	C/1936/INF
For IEC use only	
	2015-10-30

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COUNCIL

SUBJECT

Presentations from the Council Discussion Session in Minsk, Belarus, 16 October 2015

BACKGROUND

Five breakouts were held during the Discussion Session of IEC Council in Minsk, Belarus, on 16 October 2015 during the 79th IEC General Meeting. The breakout topics were:

- Cyber security in electrotechnological infrastructures: our IEC home turf
- Education in standards and Conformity Assessment (CA)
- Encouraging the use of IEC International Standards and CA Systems
- Introducing the IEC Systems approach
- Potential new revenue sources

Presentations given during that session are attached.

ACTION

Document **C/1936/INF** is for information.

Attachments: presentations (5)

Cyber Security in Electrotechnological Infrastructures: Our IEC home turf!

Council Discussion Session

Minsk, 2015-10-16

Societies
dependent **on Critical Infrastructures**
dependent **on functioning E-technology**

2

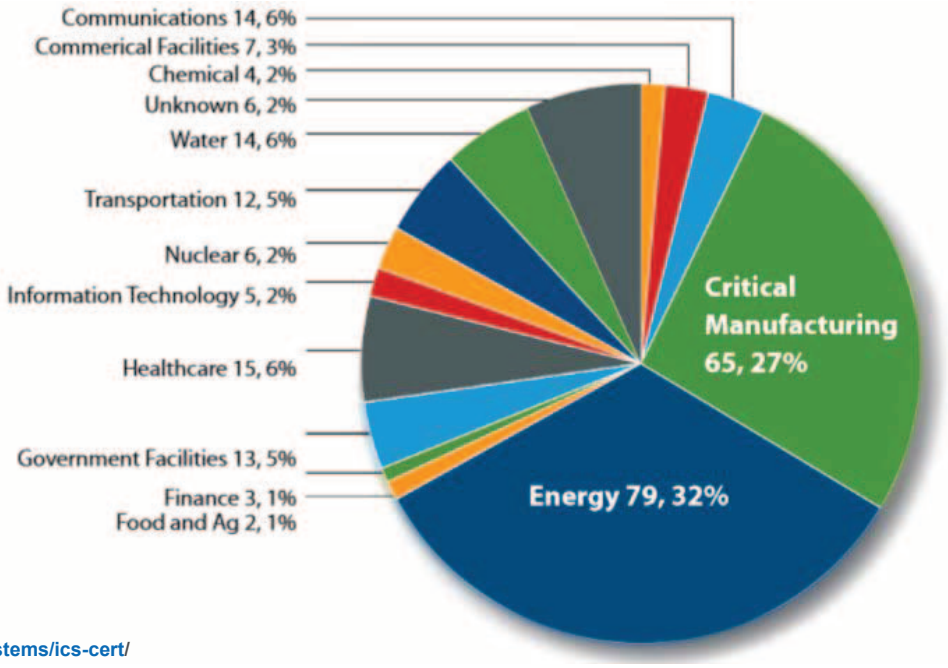
Some US statistics…

Source:

NCCIS
National Cybersecurity And Communications Integration Center

ICS-CERT Monitor
http://www.us-cert.gov/control_systems/ics-cert/

FY 2014 incidents reported by sector (245 total)



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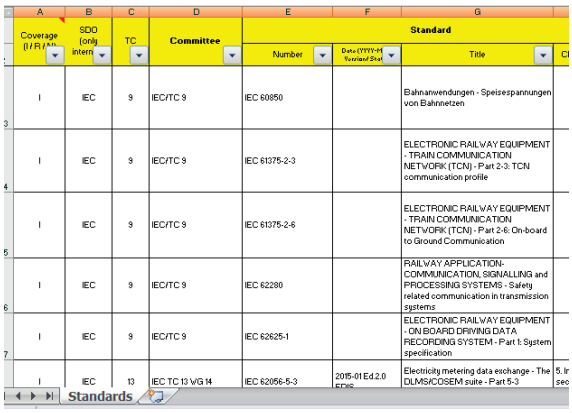
IEC Repository: not too bad



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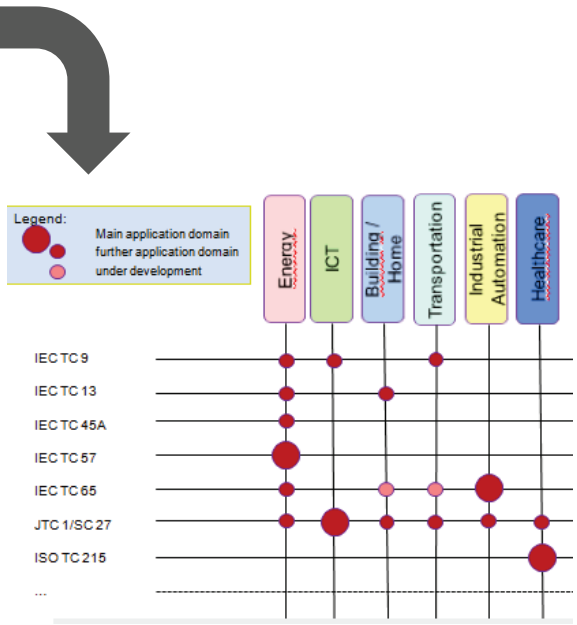

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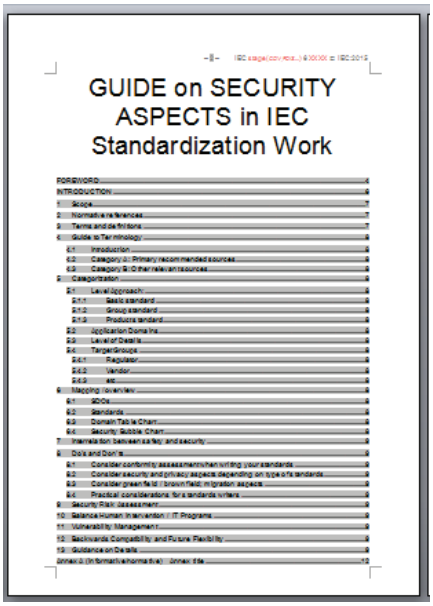
IEC ACSEC
is going to help out…

1. **Terminology**
   Glossaries, Semantics, …
2. **Basic Priciples**
   Risk Szenarios, Risk Assessment.
   Interrelation Safety and Security,
   Standards Level Approach, …
3. **Repository**
   Sources, Mapping, Finder
4. **Guidance**
   Deafting Priciples, Do and Don't, …


GUIDE on SECURITY ASPECTS in IEC Standardization Work

5

But - are we doing *good enough* ?

