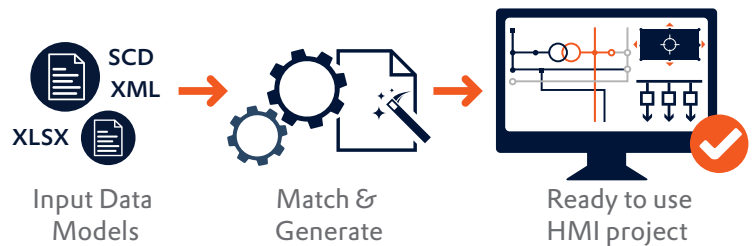# Automated substation HMI engineering

Benefit from structured data models in HMI configuration

With zenon, substation HMI projects can be generated automatically. This supports energy companies with the end-to-end implementation of standards and reduces engineering effort by up to 90%.

SCD
XML
XLSX

Input Data Models → Match & Generate → Ready to use HMI project

STRUCTURED DATA ACCELERATES THE ENGINEERING PROCESS

Dedicated engineering models can be incorporated in the design and specification of energy facilities. Standards such as IEC 61850 provide models for describing electrical networks, for example, in a substation. These data models are used to accurately describe the structure of the network and its components. This ensures the basic blueprint for your energy application is available from the outset in digital form.

RELIABLY INTRODUCE STANDARDS: WITH AUTOMATIC CONFIGURATION

Regardless whether you're implementing protection technology, protocol gateways, HMI or control center solutions, the implementation of the detailed application should make the best possible use of pre-engineered components. In the case of an HMI, specifically, this means all objects for the visualization in the single-line diagram, the messages for the event list, and detail views of individual components are generated automatically, including the associated variables and drivers. This process produces a complete application that can be put into operation with a minimum of engineering effort.

COMPREHENSIVE RANGE OF SERVICES

COPA-DATA provides support services to ensure our customers get the most out of their solutions. You benefit from our expertise in current industry standards. The process for generating a substation solution using our zenon Software Platform can be divided into the following steps:

STEP 1: REVIEW AND PREPARE THE DATA MODELS
▸ Available data models are analyzed and adapted for automatic HMI project generation
▸ Support with alignment of third-party tools, for example, an IEC 61850 System Configuration Tool (SCT, e.g. Helinks ™ with zenon Vendor Package)

STEP 2: DESIGN AND IMPLEMENT A TEMPLATE PROJECT IN ZENON
▸ Complete the design and creation of a zenon template project, including the required symbols and objects
▸ Implement the application in zenon in line with best practices; assess further standardization potential

STEP 3: CUSTOMIZE THE PROJECT GENERATION WIZARD
▸ Implement the general process: review and link the input data, and automatically generate the HMI project
▸ Run advanced functions such as gateway configuration and monitoring of network infrastructure (SNMP)
▸ Match the look & feel, and integrate the project with the customer development process

STEP 4: PROVIDE ADDITIONAL SUPPORT AND ASSIST WITH ROLLOUT
▸ Technical support with implementing the solution
▸ Continue to align and further develop the solution as per the service level agreement (SLA)

FAST FACTS
▸ Up to 90% time saved by automatic and error-free project generation
▸ Flexible toolbox for automatic generation of substation applications
▸ Use of available data models (IEC 61850 model data, signal lists, etc.)
▸ Automatic generation of single line diagrams, command behavior and IED connectivity

Automated substation HMI engineering
Benefit from structured data models in HMI configuration

Combine existing configuration data in a complete engineering plan	‣ Standard models for describing the electrical network (e.g. IEC 61850 SCL) ‣ Signal lists with additional attributes ‣ zenon template project with symbols and objects
Wizard generates HMI project automatically	‣ Automatic generation of the necessary network components ‣ Automatic generation of communication drivers and data points ‣ Automatic allocation of variables to corresponding visualization components ‣ Transfer of limit values and message texts
Benefit from our experience with numerous industrial projects	Support from the COPA-DATA team of experts: ‣ Analysis of the existing data models ‣ Creation of project-specific templates ‣ Adjustments in the wizard and its interfaces (zenon AddIn, C#, .NET) ‣ If necessary, test-based optimization of the entire creation process
The result: ready-to-use substation projects	‣ Fully functional single-line diagram, command and other HMI functions ‣ Ready for data exchange with safety devices or the control center ‣ Effective implementation of standards through the use of powerful functions in zenon ‣ Significant time savings and elimination of configuration errors