

Joint ITU-UNIDO Forum on Sustainable Conformity Assessment for Asia-Pacific Region

**(Yangon City, Republic of Union of Myanmar
25-27 November 2013)**

Creating a Credible Conformity Assessment Infrastructure – The Role of the IEC

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Yangon City, Myanmar, 25 November 2013

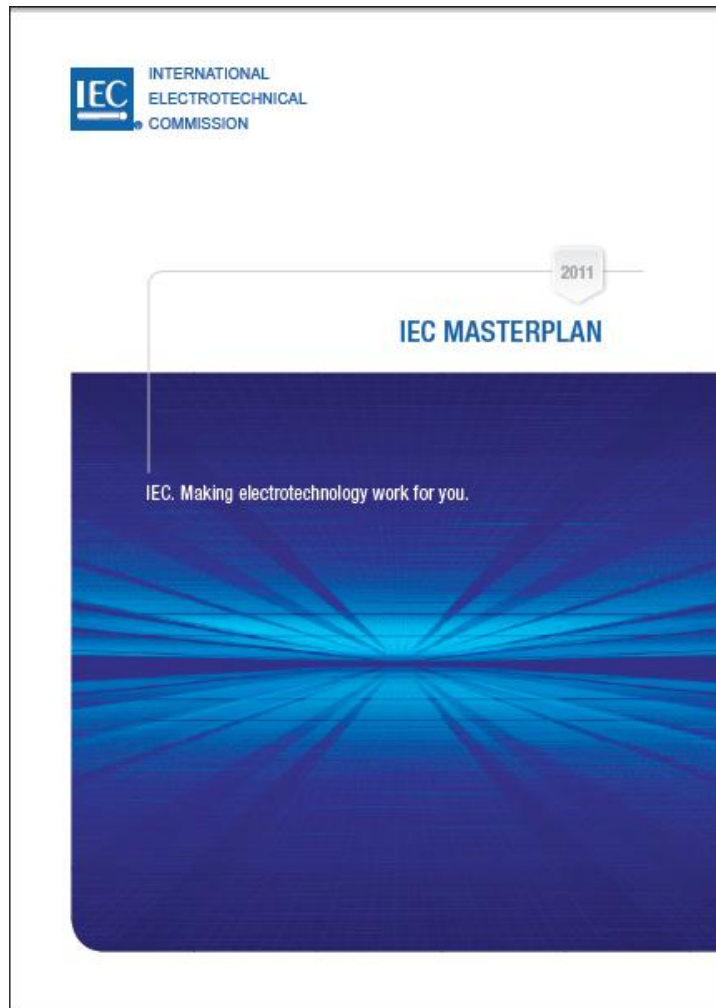




Conformity Assessment

..... any activity that determines whether a product, system, service, process or person's competence corresponds to the requirements contained in a **specification.**

This specification may be a **standard** that provides a technical description of the requirements



As defined in the ***IEC Masterplan***, the TWO PILLARS of IEC are:

1. **Standardisation**
2. **Conformity Assessment**
of
electrotechnologies



Standards put into practice...

...through conformity assessment (CA)

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



IEC CA Systems - Objectives

- **Global relevance, acceptance and participation**
- **Remove delays and costs of multiple testing and approval:**
 - **Products get to market more quickly and expense reduced**
 - **Trade barriers caused by different certification criteria in various countries reduced**
 - **New markets opened up**
- **Help to ensure a fair global trading system in accordance with WTO**