- **Why hundreds of different national, consortial, domain-specific, standards?**
  NERC 1300, CIP-002-3, Special Publication 800-82, IEC 62443, IASME, …
- **Why dozends of Conformity Assessment and Certification schemes in the market?**
- **Why so many National Regulations not refer to international standards?**
  US NCCIP, EU NIS, DE ITSG, CN CCISL, …

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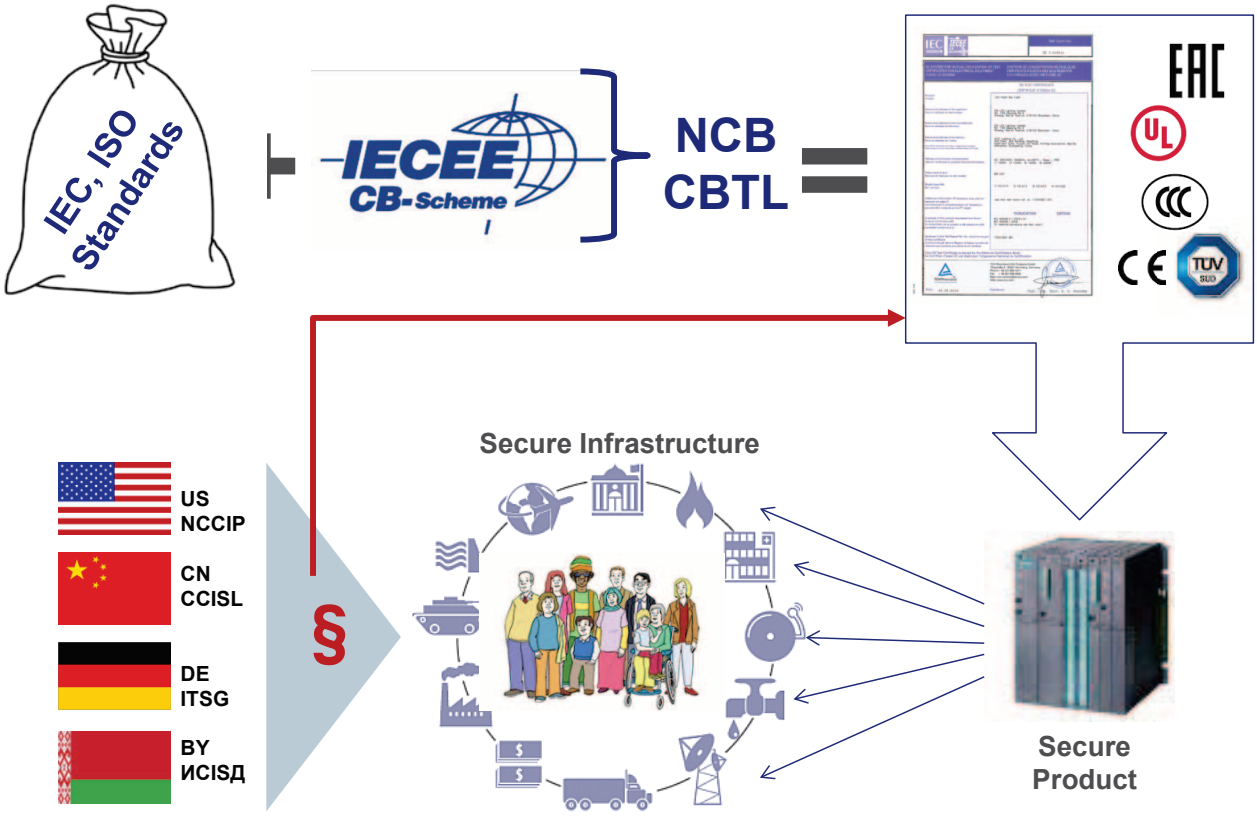
Vision



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Time for Teamwork!

- **Team RED**
  How to balance initiatives in National vs. International standards for security?
- **Team YELLOW**
  What is the market interest on Conformity Assessment for security aspects?
- **Team GREEN**
  What are the opportunities / barriers for regulators to refer to international security standards?

8

Education in Standards and Conformity Assessment

David Hanlon

Jack Sheldon

Council Discussion
2015-10-16
Minsk, BY

INTERNATIONAL ELECTROTECHNICAL COMMISSION

Education in Standards and Conformity Assessment

- Should the concepts of standardization / CA be taught formally?
  - At what level? School, University?
  - Business school? Engineering?
- Which concepts?
- Do you have any programme to work with academia on standards / CA?
- Can the IEC help you? How?
- Do you know about the IEC e-learning modules?
- What should the NCs be doing?

INTERNATIONAL ELECTROTECHNICAL COMMISSION

Encouraging the use of IEC International Standards and Conformity Assessment Systems

