



Administrative Circular

AC/37/2006

2006-12-15

TO ALL NATIONAL COMMITTEES

TO ALL TECHNICAL COMMITTEES AND SUBCOMMITTEES

Dear Sir/Madam,

System approach in IEC standardization - Implementation

Summary

This administrative circular gives the following information concerning the implementation of the System approach in IEC standardization:

- A presentation to be given by the IEC CO Technical Officers at the next TC/SC plenary meetings;
- The format for presenting information in the SPS on the System approach relevance.

It is addressed to all those TC/SCs having a product and/or system function.

For these TC/SCs, information on the System approach relevance should be introduced into Section A of their SPSs by **2007-12-31**.

This administrative circular does **not** apply to those TC/SCs preparing publications e.g. horizontal standards, basic or group safety publications dealing with a general topic such as fire hazard testing, electromagnetic compatibility, terminology, environmental conditions, classifications and methods of test, insulation co-ordinations, dependability, degrees of protection provided by enclosures, electrostatics, etc common to many TC/SCs with a product and/or system function.

Historical background

The System approach was an SMB initiative starting in 2002 and culminating in the circulation of document AC/7/2004 *System approach in IEC standardization*.

The results of the SMB TC/SC Officers' Satisfaction survey from 2005 indicated that the implementation of this approach had been hindered by the lack of proper training material and presentation to the TC/SCs.

The SMB set-up an Ad-hoc group under the convenorship of Mr. H. Zimmermann (DE). The attached presentation was developed by this SMB Ad-hoc group. It has been presented to the IEC NC Secretaries Forum held in conjunction with the IEC General Meeting in Berlin, 2006-09 and has been used to train the IEC CO Technical Officers.



Responsibilities of TC/SCs with product and/ or system function

TC/SC Officers are strongly recommended to read AC/7/2004 then along with the information given in the attached presentation:

- Identify its product and system function and its customer/ supplier relationships;
- Create/ strengthen appropriate means of dialogue and cooperation with other TC/SCs and liaison organizations,
- Report in Section A of SPS – System approach relevance – using the format as shown in slide 14 of the attached presentation;
- Review regularly.

If TC/SC Officers have difficulties in identifying their customers, then they should request their IEC CO Technical Officer to make a search of the Preview (contents, foreword, introduction, scope and normative references) data base to locate other TC/SC publications in which their publications are cited in the normative references.

For further information or guidance on the implementation of the System approach TC/SC Officers should contact their IEC CO Technical Officer.

Yours faithfully,

A. AMIT
General Secretary

Annex

IEC



100

1906-2006

The electric century

SYSTEM APPROACH IN IEC STANDARDIZATION

Name,
Country



Agenda

- ▶ **System Approach**
- ▶ **Objectives of System Approach in IEC**
- ▶ **Definition of System**
- ▶ **System Aspects in Industry**
- ▶ **System Approach in Standardization**
 - Basic guidelines (AC/7/2004)
 - Examples
- ▶ **Conclusions/ next steps**

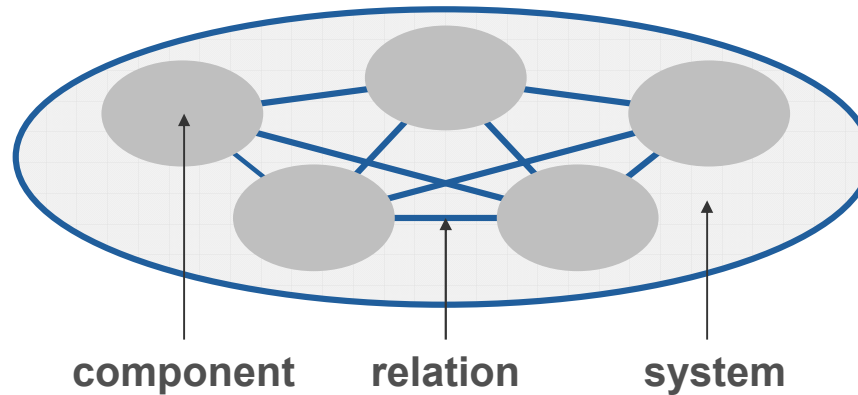
System Approach

- ▶ **System Approach is a different way of thinking**
- ▶ **System Approach is intended to encourage dialogue between different domains (avoid silo effect)**

Objectives of the System Approach in IEC

- ▶ **Encourage TC/SC to understand better the standardization environment in which they operate**
- ▶ **Promote communication, reciprocity and cooperation between TC/SCs**
- ▶ **Minimize conflicts between TC/SCs**