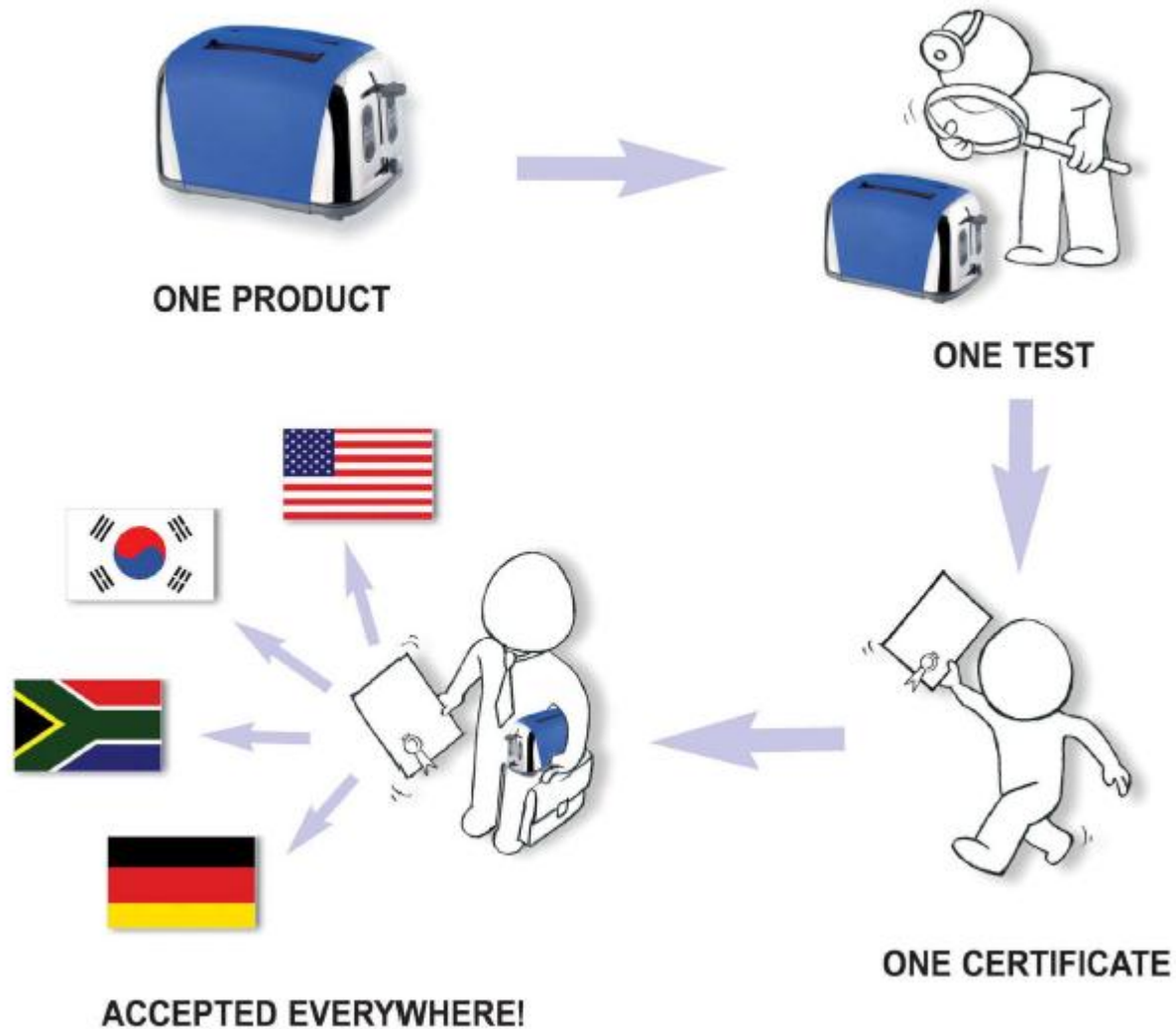


Key drivers for IEC CA

- **Removal** of costly duplication of testing and certification at local level AND the delays in accessing markets with new products and services
- **Reduce** trade barriers caused by different requirements in different markets
- **Confidence** among Industry, Regulators and Stakeholders – particularly for complex, critical or high capital cost equipment and systems
- **Trust and cooperation** among Certifying Bodies (Labs + Certifiers) from a 'level playing field' for CBs and TLs to compete
- **Portability** and **visibility** of assessment results and certificates



IEC CA Systems - Principles





Forms of Certification

1st Party

- Self Declaration by supplier
- Rely on supplier's
 - Test Facilities
 - Test Procedures
 - Pass/Fail Criteria

2nd Party

- = 'Purchaser Assessment' ... *'buyer beware'*
- Rely on purchaser's
 - Test Facilities
 - Test Procedures
 - Pass/Fail Criteria
 - Reliance on product knowledge and test methods by purchaser

3rd Party

- Independent assessment by qualified and recognised Test Lab and Certification Body
- ✓ No commercial influence
- ✓ Traceability via accreditation
- ✓ All suppliers treated the same
- ✓ Confidence
- ✓ Portability



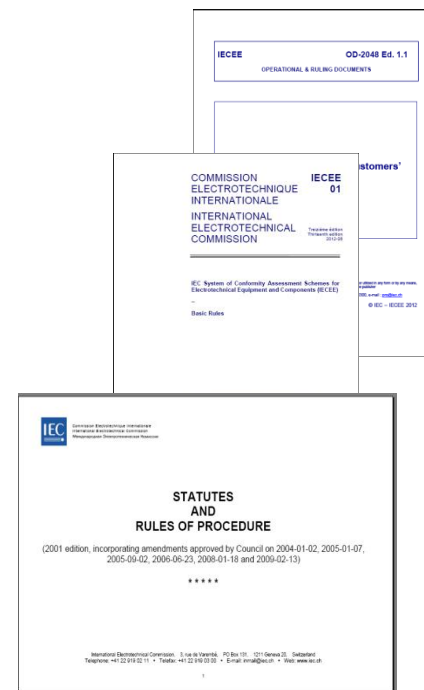
Mutual Recognition

- IEC CA Systems are **3rd Party** and are founded on **MUTUAL RECOGNITION ARRANGEMENTS**
- between nationally recognised Certification Bodies ('CBs') issuing Certificates on the basis of technical reports from accepted Testing Laboratories ('TLs') and other evidence
- where the CBs and TLs must accept each others output without further testing

Fairness PLUS Consistency PLUS Reciprocity

provided by MUTUAL RECOGNITION
ARRANGEMENTS based on:

- Compliance with IEC Statutes & Rules
- Industry Based Management Committee
- One single set of Rules and Operational procedures for CBs and TLs
- ALL CBs and TLs undergo the same qualification process to join IEC CA Systems via peer assessment
- Common test report and certificate format used by ALL CBs and TLs



SGS Fimko Ltd



SLG Prüf- und Zertifizierungs GmbH



INSTITUTO ARGENTINO DE NORMALIZACIÓN Y CERTIFICACIÓN



SABS



bsi.

eurofins

Product Service



L C I E



Intertek



JQA

kiwa Partner for progress



certif Associação para a Certificação



Nemko

TUV NORD



OVE

AENOR

SGS



ASOCIACIÓN DE NORMALIZACIÓN Y CERTIFICACIÓN, A.C.



JET



KTR



NCB GOST Re

KERI

electrosuisse



kti



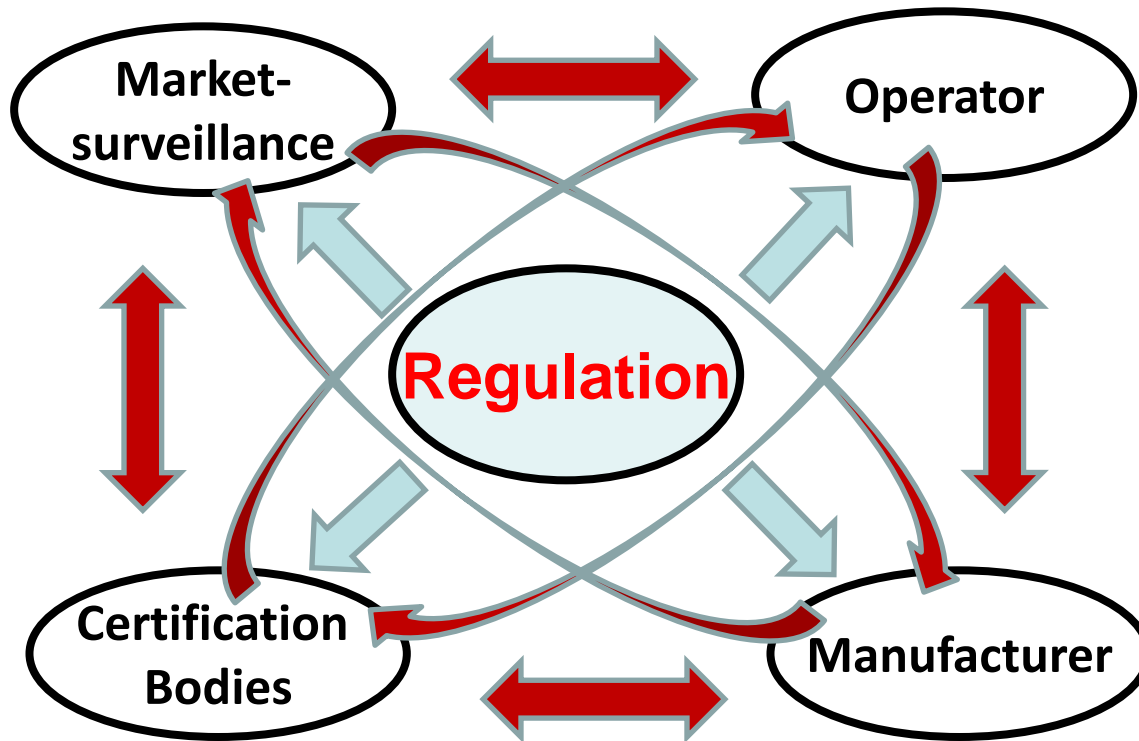
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DEKRA