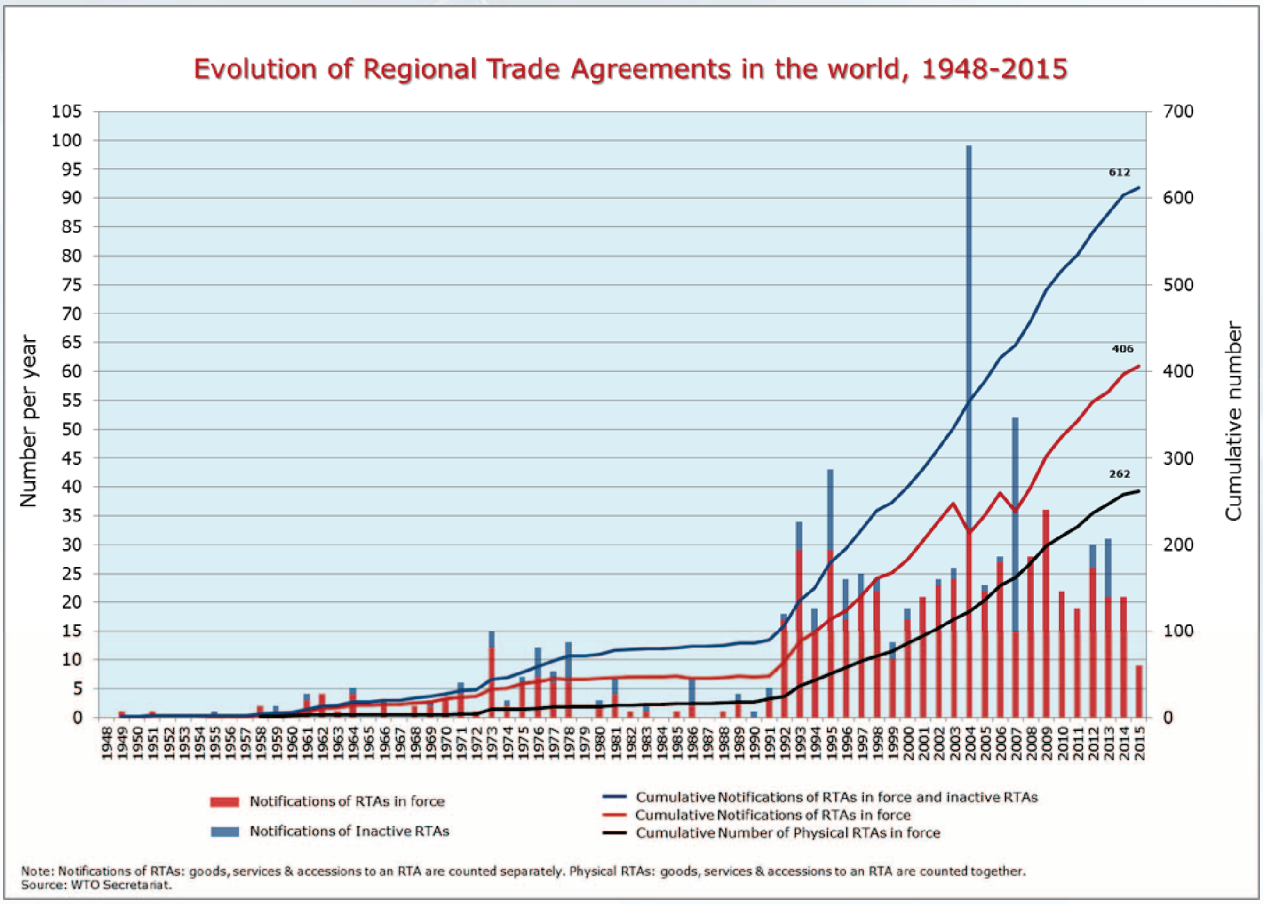
Frans Vreeswijk
General Secretary
& CEO

Discussion Session
16-10-2015
Minsk

International Electrotechnical Commission

Introduction

- WTO Technical Barriers to Trade encourages the use of international standards and the adoption of international systems for conformity assessment
- Large number regional trade groupings becoming active
- Regional Trade Agreements (RTAs)



Introduction

Now we must encourage

- the use of IEC International Standards and Conformity Assessment Systems,
- not only in the regulatory
- but also in the voluntary space

This session

- Case studies: Europe, Africa and Southeast Asia
  - on how some regions have policies or practice in place that call for the regional adoption or use of IEC international standards and conformity assessment systems
- Discuss the questions circulated
- Objective: best practices to be promoted and shared
- Active participation and inputs.

Case Studie - Europe

Case study in Europe on use of IEC standards and conformity assessment systems - success factors and challenges

Dr. Bernhard Thies
Chairman Board of Directors
DKE

Dresden Agreement - The Success Story of IEC and Europe

Situation in Europe

- Nearly everything is regulated by EU Directives or EU Regulations
  - EU Product Safety Directive, Low Voltage Dirctive, EMC Directive, etc
- (Harmonized) European Standards are the most efficient tool to comply with European Law
  - Facilitate Conformity Assessment in the legal area
  - Assist Technical Documentation of Manufacturers
  - Give presumption of conformity
- 80 % of European standards are elaborated at IEC level with the advantages:
  - Hardly duplication of technical work
  - Fewer national differences (consensous already obtained at IEC level)

IEC Conformity Assessment Systems and EU

Why can IEC Conformity Assessment results also be used for European conformity assessment procedures?

Common Basis and understanding

- **Basis for IEC Conformity Assessment Systems are IEC standards and due to Dresden Agreement in most cases also European standards**
- **ISO/IEC 17000 series (fundamental principles for conformity assessment) is implemented in Europe**
- **European Certification Bodies notified under EU law are also Certification Bodies of the IEC Conformity Assessment Systems**
- **European national regulators (signatures of WTO/TBT) are involved at national level as stakeholders in the mirror committees**

Challenges

Formal European procedures shall be taken into account during elaboaration of IEC standards

- **Involvement of New Approach Consultants (EU rely on their assessments to allocate presumption of conformity to standards)**
- **Elaboration of a cross reference table indicating which technical requirements are detailed by the standard(s) (EU request this table as part of their quality control)**

Both activities are necessary to avoid unnecessary European deviations

Thank you!

Dr. Bernhard Thies
Chairman Board of Directors
DKE

Case Studie - Africa

WHAT is AFRICA?

54 sovereign states, including 6 islands stretching from 37° N to 35°S and over 6 times zones

13 mainland states +/- 5° of the equator

Climates vary from Mediterranean to desert to tropical

Temperature extremes from -20°C to +50°C

Population >1 Billion >600million without access to electricity

8 only are full or associate members of IEC

40 are IEC Affiliate Countries

IEC

Case study in Africa on use of IEC standards and conformity assessment systems- success factors and challenges

Evah Oduor

AFSEC

IEC 79th GM MINSK 2015

Objectives of AFSEC include

- To harmonize the existing standards, by adopting international standards, or in case of need, adapting them to the African conditions;
- to ensure the pre-eminence and the maximum use of harmonized standards and conformity assessment systems on the African continent;

Fundamental challenges

- Lack of skilled people to apply the standards
- The majority of African countries are IEC Affiliates, with limited access
- Lack of awareness of the availability of conformity assessment systems, AND the lack of capacity to enforce their application
- Language - Not all African countries can accept the text of an IEC International Standard for national adoption in English