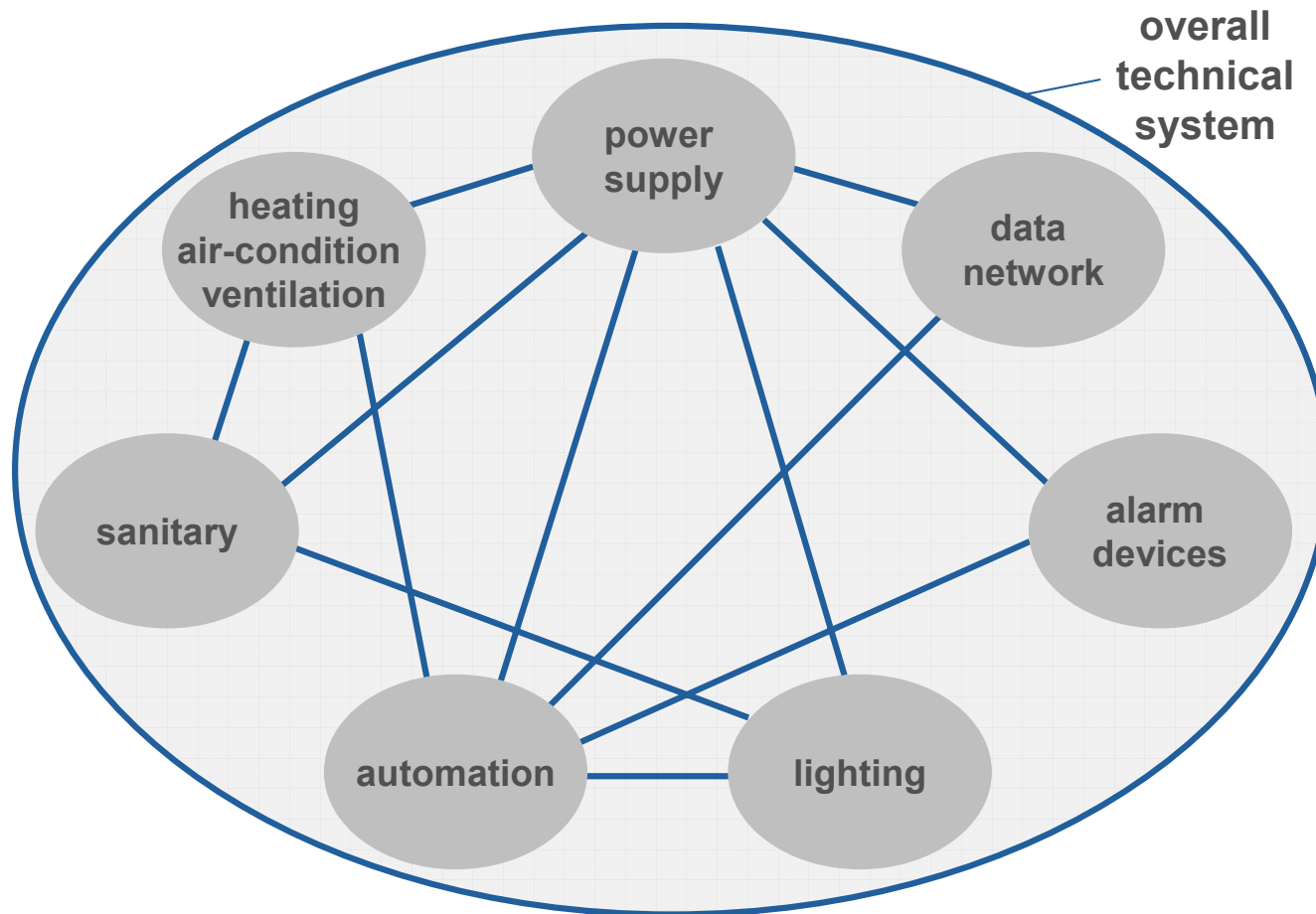
Definition of System



- ▶ A system is a set of components with relationships between the components and between their attributes (properties of components).
- ▶ Components can also be systems.

A system is more than the “sum” of its components.

Example: Buildings – Technical Equipment



System Aspect in Industry

The customer expects one system, even though this is composed of several components!

▶ **Integration**

The horizontal functions of the system are intended to be perceived as an integrated feature

▶ **Interoperability:**

The components of different component suppliers are intended to be interchangeable in order to be independent of individual suppliers

▶ **Compatibility:**

The properties of new components are intended to be taken advantage of in the system even though the system was originally not designed for this purpose

▶ **Guarantee of investment:**

Investment in the system is intended to be guaranteed during the whole life cycle even after exchanging single components

▶ **Manufacturer's responsibility and competence:**

The system integrator is intended to assume responsibility for the entire system life cycle

▶ **Best-of-breed functionality**

The overall system is intended to integrate the "best" components

Example: Process Control System

Important properties:

- ▶ Integration of different components
- ▶ Adaptable functionality
- ▶ Consistent user interface
- ▶ One supplier responsible for the whole system coordinating the integration of many components.