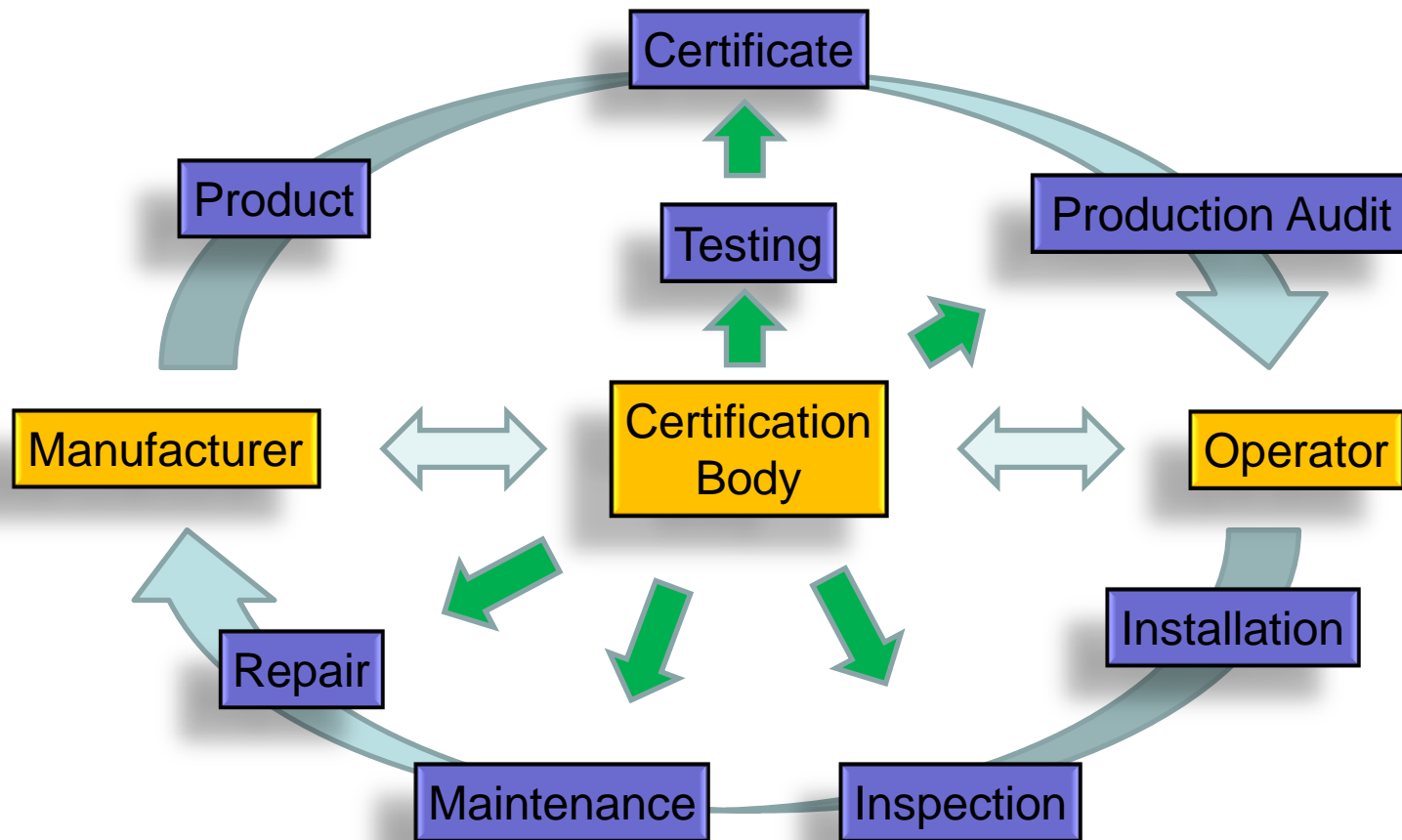
EVPÜ



المهنة السعودية للمواصفات والمقاييس والجودة Saudi Standards, Metrology and Quality Org.

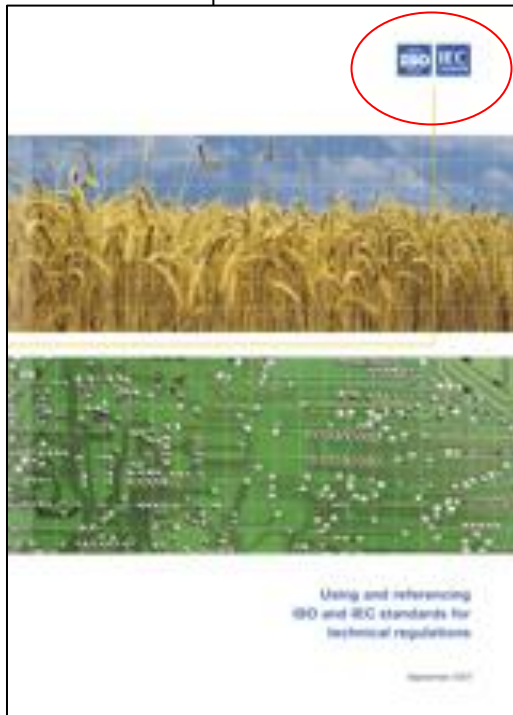
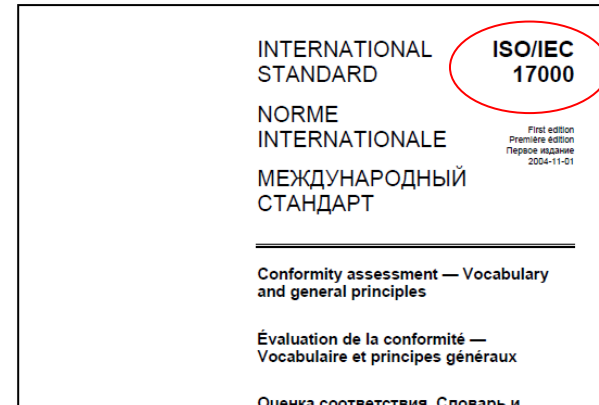
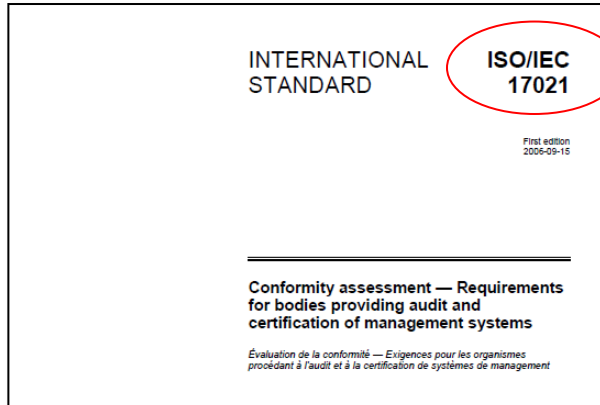