Progress thus far

- 147 IEC International Standards (including parts of a number of series) recommended for common adoption by AFSEC during 2013/2014.
- Survey conducted mid 2015
  - 30% overall adoption of text, or by reference
  - 63% of recommended standards have been adopted by 3 or more countries (text or by reference)
  - 100% of recommended standards under consideration for adoption by 3 or more countries

Case Studie – South East Asia

ASEAN COMMUNITY

SE Asia on use of IEC standards and conformity assessment systems – success factor and challenges

Thitima Hoonsuwan
TISI, Thailand

ASEAN Community

POLITICAL - SECURITY	ECONOMIC	SOCIO-CULTURAL
	• Single Market and production base • Competitive • Equitable Economic development •Integration into global economy	

ASEAN Consultative Committee on Standards and Quality (ACCSQ)

Standards and conformance activities in ASEAN

- Harmonization of standards and technical requirements
- Mutual Recognition Arrangements
- Harmonization of Regulatory Regimes

Electrical and Electronics Sector

•Harmonize standard
121 standards using IEC standards

• Testing Laboratory
- ISO/IEC 17025
- IECEE CB Scheme
- IECEE CB FCS

•Certification Body
- ISO/IEC Guide 65
- IECEE CB Scheme
- IECEE CB FCS

Challenges

- Improve process for standards development and conformity assessment
- Improve technical infrastructure
- Raise awareness on standardization activities

Thank you

visit our website at www.tisi.go.th

A. Use of IEC International Standards – success and challenges

Use of IEC International Standards at national level

1. Is there a policy to refer to IEC International Standards as the first choice for adoption as national standards? If not, what are the reasons for not having IEC International Standards as the first choice?

2. Is there a policy for the regulators in your country to refer directly to IEC International Standards, in the absence of national standards? If they do not refer to IEC International Standards or its adoption as national standards, what are the reasons?

3. Are there challenges affecting your country's identical adoption of IEC International Standards. If yes, what are usually the key challenges? How do you think these challenges can be addressed?

4. Is your country successful in the use of IEC International Standards directly or through its adoption as national standards? If yes, what are the factors contributing to its success?

A. Use of IEC International Standards – success and challenges

Use of IEC International Standards at regional level

1. Is your country part of a regional trade bloc that has an initiative focusing on the alignment of national standards to international standards? If yes, are IEC International Standards the first choice in the electrical, electronic and related sectors? If no, what are the key challenges? How do you think these challenges can be addressed?

2. In the event there are modified adoptions by different countries in the region, must the deviations be harmonized?

3. If IEC International Standards are accepted directly or are adopted identically, what do you think are the factors contributing to its success?

B. Recognition of IEC CA systems – success and challenges

Recognition at national level

1. Is your country a member of any of the established IEC Conformity Assessment Systems, IECEE, IECEx, IECQ, IECRE? What mechanisms, programs or arrangements do you have, at national level, to both inform all relevant stakeholders of latest developments and benefits in use of IEC Conformity Assessment deliverables and opportunity to provide feedback or input from your stakeholders back to IEC Conformity Assessment Systems? Do you wish to know more?

2. Is there a policy to accept IEC Conformity Assessment as part of the Compliance Regime at national level (by accepting Certificates of Conformity or Test and Assessment Results) for regulations? If not, what are the reasons for not having such a policy? If yes, how was it done?

3. Are there challenges affecting your country's use of IEC Conformity Assessment deliverables? If yes, what are usually the key challenges? How do you think these challenges can be addressed?

4. Is there wide use and acceptance of IEC Conformity Assessment deliverables? If yes, what was done to make it widely accepted?

B. Recognition of IEC CA systems – success and challenges

Recognition at regional level

1. How is your country assisting industry to make the most use of IEC Conformity Assessment Systems, Schemes and programs across the Region? How can this be improved?

2. Is your country part of a regional group that has an initiative focusing on the mutual recognition of conformity assessment results?

   If yes, is there a policy at the region to recognise and use IEC Conformity Assessment deliverables when developing new regional requirements or revising existing requirements?

   If they are not recognised, what are the key challenges? How do you think these challenges can be addressed?

   If they are recognized, what was done to facilitate it?

International Electrotechnical Commission

IEC Systems Work

International Electrotechnical Commission

Why a Systems Approach?

Products become multifunctional

Vintage phone image: Kittisak Taramas © 123RF.com

Why a Systems Approach?
Products become multifunctional

1985

Phone calls

2015

Music, photos, video, GPS, Internet, 3G, 4G, LTE, WIFI, Bluetooth, NFC, Touch screen, USB, HDMI…

An ever increasing number of technologies and standards are involved

Vintage phone image: Kittisak Taramas © 123RF.com

What is a System?

- a group of interacting, interrelated, or interdependent elements
- forming a purposeful whole
- of a complexity that requires specific structures and work methods
- in order to support applications and services relevant to IEC stakeholders

Why a Systems Approach?
➡ Complexity of Technologies

- Multiplicity and convergence of technologies
- Large-scale infrastructures
- Need for interoperability
- Many new and emerging markets

An ever increasing number of technologies and standards are involved

Why a Systems Approach?
➡ A new level of collaboration

- Traditional TC to TC bilateral liaisons have reached their limits in such cases
- Need for a larger collaboration platform
- Need to outreach other standardization organizations

The Systems Approach:
➡ A collaboration platform

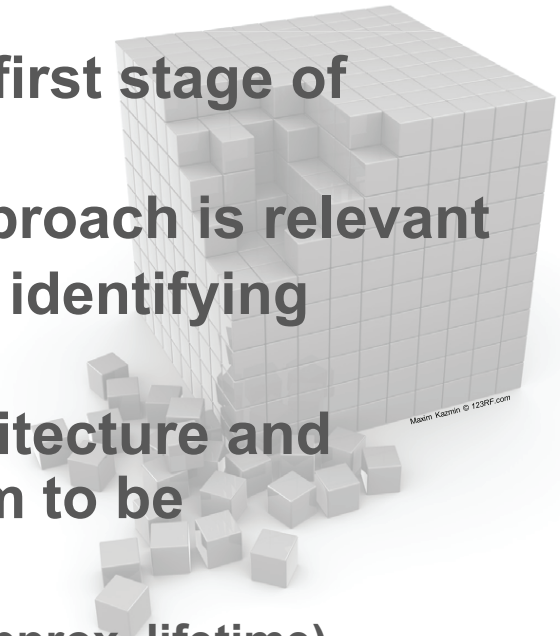
- Top-down approach starting at the system rather than at the product level
- address complexity
- ensure interoperability

