# The Digital Transformation of Standardization IEC actions and roadmap



Pierre Sebellin Technical Department Manager World Standards Week 2017 Thursday, October 19, 2017 Washington DC, USA



## Three aspects of digital transformation

- Standardization of digital products and services
   New standards development approach for new content
- Deliverable products and services from SDOs Standards as digital information
- Standards development process
   Speed and efficiency through digitization and integration



## Standards for digital products and services

Need for a new standards development methodology to address:

- The convergence of the technologies
- The increasing complexity of the standardization topics Examples: Smart Grids, Smart Cities, Smart Manufacturing, Smart Etc.

The new subjects are cross cutting and a larger number of Technical Committees needs working together



## The IEC Systems Approach

- Systems engineering applied to standards development
- Helps finding elegant and effective solutions to complex problems
- Operates as a holistic and iterative process to identify the use cases, develop the architecture model, and identify the standardization gaps
- Breaks the silos between traditional Technical Committees and reach out to consortia



## The IEC Systems Groups

- Systems Committees
   A collaboration platform between TCs and external consortia
- Standardization Evaluation Groups
   Fully open groups serving as incubators
   for System Committees
- Systems Resource Group Developer of the methodology



## The Systems Resource Group

A group of experts in systems architecture, use cases, terminology, semantics

tasked to:

- Develop the methodology
- Specify the IT tools
- Provide support services

#### SRG Guides

- Methodology for analyzing complex systems
- Systems Terminology
- Systems tools documentation
- Best practices

Systems Approach Guide

IEC-System Tool Set

#### SRG TOOLS

- Central repository
- Systems mapping
- Architectures
- Use Cases
- Systems & data analysis

Training

- Consulting
- Application support

SRG Services

Feedback Forum

Support Services





### **Currently operating Systems Groups**

Five Systems Committees:

- Smart Energy
- Electrotechnical aspects of Smart Cities
- Smart Manufacturing
- Active Assisted Living
- Low Voltage Direct Current

Two Standardization Evaluation Groups:

- Smart Home/Office Building Systems
- Standardization Evaluation Group on Communication
   Technologies and Architectures of Electrotechnical Systems



## **Digital Deliverables - XML**

XML format will allow a much richer content for standards

- IEC is currently converting its catalogue in XML
- Enriched conversion including metadata
- Compatible NISO exchange format



## Digital Deliverables – Data bases

Standards in Data base format

 Today: Terminology, symbols, Smart Grid application layer

Tomorrow:
 Use cases, IoT application layer

Domain: Electric/electronic components (IEC 61360-4) V	
Open all   Close all	
Electric/electronic components (IEC 61360-4)	
AAA001 - component	
🖨 😋 AAA002 - electric/ electronic component	
🖻 😋 AAA003 - amplifier	
🖻 😋 AAA004 - low-frequency amplifier	
AAA005 - power amplifier	
🖻 😋 AAA006 - voltage amplifier	
🖻 😋 AAA007 - differential amplifier	
AAA008 - operational amplifier	
AAA009 - AC-coupled amplifier	
AAA010 - single-sided amplifier	
AAA011 - radio frequency amplifier	
AAA012 - wideband amplifier	
🖻 😋 AAA013 - antenna	
AAA014 - capacitive antenna	
AAA015 - inductive antenna	
AAA016 - resistive antenna	
🖻 😋 AAA017 - battery	
AAA018 - primary battery	
AAA019 - secondary battery	
🕀 😋 AAA020 - capacitor	
AAA021 - fixed capacitor	

## **Digital Deliverables - M2M**

Machine to Machine interfaces

- Open Data initiative: new copyright statement adapted to standards inluding machine code
- IEC just released its first M2M interface for its terminology: opendata.iec.ch
- Will be extended to other database standards



## **Digital IEC Operations: Integration**

The IEC, like other SDOs, offers today a set of tools allowing full paperless standards development

The IEC tools were developed separately and rely on several background technologies

The **IEC New Business Platform** is a step forward in a continuous stream evolution. It will bring **full integration** of the data and services.

Key benefits for TCs: new integrated collaboration tools, on line project management (no more paper forms), on line XML based authoring tool...



### **New IEC Business Platform**

A fully integrated set of services:

**Content development:** tools supporting the collaborative work of the TCs, including online content creation and project management

**Content Management:** IEC data in a structured, reusable format (XML) to enable product and service creation for members as well as data exchange

**Content Delivery:** methods and tools that allow IEC and its members to deliver innovative products and services



Content development

:Ö:

## **New IEC Business Platform**

✓ (beta)

2018

2018

2018

Project status (main services):

- Publications development process
- IEC Management Services
- Open data initiative (M2M)
- Use Cases Management repository 2017
- Collaboration Tools for TCs and NCs 2017
- Integrated data feeds
- XML conversion (on going)
- On line content creation
- And more...

Content development





#### Next . . .

- Disseminate the Systems approach to the traditional Technical Committees as the future regular methodology
- Complete the new Business Platform with more integrated modules
- Address the digital challenge with the proper set of Systems Committees addressing cross cutting standardization
- Continue to collaborate with other SDOs on wider standardization challenges (Smart Cities...) and digital transformation tools





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