Ongoing compliance activities





Harmonisation in CA arena



Common Standards and Guides

Testing

ISO/IEC 17025

Production

ISO/IEC 17021

Certification

**ISO Guide 65 / 67
[ISO/IEC 17065]**

**IEC
ISO
IECEX**

Service

IECEX 03

**Persons
Competency**

ISO/IEC 17024



**IECEX MEETING IN FORTALEZA, BRAZIL
WORKSHOP UNECE / SIEEE**

GENERAL REGULATIONS

September, 2013

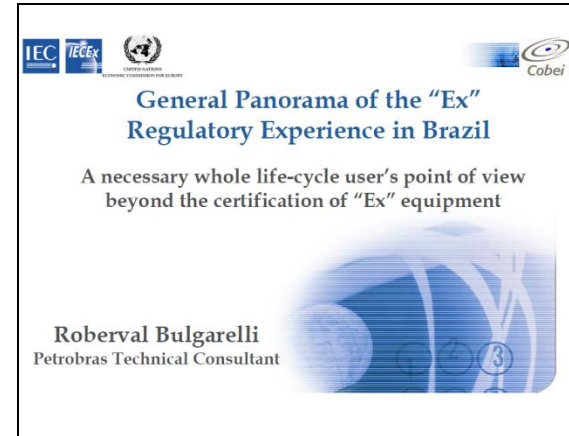
<http://www.iecex.com/fortaleza/docs/Presentation%20PERU%20IEC%20Ex%20Brasil%202013-set-18.ppt>



Technical Regulation of the Customs Union

ALEXANDER ZALOGIN
Acting IECEx Chairman,
Chairman of Russian Technical Committee TC 403
Convener of WG 16 of IRT F8 EU-Russia
Head of ExCB,
General Director of
NANIO CCVE

http://www.iecex.com/fortaleza/docs/Alexander_Zalogin.pdf

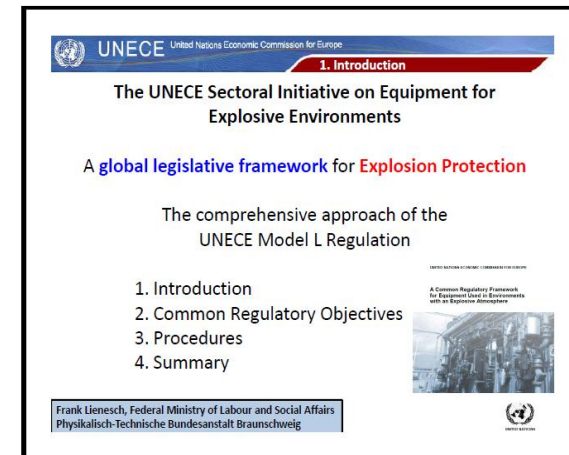



**General Panorama of the "Ex"
Regulatory Experience in Brazil**

A necessary whole life-cycle user's point of view
beyond the certification of "Ex" equipment

Roberval Bulgarelli
Petrobras Technical Consultant

http://www.iecex.com/fortaleza/docs/General_Panorama_the_Ex_regulatory_experience_Brazil_Bulgarelli.pdf



UNECE United Nations Economic Commission for Europe

1. Introduction

**The UNECE Sectoral Initiative on Equipment for
Explosive Environments**

A global legislative framework for **Explosion Protection**

The comprehensive approach of the
UNECE Model L Regulation

1. Introduction
2. Common Regulatory Objectives
3. Procedures
4. Summary

Frank Lienesch, Federal Ministry of Labour and Social Affairs
Physikalisch-Technische Bundesanstalt Braunschweig

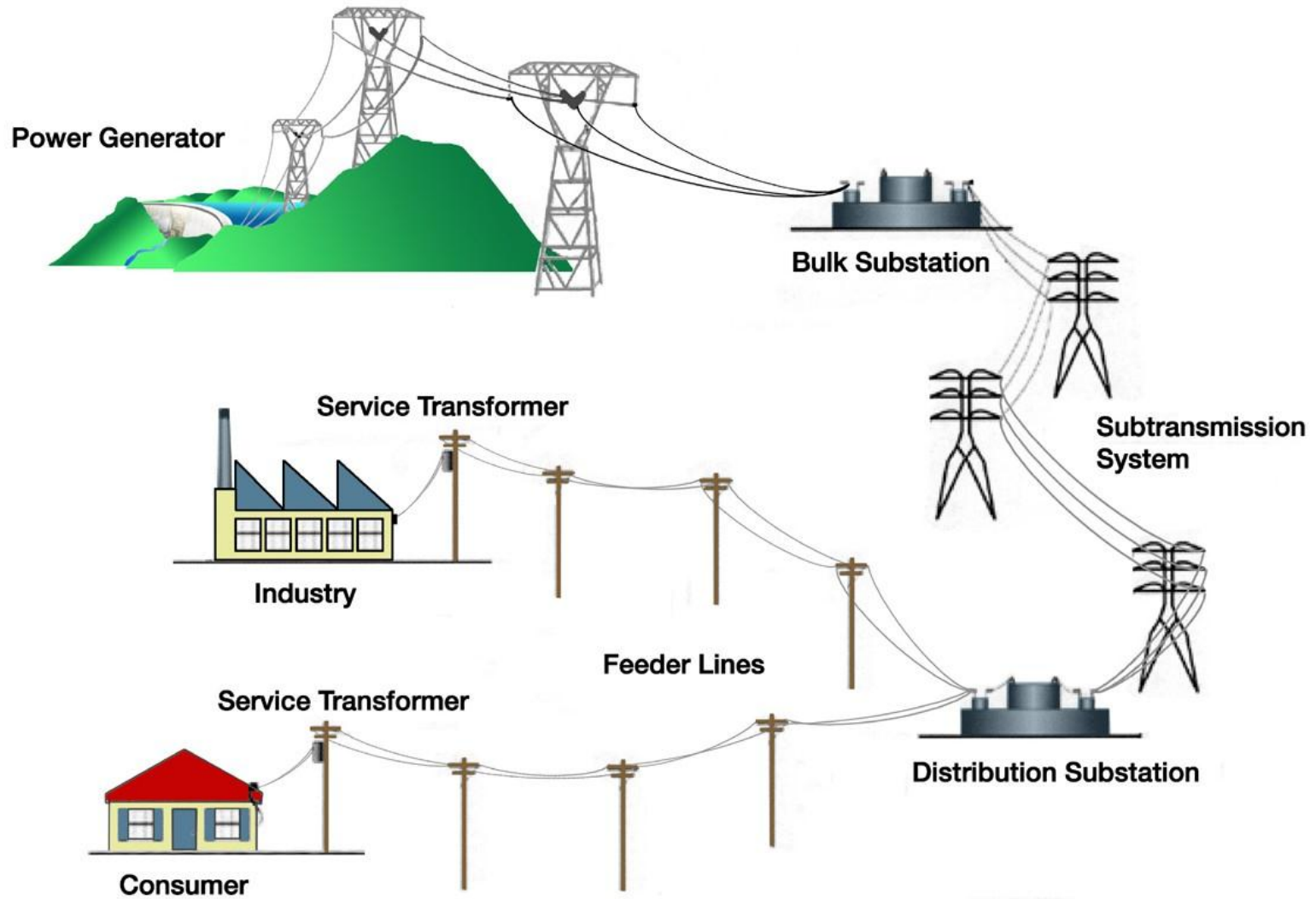
http://www.iecex.com/fortaleza/docs/Frank_Lienesch.pdf