The Systems Approach:
➡ A collaboration platform

- Engaging TCs, not directing
- Complementary to existing TCs, not competing

Systems Evaluation Group (SEG)

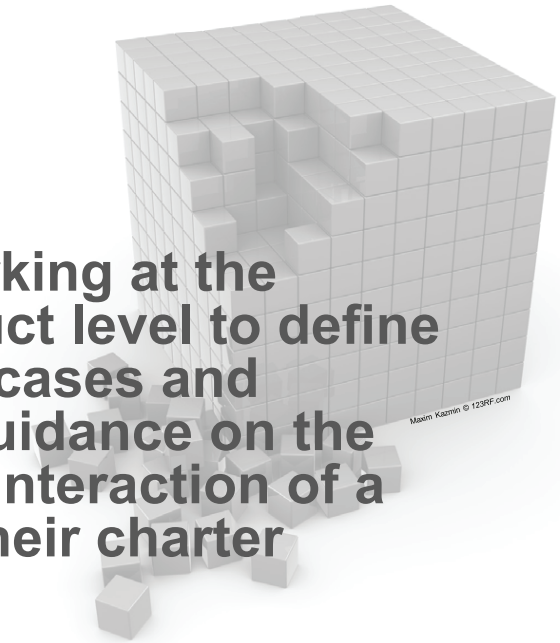
- Open group used in the first stage of systems development
- Evaluates if Systems approach is relevant
- Engages the community identifying relevant stakeholders
- Defines the general architecture and boundaries of the system to be addressed
- Reports to SMB (2 years approx. lifetime)



Systems Committee (SyC)

Definition

A specialized Committee working at the systems instead of the product level to define reference architectures, use cases and appropriate standards and guidance on the interfaces, functionality and interaction of a system within the scope of their charter

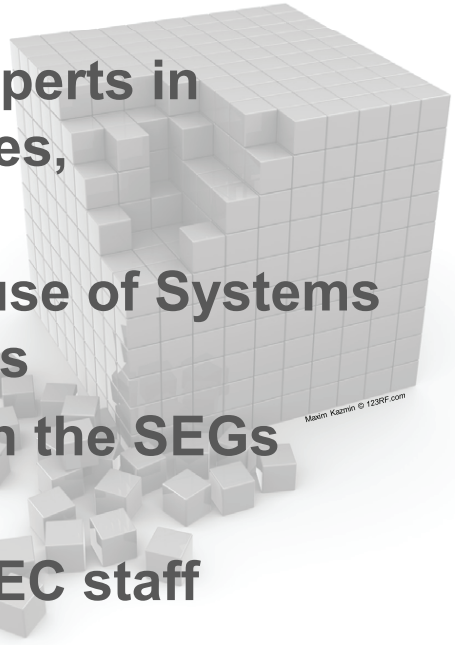


Systems Committee (SyC)

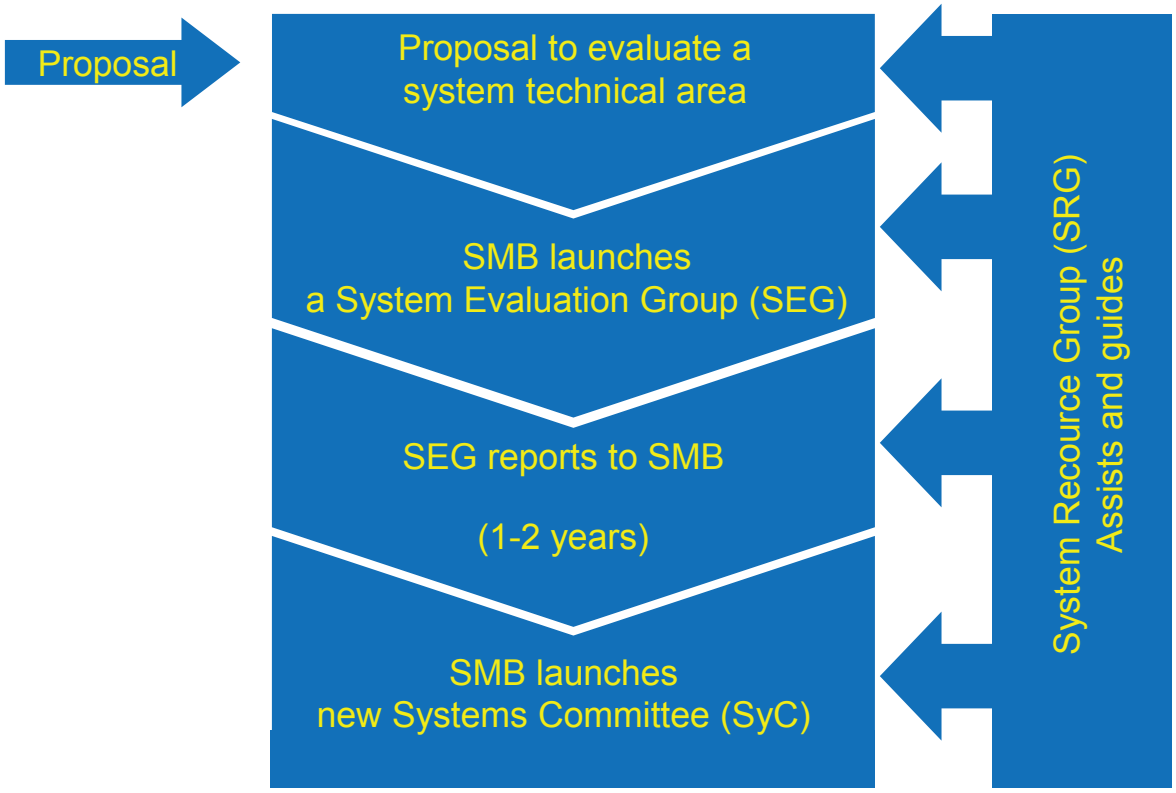
- An SyC can publish international standards, as well as other IEC deliverables
- It functions generally in the same manner as a conventional TC (except extended liaisons to reach out to other SDOs)
- It operates at the “same level as a TC”
- The Secretariat is with the IEC Central Office (increased neutrality towards TCs and NCs)

