AND
- function like they should in terms of:
  - safety
  - performance
  - reliability
  - interconnectivity
  - Interoperability
  - competence
  - accuracy

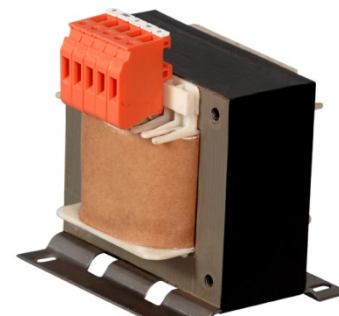


# IEC CA Systems - Principles



# IECEE

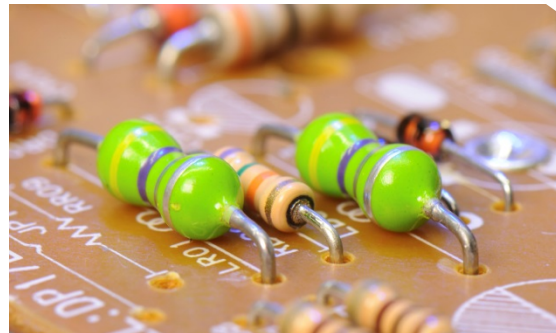
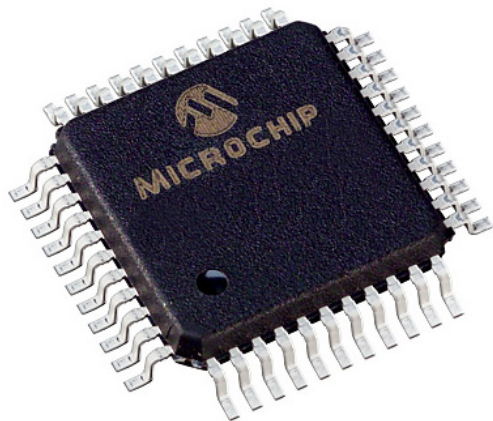
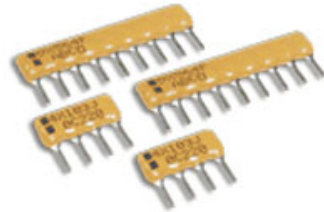
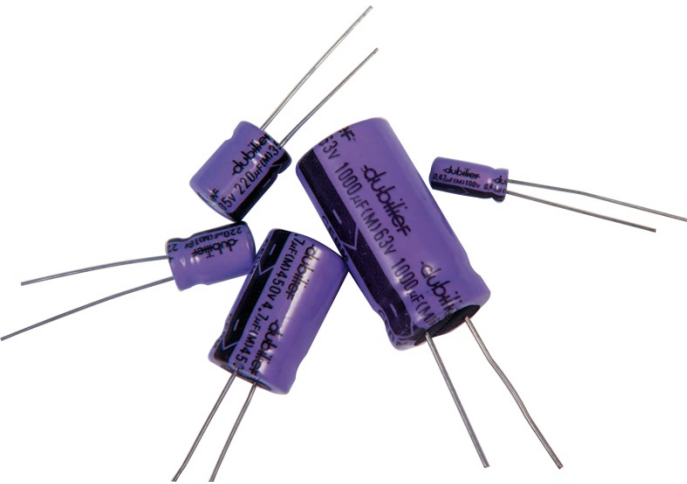
System for conformity testing and certification of **electrotechnical equipment and components**





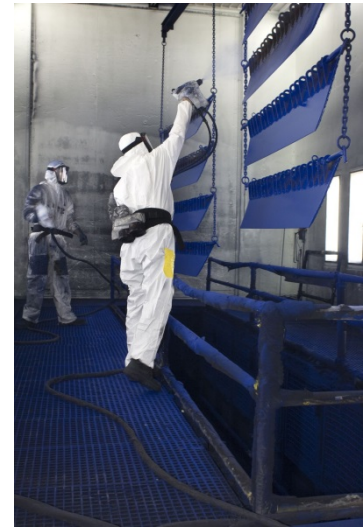
# IECQ

## Quality Assessment System for **Electronic Components**



# IECEX

Worldwide system for certification to standards relating to **equipment for use in explosive atmospheres**



# IECRE

## IEC System for certification to Standards relating to **equipment for use in Renewable Energy Applications**



- Solar – Photovoltaic
- Solar – Thermal
- Wind Power
- Marine Energy
- Hydro Energy
- Geothermal
- Biomass and biogas



# IEC Systems Approach

In recognition of the increasing desire for interoperability and interconnectivity of products and components not previously ever envisaged as parts of functioning 'systems', IEC has established:

- Systems Evaluation Groups
- Systems Committees
- a Systems Resource Group

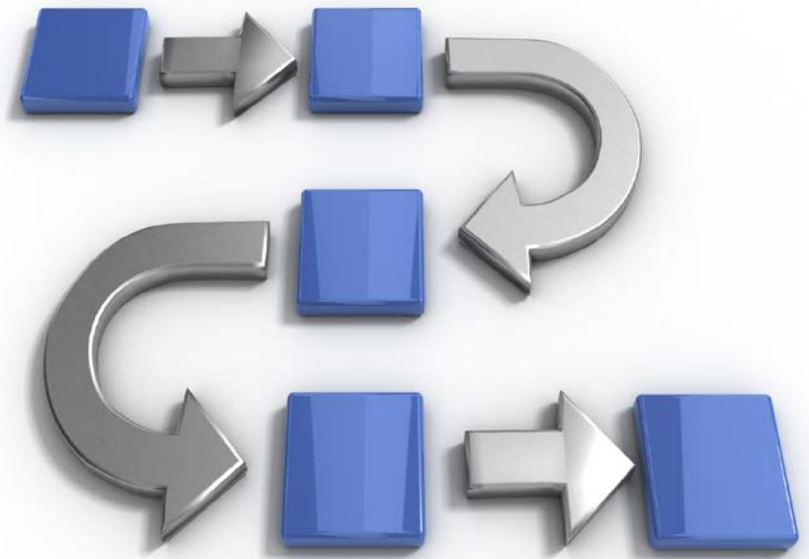




# IEC Systems Approach & CA

In response to strong interest from insurers, regulators and investors, the Systems Approach will include CA Systems for.

- System design, set-up & installation
- System Inspection
- Maintenance, repair, and end of life management;
- Competence of personnel



# IEC Affiliate Country Programme (ACP)



- English, French, Russian and Spanish versions available at <http://www.iec.ch/affiliates/programme/>
- Enquiries to the Affiliate Programme Secretariat at [affiliates@iec.ch](mailto:affiliates@iec.ch)

# IEC Affiliate Conformity Assessment Status

Conformity Assessment is an expectation in many countries throughout the world. However the concept has not necessarily been fully integrated In most of the countries participating in the IEC Affiliate Country Programme



***ACAS*** is provided via the ACP to raise awareness and provide a better understanding of the specific requirements for Conformity Assessment activities.

# IEC Young Professionals Programme



- Developing the next generation of ‘standardisors’
- Promoting and enabling participation at national and international levels
- Success to date over 5 years = 274 participants from 42 countries
- IEC Guidelines available to National Committee to assist local replication.





**Mark Amos**  
**mark.amos@iecex.com**



INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION