TOWARDS EFFICIENT IEC 61850 MULTI-VENDOR INTEROPERABILITY

ENTSO-E PERSPECTIVE
About ENTSO-E

A. Introduction

B. ENTSO-E Interoperability Specification Tool

C. ENTSO-E expectations towards UCAIug IOP
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C. ENTSO-E expectations towards UCAIug IOP
Observations:

- Multi-vendor systems very scarce 10 years after 1st standard publication
- Implementation complexity

Recommendations:

- Improve interoperability, over life cycle of the systems of Assets
- Mask complexity by ergonomic tools

Stakeholders:

- standardization bodies: IEC, … ; Suppliers ; Conformance testing companies: UCA lug, … ; Users (associations): ENTSO-E, …
ENTSO-E AhG IEC 61850: membership & deliverable structure

https://www.entsoe.eu/about-entso-e/research-and-development/standardisation/
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What are the main ideas behind the ENTSO-E Interoperability Specification Tool for IEC 61850 (ISTool)?

→ Tool for Transmission (sub)functions and signals collection @ ENTSO-E level

→ Cornerstone for ENTSO-E profile @ information, communication and engineering levels

→ Future proof (e.g. integration of settings parameter, CIM, interfaces with system specification and configuration tools, …)

→ Basis for gap analysis between IEC 61850 and user requirements

→ Facilitator between IEC 61850 complex world and utility world, finally enabling multi-vendor interoperability in an efficient and sustainable way
Do you want to know more about the ENTSO-E Interoperability Specification Tool for IEC 61850 (ISTool)?

→ Visit the ENTSO-E booth and take a look on our poster

→ Come at the IEC 61850 Europe Conference 2014 in Prague to see our “click prototype”
Agenda

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ENTSO-E expectations towards IEC 61850

IEC 61850 Edition 2

Users + IEC
Gap analysis from ENTSO-E ISTool (mainly data models)

IEC
Improvement user purchasing process – eg ISD File

Engineering Process
ENTSO-E specification
- Process Formalisation

Market
Tool development
- Process Efficiency (not only effectiveness)

Framework for BAP methodology

Vendors implementation

Market
ENTSO-E expectations towards UCAIug IOP (2015)

- Need to focus in order to make IOP efficient and realistic
  → prerequisite for relays maturity?
  → Idea to develop: test against a reference so that all vendor combinations have not to be tested
  → Positive consequence: the tests are independent of a specific vendor combination

- Incentive for vendors to define (keep in mind ENTSO-E global expectations – see slide before and ENTSO-E statement)
  → Product and systems certification: to think about enhanced certificates, i.e. users evaluation process should be univocal and facilitated by official and objective certificates

- From user point of view, need to consider test of mixed systems is a must (Ed.1/Ed.2, think Ed.2 vs Ed. 3, … → need of methodology to test backward compatibility)
1. To test IEC 61850 multi-vendor concrete implementation through the complete generic utility design process, independent of the TSO contracting model (turnkey, system integrator, in-house engineering, ...), and with a focus on utility applications.

2. To give an objective overview on the IEC 61850 multi-vendor interoperability material.

Vendors expectations:

Marketing?
Product improvement?

… ?

Common & approved mission statement for UCA IOP (2015)
ENTSO-E expectations towards UCAIug IOP

**IEC 61850 Edition 2**

- **Gap analysis** from ENTSO-E ISTool (mainly data models)
- **Improvement** user purchasing process – eg ISD File
- **Engineering Process**
  - ENTSO-E specification
  - Process Formalisation
- **Tool development**
  - Process Efficiency (not only effectiveness)

**Framework for BAP methodology**

**Vendors implementation**

**Perimeter of IOP 2015?**

IEC 61850 is a strong enabler for the sustainable substation of the future.

All the IEC 61850 community has to make it multi-vendor interoperable over lifecycle of the systems, providing the tools allowing efficient configurations of these systems.