Systems Resource Group (SRG)

- Unique group populated by experts in systems architecture, use cases, terminology and semantics
- Guides the development and use of Systems tools and software applications
- Shares the best practice within the SEGs and SyCs
- Populated by volunteers and IEC staff



Establishing an SyC



SyCs established

- **SyC Smart Energy**
  - Standardization in the field of Smart Energy
  - Coordination and guidance in the areas of Smart Grid
  - Including interaction in the areas of Heat and Gas
- **SyC-AAL Active Assisted Living**
  - Enable accessibility of AAL Systems and user interfaces
  - Enable cross-vendor interoperability of AAL systems, products and components

SEGs established

SEG 1: Systems Evaluation Group - Smart Cities

SEG 4: Systems Evaluation Group - Low Voltage Direct Current Applications, Distribution and Safety for use in Developed and Developing Economies

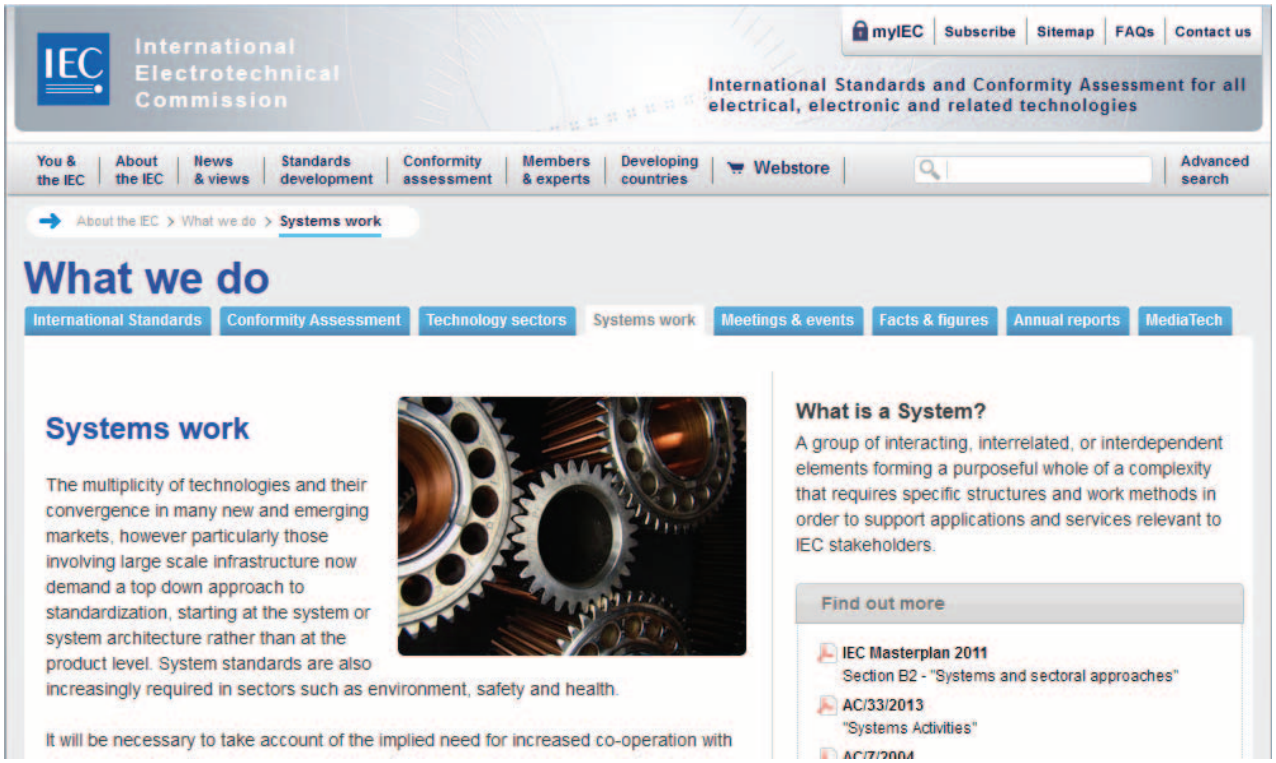
SEG 5: Systems Evaluation Group - Electrotechnology for mobility

Moved into SyC Smart Energy

SEG 6: Systems Evaluation Group - Non-traditional Distribution Networks / Microgrids

The Secretariat of the SEGs is with the IEC Central Office

More on the IEC web site



More on the IEC web site

SMB Standardization Management Board

Scope | Structure | Documents | Guides/Projects | Decisions | Meetings | Horizontal Standards

Members | Advisory Committees | Systems Work | Strategic Groups | Others

Mr Jack Sheldon (xc-jrs) Log out En Fr

Systems Work

Committee	Description
Systems Evaluation Group	
SEG 1	Systems Evaluation Group - Smart Cities
SEG 4	Systems Evaluation Group - Low Voltage Direct Current Applications, Distribution and Safety for use in Developed and Developing Economies
SEG 5	Systems Evaluation Group - Electrotechnology for mobility
SEG 6	Systems Evaluation Group - Non-traditional Distribution Networks / Microgrids
Systems Committees	
SyC AAL	Active Assisted Living
SyC Smart Energy	Smart Energy
Systems Resource Group	
To be announced	

Task

Systems Approach
The multiplicity of technologies and their convergence in many new and emerging markets, however particularly those involving large-scale infrastructure demand a top-down approach to standardization, starting at the system or system-architecture rather than at the product level.

Therefore, the Systems Work will define and strengthen the systems approach throughout the technical community to ensure that highly complex market sectors can be properly addressed and supported.

It promotes an increased co-operation with many other standards-developing organizations and relevant non-standards bodies needed on an international level.