Applications and Impacts in ICT in developing economies

- The World Bank estimated in 2011 that over 1.2 billion people (20% of the world's population) are still without access to electricity worldwide, almost all of whom live in developing countries. This includes about 550 million in Africa, and over 400 million in India.
- Access to electricity must be environmentally and socially sustainable - "Smart Grids" which have a critical **ICT** element have a major role to play in meeting these challenges
- Standards for Smart Grids and related CA Systems development are a major focus of IEC work



"Traditional" IEC Standardisation areas





Areas of increasing IEC Standardisation

Electrical accessories

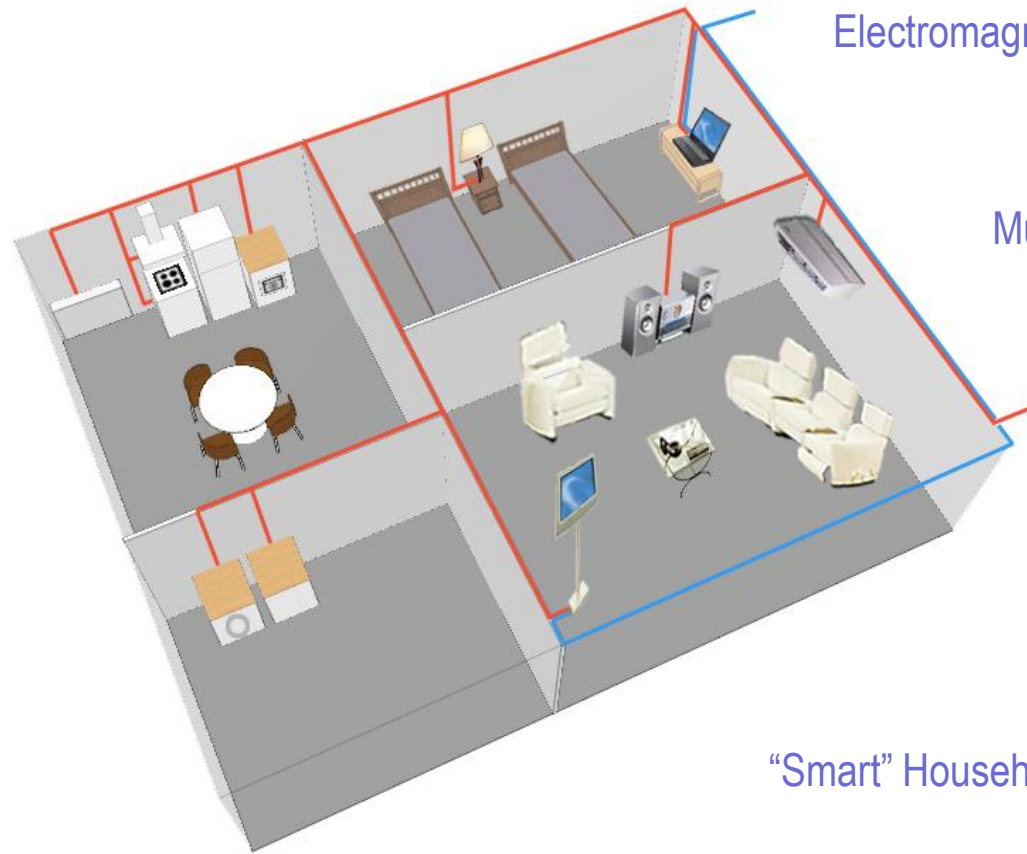
Fuses

Winding wires

Electric cables

Lamps and related equipment

Electrical installations and protection against electric shock



Electromagnetic compatibility

Multimedia devices

