Substation Configuration Tool

SCT

SYSTEM ENGINEERING FROM A SUBSTATION-RELATED PERSPECTIVE

The input of the substation's single-line diagram is the starting point for system engineering with SCT. This plant-related top-down engineering approach reflects proven engineering practice. SCT thus offers the user continuity in the new IEC 61850 environment. Further engineering steps in SCT are based on the substation's single-line diagram.

Type Libaries

According to IEC 61850, Logical Nodes (LNs) and their Data Objects (DOs) are the modules for the information modeling of a substation. The standard specifies their mandatory and optional components in parts 7-3 and 7-4. SCT provides the templates defined in the standard for logical nodes and data objects, thus enabling their standardized typification. SCT stores the generated objects in project-independent type libraries. They are available there for project-specific system engineering

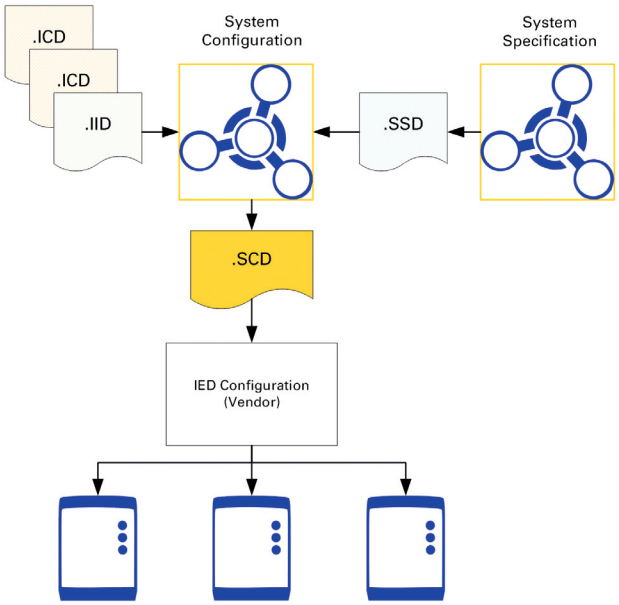
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SCT-SUBSTATION CONFIGURATION TOOL

System engineering based on IEC 61850-6

The design tool used is of decisive importance in the modern system engineering of substation automation technology. An important quality feature here is the effort required for configuration and project-specific parameterization. Acquisition and training costs must be taken into account, as must the long-term reusability of the generated project data. The IEC 61850 standard opens up interesting perspectives for the engineering process of substation automation technology. A vendor-neutral configuration tool – as required by IEC 61850 – gives the user new degrees of freedom.

This tool enables the user to model the substation automation technology at an abstract level, but still in great detail, regardless of the device technology used. Engineering data is continuously refined during the project creation phase and can be archived in a standardized format, future-proof. The Substation Configuration Tool (SCT) is the consistent implementation of the IEC 61850 requirement for a vendor-neutral configuration tool.



SYSTEM MODELLING CONFORMING TO STANDARDS

SCT automatically creates standard-compliant descriptions in SCL from the configured single-line diagrams, system components, information objects and communication configuration. In doing so, SCT generates specification data sets (System Specification Description, SSD), device data sets (IED Capability Description, ICD / IID) and complete system descriptions (System Configuration Description, SCD). A distinct system modeling is created and can be transferred in a standardized format to the supplier of the control technology components for system-specific further processing.

SCT-SUBSTATION CONFIGURATION TOOL



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<DataTypeTemplates>
  <LNodeType id="C_XSWI" desc="Circuit Switch (Typ: 380kV)" lnClass="XSWI">
    <DO desc="Mode" name="Mod" type="m_INC" transient="false" />
    <DO desc="Name plate" name="NamPlt" type="m_LPL" transient="false" />
    <DO desc="Health" name="Health" type="m_INS" transient="false" />
    <DO desc="Behaviour" name="Beh" type="m_INS" transient="false" />
    <DO desc="Local operation" name="Loc" type="m_SPS" transient="false" />
    <DO desc="Operation counter" name="OpCnt" type="m_INS" transient="false" />
    <DO desc="Switch position" name="Pos" type="ak_DPC" transient="false" />
    <DO desc="Block opening" name="BlkOpn" type="ak_SPC" transient="false" />
    <DO desc="Block closing" name="BlkCls" type="ak_SPC" transient="false" />
    <DO desc="Switch type" name="SwTyp" type="m_INS" transient="false" />
    <DO desc="Switch operating capability" name="SwOpCap" type="m_INS" transient="false" />
    <DO desc="External equipment health" name="EEHealth" type="m_INS" transient="false" />
  </LNodeType>
  <LNodeType id="C_CSWI" desc="Switch Controller (Typ: 380kV)" lnClass="CSWI">
    <DO desc="Mode" name="Mod" type="m_INC" transient="false" />
    <DO desc="Name plate" name="NamPlt" type="m_LPL" transient="false" />
    <DO desc="Health" name="Health" type="m_INS" transient="false" />
    <DO desc="Behaviour" name="Beh" type="m_INS" transient="false" />
    <DO desc="Switch, general" name="Pos" type="ak_DPC" transient="false" />
    <DO desc="Resetable operation counter" name="OpCntRs" type="m_INC" transient="false" />
    <DO desc="Switch L1" name="PosA" type="ak_DPC" transient="false" />
    <DO desc="Switch L2" name="PosB" type="ak_DPC" transient="false" />
    <DO desc="Switch L3" name="PosC" type="ak_DPC" transient="false" />
  </LNodeType>
  <LNodeType id="m_CILO" desc="Interlocking (Typ: mandatory)" lnClass="CILO">
    <DO desc="Mode" name="Mod" type="m_INC" transient="false" />
    <DO desc="Name plate" name="NamPlt" type="m_LPL" transient="false" />
    <DO desc="Health" name="Health" type="m_INS" transient="false" />
    <DO desc="Behaviour" name="Beh" type="m_INS" transient="false" />
    <DO desc="Enable Open" name="EnaOpn" type="m_SPS" transient="false" />
    <DO desc="Enable Close" name="EnaCls" type="m_SPS" transient="false" />
  </LNodeType>
  <LNodeType id="EC_TVTR" desc="Voltage Transformer (Typ: 380/110kV)" lnClass="TVTR">
    <DO desc="Mode" name="Mod" type="m_INC" transient="false" />
    <DO desc="Name plate" name="NamPlt" type="m_LPL" transient="false" />
    <DO desc="Health" name="Health" type="m_INS" transient="false" />
    <DO desc="Behaviour" name="Beh" type="m_INS" transient="false" />
    <DO desc="Voltage (sampled value)" name="Vol" type="m_SAV" transient="false" />
    <DO desc="TVTR fuse failure" name="FuFail" type="m_SPS" transient="false" />
  </LNodeType>
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