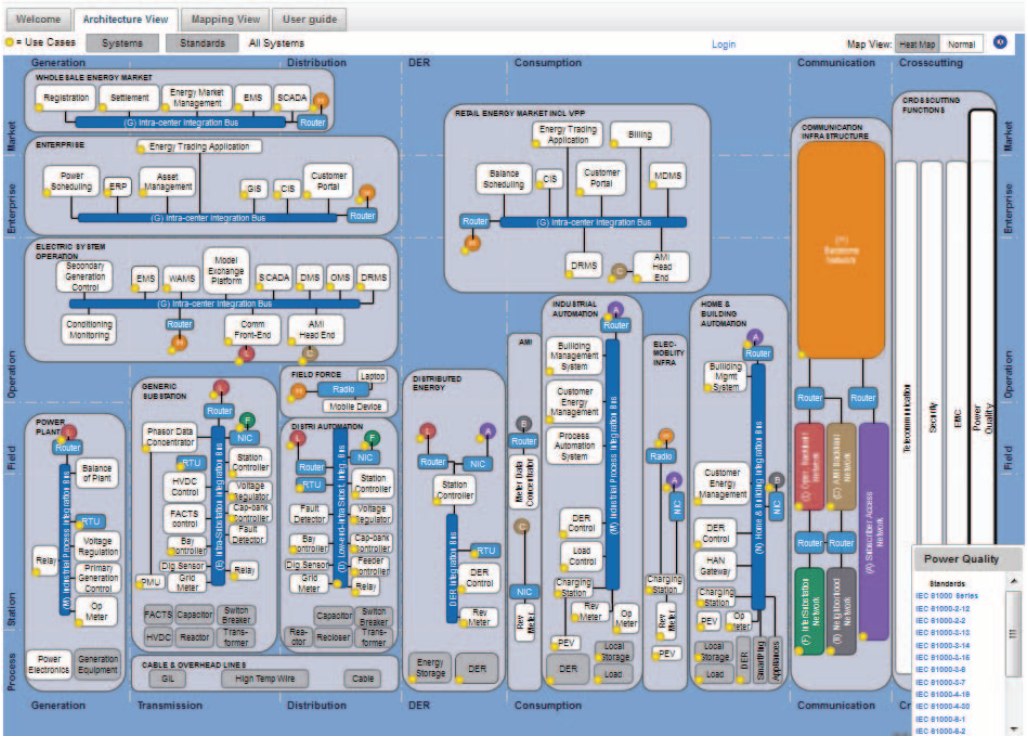
System standards, having implications for the IECs conformity assessment systems and processes, are also increasingly required in sectors such as environment, safety and health.

The Systems Evaluation Groups (SEG) identify new technical areas and anticipate emerging markets/technologies that require a systems approach as well as define and implement enhancements to the TC/SC structure for improved functionality, notably to improve coordination on issues that cross traditional boundaries.

Systems Committees (SyC) aim to extend the use of strategic or other horizontal groups to bridge areas covered by more than one or two TC/SCs.

TCs with a Systems Function remain unchanged and continue working on Systems.

More on the IEC web site



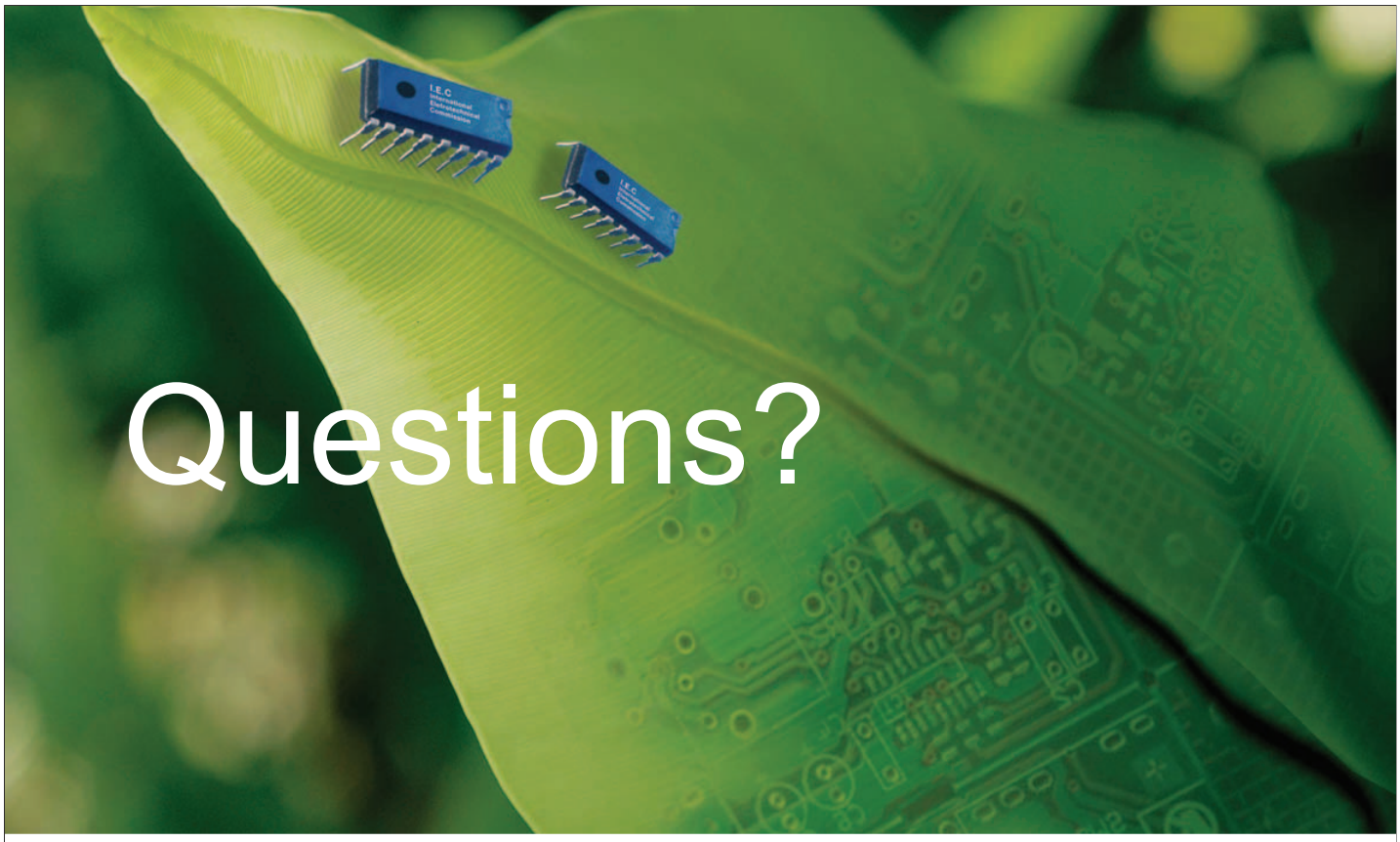
SMART GRID STANDARDS MAP

Systems Resource Group

- IEC Systems Approach and directives for the SRG
- Situation assessment for the existing SyCs and SEGs. What has worked for them? What is not working for them?
- Develop a shared vision of a successful SRG
- Review of the existing tools, applied approaches, and resources available
- What is our strategy to be successful?
- Structure of the SRG?
- How do we leverage our resources and engage the existing SyCs/SEGs?
- Develop an action plan (6 month, 1 year, 2 years)