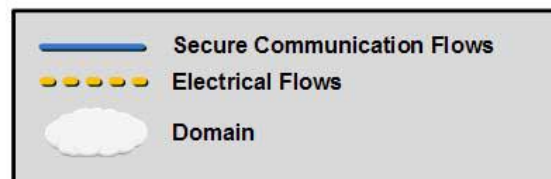
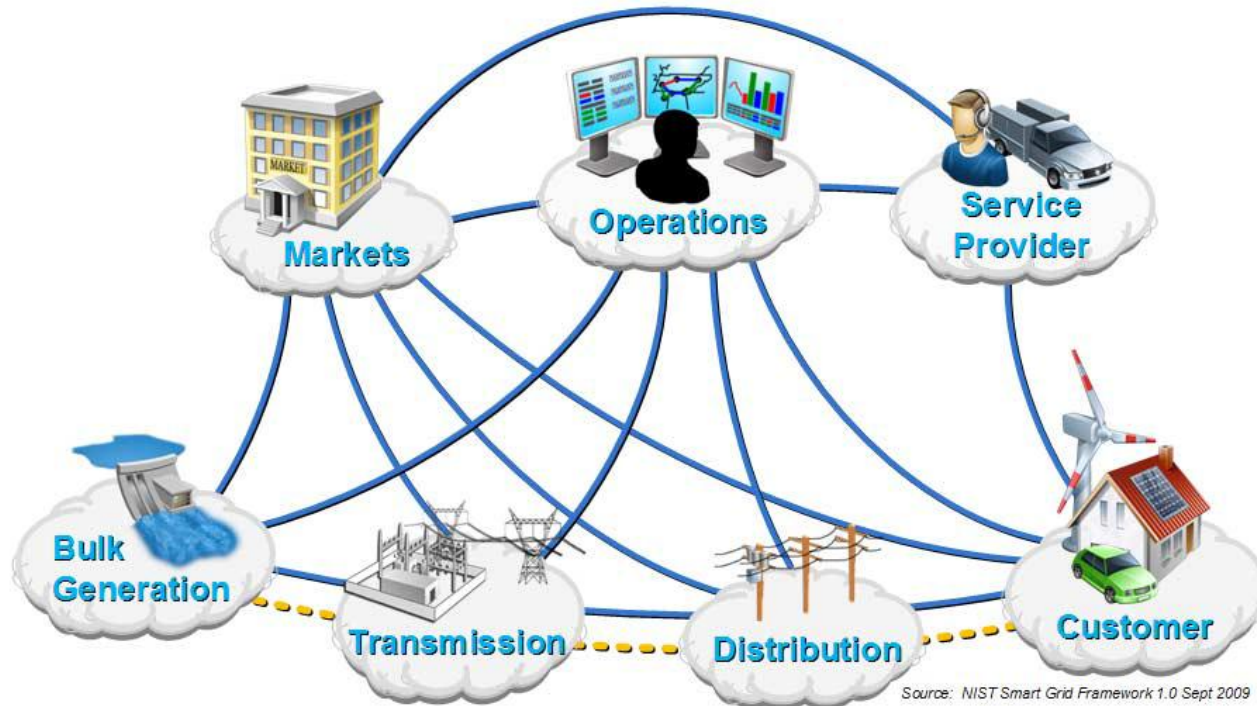
Fibre optics

Cables, wires & waveguides

“Smart” Household appliances

Safety of information technology equipment

The *Smart Grid* = “the internet of things”



Smart Grid as “the internet of things”
... where potentially everything is
connected (**via ICT**) to, and
communicates with, every other thing
IF we have

- ***Compatibility,***
- ***Interconnectivity and integration,***
- ***Interoperability and***
- ***Global consistency of technology implementation***



Applications of IEC CA Systems in ICT

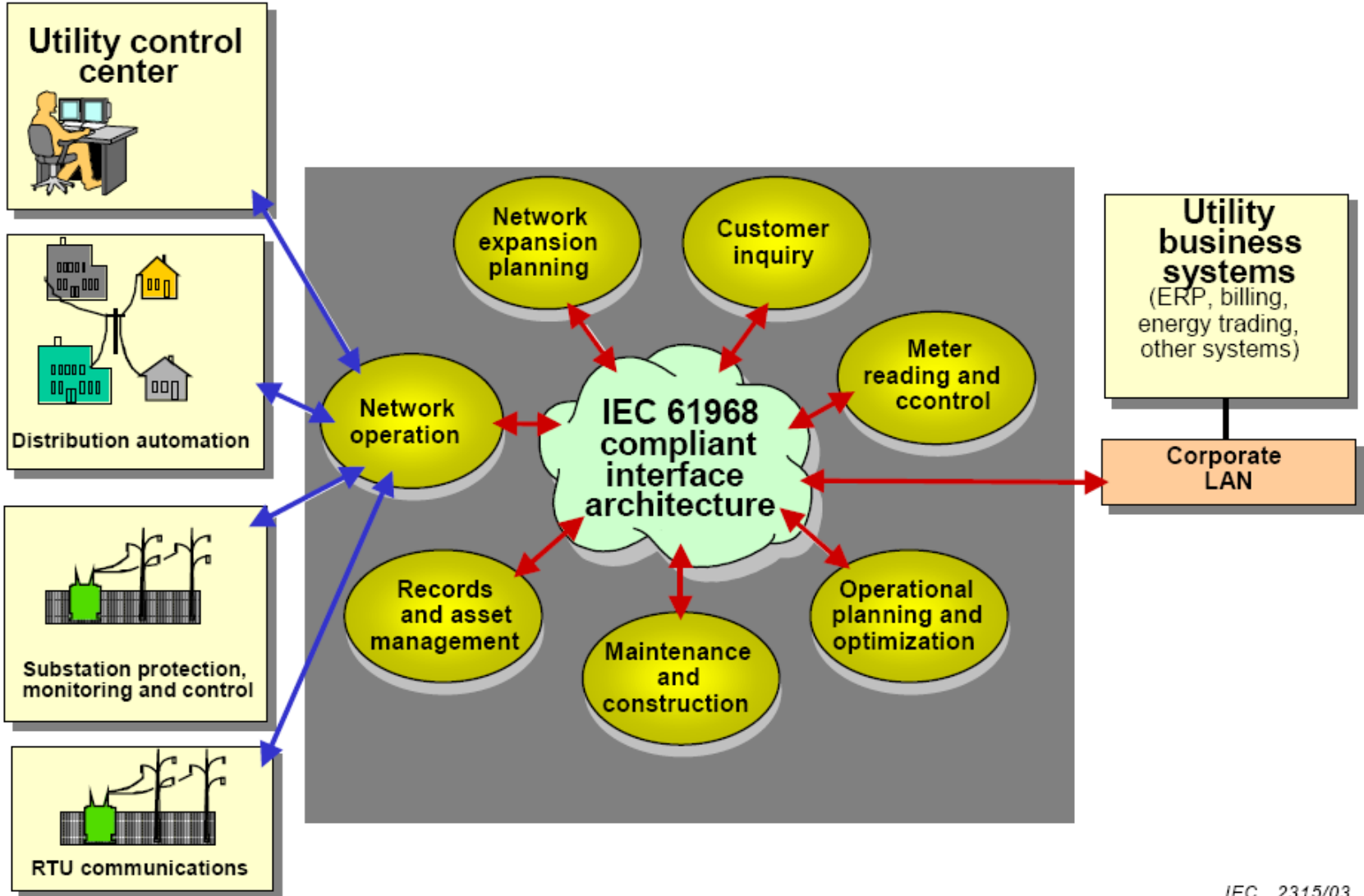
This is the challenge being addressed by the IEC Smart Grid and Smart Cities System Evaluation Groups in advancing the “IEC Smart Grid Standardization Roadmap” as one part of the broader “IEC Systems Approach in IEC Standardisation” intended to encourage dialogue between different domains



