

# Ergonomic engineering of an automated substation

The creation of a local control system for a substation must be a simple and rapid process. Depending on the purpose of the local control system (from simple operation during communication breakdown, right up to the control points for luxurious operating and analysis) zenon can be assembled with various modular components in order to fulfill the network operator's requirements.

## ERGONOMIC VISUALIZATION THROUGH REUSABILITY

Drawing feeder and transformer bays is a recurring task in the creation of one-line diagrams for the local control system. For this zenon offers a pre-defined library of graphical objects which can be pulled into the screen per Drag&drop and substituted with the corresponding variable. The clear advantage: central object management delivers rapid results and eases maintenance considerably.

The excellent reusability of graphical objects, screens or entire projects, allows for extremely quick generation of follow-up projects. Furthermore, screens can be saved as templates in the zenon Editor (development environment). For complete automation of the project creation process, so-called Wizards can be programmed which can then automatically generate entire projects or parts of it.

## CONFIGURATION OF CONNECTIONS

In order to speed up configuration of connections e.g. based on IEC 60870, DNP3 or IEC 61850, data points can be easily imported online (from the connected device) or offline (from a description file) in zenon.

## INTERLOCKING CONCEPTS

For a proper local-remote concept, a system is needed which can influence the power of control for equipment parts or the entire plant. A thought through and consistently integrated interlocking concept which can also be combined with the user administration, offers maximum freedom for the realization of equipment according to the requirements of the plant operator.

## COMMAND INPUT

It is simple and quick to proceed with the engineering of the command input. Whether double, single, pulse or any other special command is needed, the zenon command input covers every request. It is quick to compile sets of commands in a command group and then make them available to the user via a pop-up window or context menu.



*I set up the 61850 driver, imported variables through the driver and browsed for RCB like the help files described. 2 minutes later we had the variables working spontaneous, only polling one variable.*

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## DISTRIBUTED ENGINEERING

The best scope for efficient work distribution during the creation of SCADA applications in substations lies in the distributed engineering functionality. Tested processes known from software development, are also available in zenon. Checking-out project sections prevents changes from taking place while an engineer is working with it. Only through the subsequent insertion into the complete work is it released for other engineers, so they can see and use the changes in the project. Associated with this is the seamless logging of the carried out work and version management.

## ZENON AS A GATEWAY

zenon's own gateway function enables the transmission of data or the receiving of commands from a superordinate level (e.g. control center). This software based solution can serve as a replacement for a specifically installed RTU (Remote Terminal Unit). The gateway function can be installed, also on redundant zenon servers, for critical substations.

## FAST FACTS

- ▶ Integrated command input
- ▶ All standard protocols (e.g. IEC 60870-5-101, 103, 104, DNP3 or IEC 61850, GOOSE)
- ▶ Topological coloring
- ▶ Import mechanism
- ▶ Automated project creation
- ▶ Interlocking and user administration are combinable
- ▶ Distributed engineering
- ▶ Replace screens and symbols
- ▶ Structured text and CSV variable import
- ▶ DNP3 device profile and variable import
- ▶ Gateway function for soft RTU



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