

## Siemens AG banks on DSC Software AG

# "Great Suspense" in using Standard Systems

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**Continuous dataflow supports increases in productivity, projecting, and document generation. Fast and precise engineering becomes possible.**

Siemens uses standard CAD and PDM systems for its business segment Power Transmission and Distribution (PTD). The Karlsruhe-based DSC Software AG integrated and customized these systems. The solutions support a continuous dataflow from projecting to installation. This has accelerated workflows and speeded up order processing.

The business segment Power Transmission and Distribution consists of six business areas. For all tasks related to power transmission and distribution with voltages higher than 52 kV, the business area high voltage located in Berlin is an experienced partner. Tasks include developing solutions for line and transmission systems in all application areas, planning and construction of turn-key facilities with high voltage switch and transmission technology, and supporting modern energy quality management. The plant in Berlin engineers and builds outdoor switchgears from 72 to 800 kV, surge arresters and limiters for high, medium and low voltage, and gas-insulated switchgears

### Complete Data Use

Integrating and digitalization of workflows and processes optimized product development with Siemens PTD. A continuous workflow with related systems and data supports employees from projecting and detailed engineering to installation. Says Heinz Groß of Siemens AG: "The cycle time for a SF6 switchgear used to be more than a year. This due to the complexity and the size of installation, and to en-

gineer-to-order production. Among other things, the continuous dataflow reduced cycle times by several months." Introducing of specialized Cax applications resulted in increasing efficiency of projecting, construction and document generation.



**Siemens business area PTD produces outdoor switchgears from 72 to 800 kV, surge arresters and limiters for high, medium and low voltage.**

Today, fabricated graphical product components form the basis for fast and precise engineering. Using product data of subprocesses increases efficiency of the overall order processing. Explains Heinz Groß: "This is possible only because the information flow between projecting, engineering and production works very smooth."

DSC Software AG supports Siemens PTD in projecting, realization and implementation of an continuous dataflow. The Karlsruhe-based software company customized existing standard systems to Siemens PTD's requirements, and developed programs and interfaces.

The CAD System CADDs and the PDM system CADIM/EDB are the two most important systems for engineering switchgears and gas-insulated switchboards.

Outdoor switchgears are configured from standard components and represent real engineer-to-order. The customer initiates production. There exists no stock production. Outdoor switchgears are produced on the basis of an optimized production depth. The components used, such as girders, switch cabinets and drives, and also raw materials, such as castings and porcelain come from suppliers when needed, or are in-house produced. All engineering activities use the CAD system.

Outdoor switchgears are customized to customer request by configuration of variants. In contrast, engineering of gas-insulated switchboards follows the typical way in installation industry. Gas-insulated are tailored solutions, made-to-order, and turn-key products. They consist of switchboard sections build with existing components according to the modular principle. A few different components any favored switchboard variant is realizable. Siemens provides all projecting and order processing: from first concepts to delivery the turn-key solution to the customer. In Berlin, the switchboards are assembled in transportable units, tested, and on-site transported.

### **Fast Projecting**

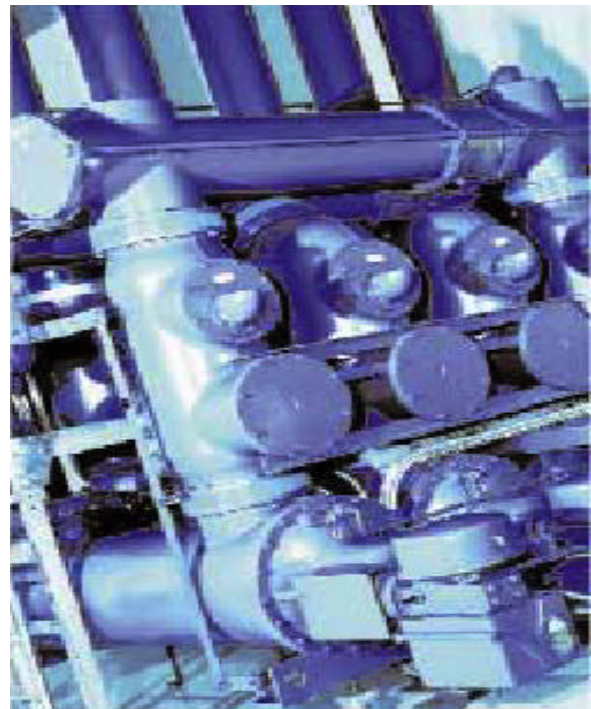
Siemens PTD Erlangen is responsible for projecting gas-insulated switchboards. Since the beginning 1990s, Siemens PTD uses 3D-Tools in projecting. This because 3D models allow a fast visual check instantly detecting zoning collisions with buildings or other installation components.

According to customer specification the switchboard is configured on-screen. Siemens uses MEGIS-CADDs, an application based on CADDs, and developed

by DSC Software AG. This application allows fast installation projecting by using fabricated graphical components, the engineer is able to select from a component library. Number, arrangement, and individual design of the components easily adjust to customer request.

By exactly defined and graphically specially marked junctions, components are assembled. Junctions serve for positioning and check of connections. DSC Software AG developed a program tracking phase position and phase allocation for primary lines. The program determines current allocation displaying results in a table on the drawing.

On designing the installation the project engineer does not have to consider inside details of single components. They are assembled as "black box with function", for example as "Insulator" or "Earth Electrode". The detailed definition of single components is done in Berlin after the order was placed with Siemens. For projecting, components, such as switchgears, collective bars and switching cabinets are sketched. This eases simple and fast handling in projecting and sales. For example, a switching cabinet is defined as "cube", a switchgear as "cylinder with flanges".



**Gas-insulated switchboard.**