IEC Smart Grid Standardization Roadmap

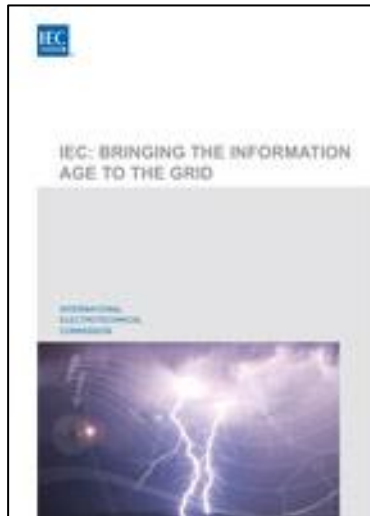
Prepared by SMB Smart Grid Strategic Group (SG3)
June 2010; Edition 1.0

Standardisation Reference Architecture example





IEC and ICT ... outputs to date



ITU-T input
via IEC's
ACTEL





IEC's Conformity Assessment Systems

CAB - Conformity Assessment Board

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

Active & Passive components

Processes

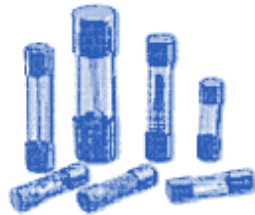
HSPM

Avionics



IECEE for Electrical Equipment

- Worldwide System for Conformity Testing and Certification of Electrotechnical Equipment and Components.
- aka the 'CB Scheme'



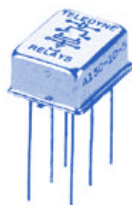
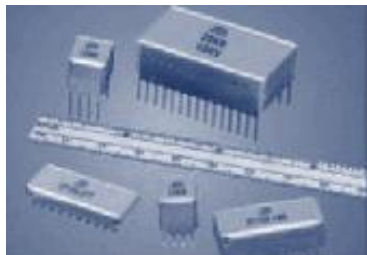
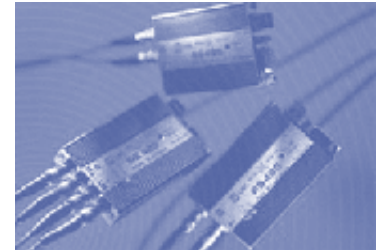
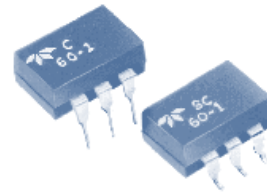
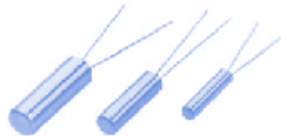
- **Worldwide system for certification to standards relating to equipment for use in explosive atmospheres.**






IECQ

- **Worldwide approval and certification program for electronic components using a Technically based Quality Management Systems Approach to build on the ISO 9001 QMS base line system.**
- **a Supply Chain Management Tool for Equipment Manufacturers**






IEC Conformity Assessment - *more information ..*



International
Electrotechnical
Commission

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for all electrical, electronic and related technologies


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April edition



IEC e-tech
News & views from the IEC

TRANSPORTATION
Electric vehicles
2011 Geneva Motor Show
Lord Kelvin Award Nominations open

- **Electrification of transport and EVs as alternative vehicles**
- **EVs dependent on the modernization of the Smart Grid**




Making electrotechnology work for you


The IEC publishes the globally relevant technical guidelines that allow millions of devices and systems that use, produce or store electricity to work safely together, anywhere in the world.

Find out more about IEC standard development and conformity assessment and purchase International Standards.

[Learn more about the IEC](#)

 **Resources for**

National Committees	Standards developers
Young Professionals	Affiliate Countries
Webstore FAQs	Media

 **Tools (members & experts only)**

- Dashboard finder**
- Expert Management System**
- Collaboration Tools**
- Meetings & events**
- Meeting Registration System**



Benefits of '*importing*' the IEC CA Systems

Benefits for the developing economies =

- No need to develop a separate system of certification or approval
- No need to establish local test capabilities.
- Regulations can be simplified by requiring the conformity with an existing IEC CA System.
- A wider range of products and technologies made available to local consumers from the global market.
- Increased opportunity to participate in global markets.



Guidance to developing economies

USING CA SYSTEMS FOR REGULATION – A PROCESS

1. Determine which products or sectors are the **priority** for conformity to Standards – *where is the greatest need for improved safety ?*
2. Locally recognise or '**adopt**' the relevant International Standards for those products or sectors
3. **Train** local stakeholders in the contents and policy and technical implications of the adopted Standards
4. **Set policies** on which Standards will be used to set compulsory requirements as the basis for conformity assessment systems
5. **Consult** with stakeholders on the design and details of regulations to be introduced to support the policy
6. **Issue** the regulations and publicize them to stakeholders (with details of procedures, timetables, penalties etc.)
7. **Implement** and **enforce** the regulations by using conformity assessment systems