Standardization must also have these properties

System approach in IEC standardization – Basic guidelines (AC/7/2004) (1)

- ▶ **TC/SCs can have different functions:**
 - ▶ **Product function – role of supplier**
 - ▶ **System function – role of customer**

- ▶ **Notes:**
 - ▶ **TC/SCs may have both product and system functions depending on the system(s) in which they operate**
 - ▶ **No hierarchy between TC /SCs with different functions**

System approach in IEC standardization – Basic guidelines (2)

Roles and responsibilities	TC/SC with System function	TC/SC with Product function
Lack of existing product standard – inform TC/SC with product function		
Use product standard properly referenced when available		
Cross-referencing of relevant standard – send draft to TC/SC in question		
Use same classification, designation and coding found in the product standard		
Do not introduce new classification, requirements without prior discussion with the TC/SC system function		
TC/SCs with system and product functions to synchronize activities to work efficiently together		
Create a dialogue		

System approach in IEC standardization – Basic guidelines (3)

Responsibilities of TC/SCs:

- ▶ **Identify its product and system functions and its customer/ supplier relationships**
- ▶ **Create appropriate means of dialogue – liaisons, liaison officers, joint working groups etc.**
- ▶ **Report in SPS (System approach relevance)**
- ▶ **Review regularly**

System approach in IEC standardization – Example – ISO/IEC JTC1/SC 25 (1A)

- ▶ **Title:** Interconnection of information technology equipment
- ▶ **Scope:** ISO/IEC JTC1/SC 25 develops among others cabling systems that
 - use components specified by IEC/SC 46C, SC 48B, SC 86A etc.
 - support applications developed by other system committees i.e. ITU-T, IEEE 802 etc.
- ▶ **ISO/IEC JTC1/SC 25 cooperates with component committees as a CUSTOMER for their products as well as a SUPPLIER of subsystems for system committees.**

System approach in IEC standardization – Example – ISO/IEC JTC1/SC 25 (1B)

Component committees (ISO/IEC JTC1/SC 25 - role of a customer)	IEC/ TC 46 and SCs	Wires, cables, waveguides (copper)
	IEC/ TC48 and SC 48B	Electromechanical components, connectors
	IEC/ TC 86 and SCs	Fibre optics (cables, connectors, subsystems)
Other system committees (ISO/ IEC JTC1/SC 25 - role of a supplier)	ISO/IEC JTC1/ SC 6	LAN
	IEC/ TC 100 TA 4	CATV
	IEEE 802	LAN
	IEEE 1394	FireWire
	ITU-T	Telecommunications
	ATM-Forum	ATM
	IEC/ SC 65C	Digital communications (in industrial process automation)
Other committees	IEC/ TC 77, SC 77B, CISPR/SC I	EMC
	IEC/ TC 104	Environmental conditions, test methods

System approach in IEC standardization – Example – ISO/IEC JTC1/SC 25 (1C)

- ▶ **Cooperation established:**
 - Exchange of documents e. g. SC 77B, JTC 1/SC 6 etc.
 - Liaison officers (experts participating both in JTC1/SC 25 and product/horizontal/network application committees e.g. SC 46C, SC 86A, SC 86B, CISPR/I, IEEE 802 etc.
 - Joint working groups e.g. SC 65C

System approach in IEC standardization – Example – IEC/TC 57 (2A)

- ▶ **Title:** Power systems management and associated information exchange
- ▶ **Scope:** To prepare international standards for power systems control equipment and systems including EMS (Energy Management Systems), SCADA (Supervisory Control And Data Acquisition), distribution automation, teleprotection, and associated information exchange for real-time and non-real-time information, used in the planning, operation and maintenance of power systems. Power systems management comprises control within control centres, substations and individual pieces of primary equipment including telecontrol and interfaces to equipment, systems and databases, which may be outside the scope of TC 57.

System approach in IEC standardization – Example – IEC/TC 57 (2B)

Component committees	IEC/ TC 4	Hydraulic turbines
	IEC/ TC 13	Equipment for electrical energy measurement and load control
	IEC/ SC 17C	High voltage switchgear and controlgear
	IEC/ TC 38	Instrument transformers
	IEC/ TC 88	Wind turbines
	IEC/ TC 95	Measuring relays and protection equipment
System committees	IEC/ TC 8	Systems aspects for electrical energy supply
	IEC/TC 65	Industrial process measurement and control
Other	CIGRE/ SC D2	

Dialogue achieved by means of liaisons and shared experts

Conclusion/ next steps

- ▶ **Conclusion**
 - ▶ **Standardization process must follow market needs and technical development**
- ▶ **Next steps**
 - ▶ **Review customer/ supplier relationships**
 - ▶ **Strengthen existing cooperation methods**
 - ▶ **Create new ones where necessary**
 - ▶ **Add information on system approach relevance to Section A of SPS by 2007-12-31**

**Thank you for your attention.
Any questions?**