Systems Resource Group

- Manyphay Viengkham (Convenor) US
- Pierre Sebellin (Secretary) Central Office
- Rolf Appel DE
- Hirokazu Tanaka JP
- Cyril Effantin FR
- Rafael Santodomingo ES
- Joanna Goodwin Central Office
- Alexander Samarin CH
- Peter Godwin Central Office



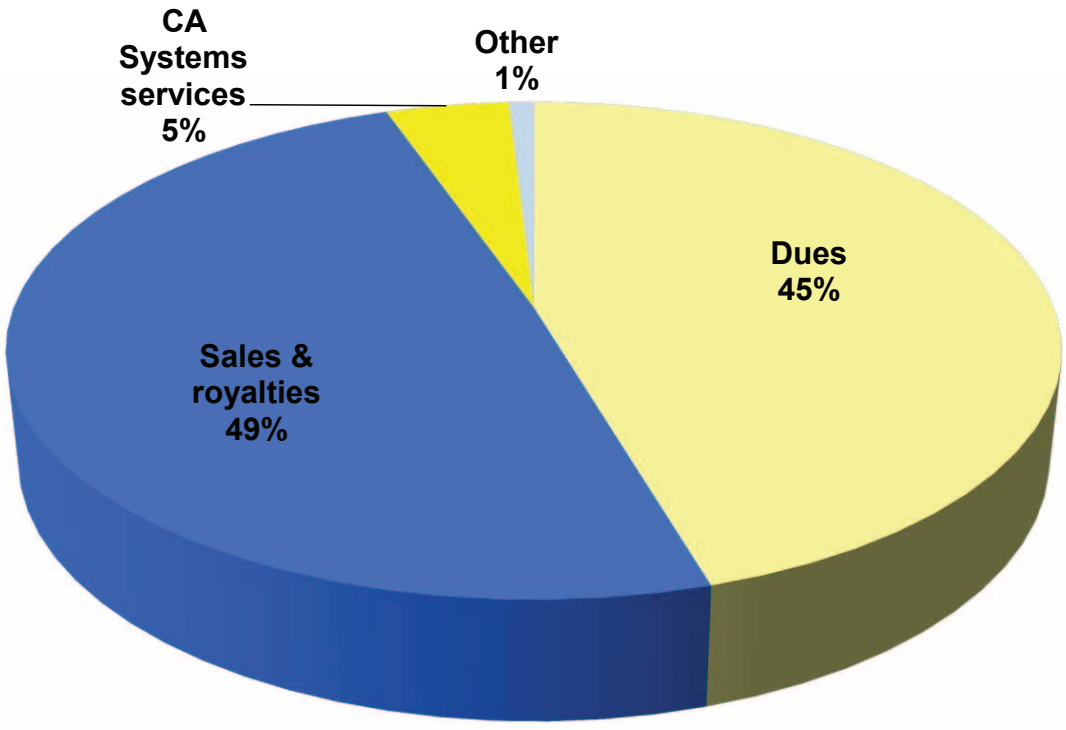
International
Electrotechnical
Commission

Ake Danemar
IEC Treasurer

Council Discussion Session, 2015-10-16 Minsk

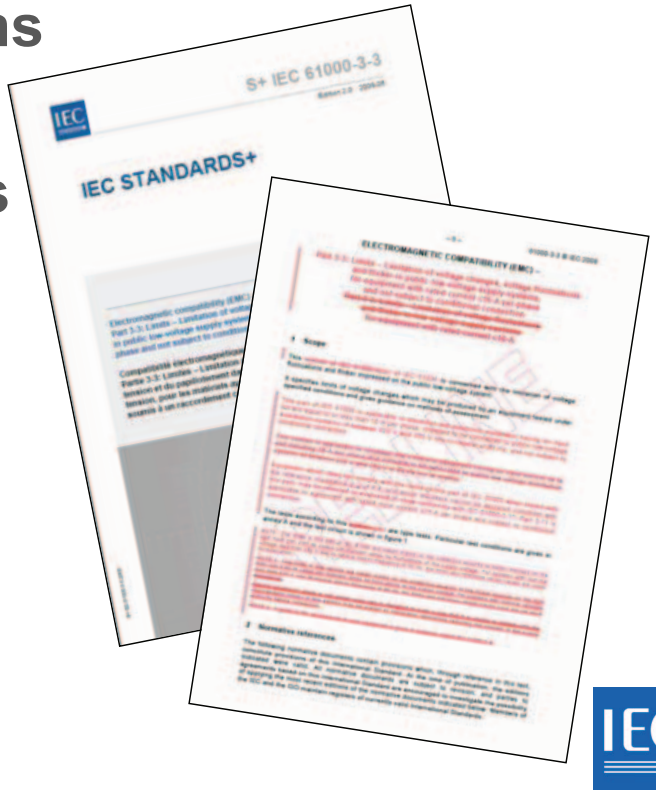
International Electrotechnical Commission

Existing revenue: 2014 split



IEC CO value-added products

- Consolidated editions
- Redline versions
- Commented redlines
- Online collections



Threats to the revenue from sales and royalties

- Reference in legislation – some requests for standards to be free of cost
- Illegal online access and distribution of standards

= Strengthen copyright and IP

Questions: 30 minutes

- How do NCs gather ideas regarding end-users needs for value-added products and services?
- How can NCs share ideas regarding end-user needs for value-added products and services?
- What additional products or services could be offered by the IEC and its NCs to end-users? Are there market needs that are not currently addressed by the IEC?
- What opportunities can be seen with regards to the IEC CA activities?
- Is there a market need and potential revenue source from collecting information about national and regional adoptions and deviations? What would it take to put this in place?

Ake Danemar
IEC Treasurer

Council Discussion Session, 2015-10-16
Minsk

International Electrotechnical Commission