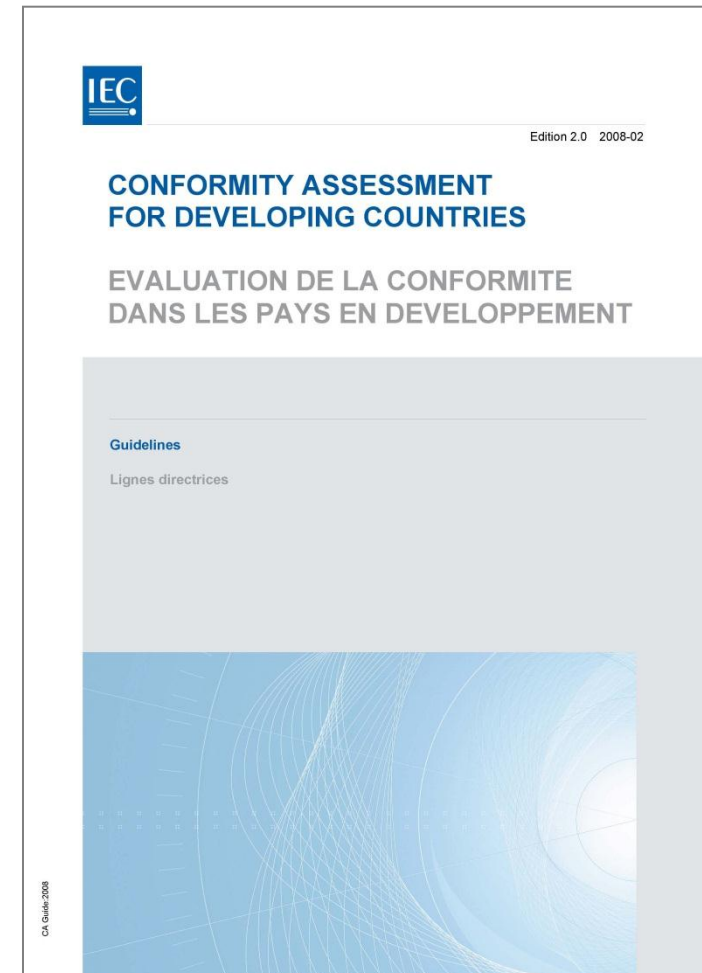


Guidance to developing economies

USING CA SYSTEMS FOR DEVELOPMENT – A PROCESS

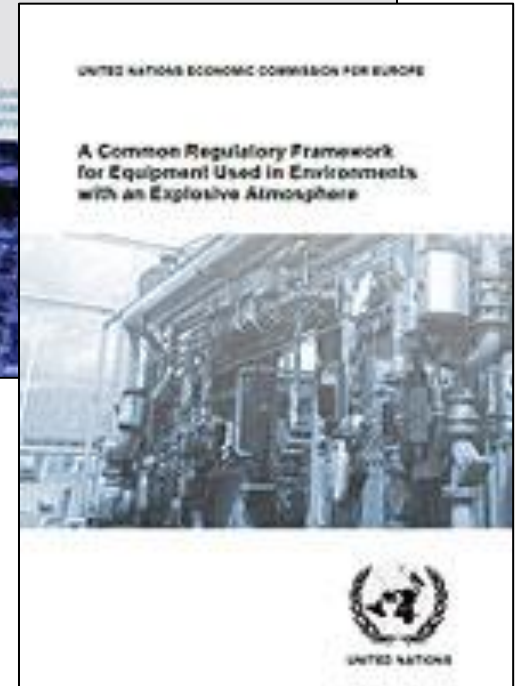
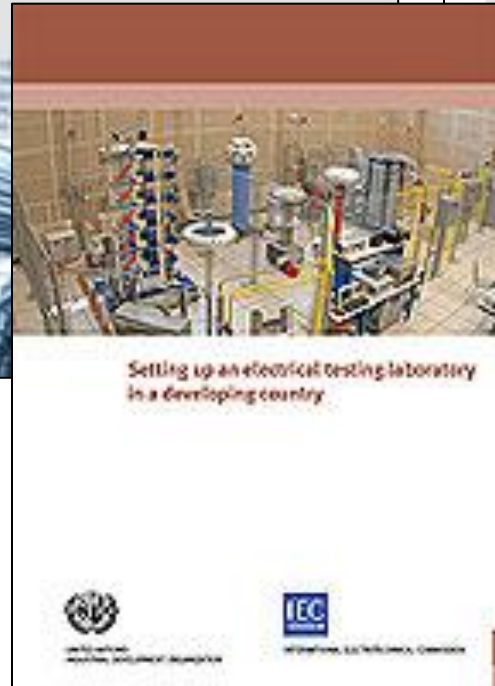
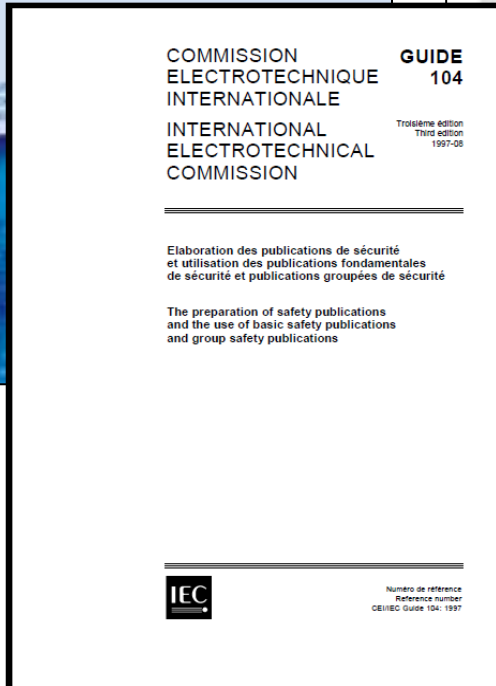
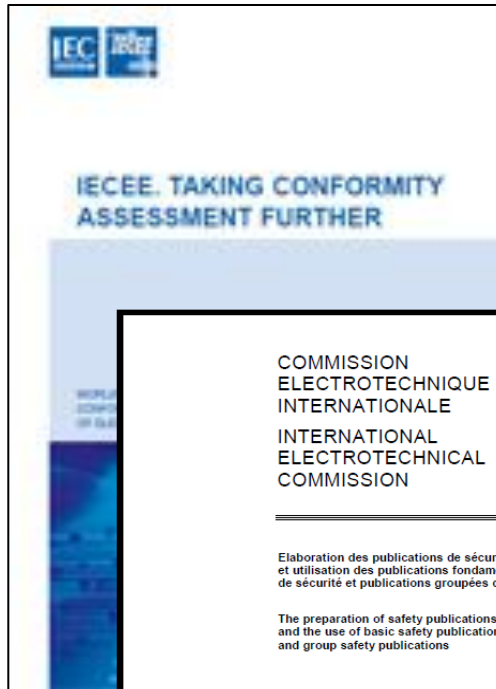
1. Determine which products or sectors are the **priority** for development - *where is the greatest potential for positive outcomes for stakeholders ?*
2. Locally recognise or '**adopt**' the relevant International Standards for those products or sectors
3. **Inform** local stakeholders in the contents and policy and technical implications of the adopted Standards AND the intent to introduce CA
4. **Build a community** of stakeholders and discuss the options for types of conformity assessment and voluntary participation and compliance with adopted Standards as a 'first step'
5. Determine and agree on the '**costs and benefits balance**'
6. **Agree on goals and plans** including details of rules and procedures, participants (eg. Industry, governments, test labs, certifying bodies, etc.), measures of success, next steps and review cycles
7. **Implement** and maintain using conformity assessment systems

- **Workshop during IEC General Meetings each year**
- **Regional conferences**
- **Collaboration with UNIDO**
 - **Seminaires**
 - **Expert for electrical laboratories in Bhutan**
 - **IEC Affiliate Country Programme Brochure**
- **Guide**  http://www.iec.ch/affiliates/pdf/ca_guide_ed2_en.pdf





Guidance to developing economies – *more info ...*





Questions?

Thank you for your attention.

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