Paris Session 2022

Implementation of PAC systems utilising IEC 61850 Design Process

Study Committee B5, PS 3
Question 3.4 What are other experiences to improve the specification, engineering, testing and maintenance to address the challenges in our industry?

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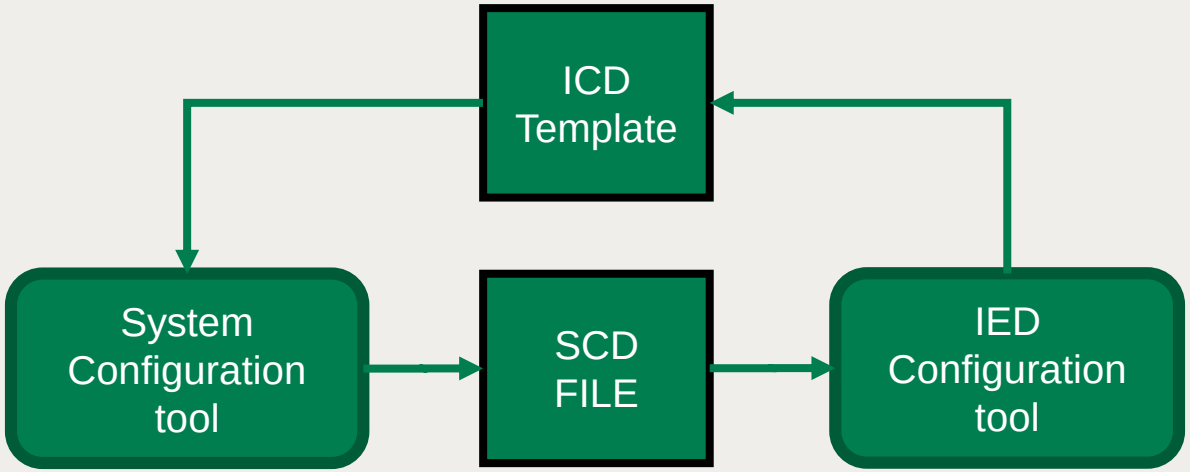
Benefits of Utilising Top Down Engineering

- IEC 61850´s definition of SCL language and a common data model, has opened the door for third party engineering tools and consequently to a top-down engineering process, where compatibility between Client and Server devices are harmonised.

BENEFITS OF TOP-DOWN ENGINEERING APPROACH

- Reduced engineering time involved in preparing device configurations
- Reduction in configuration errors
- Reduction in testing requirements

IEC 61850 Engineering Process



Experience on the implementation of IEC 61850 design process

SAS ARCHITECTURE

- Network Topology, Data Flow and Redundancy
- IP Address Class management
- Cybersecurity requirements

DEVICE SPECIFICATION

- Reduction in variation of preconfigured ICD templates
- Clear definition of device requirement
- Early identification of asset management and training required

ICD TEMPLATES / TELECONTROL SIGNALS

- Reduced configuration time
- Describe device capability and also pre-configure for specific bay and device type
- Standardisation of switchgear allows for Standardisation of telecontrol signals

- Utilising standard IEC 61850 design methodology reduces the engineering effort and testing time
- Efforts must be taken to reduce the number of configuration variants to allow for successful development of standard bays.
- Standardisation should be systemic from switchgear to architecture to device type to allow the successful implementation of the standard bay configuration and design