Engineering**Tools**

AmpereSoft

simply faster engineering

Ampere**Soft** – Consulting and Too
by Professionals for Professionals

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AmpereSoft's success story started in 2007, when four ex-employees of the »Engineering Competence Center« at the Moeller Group set up their own business.

They consequently already had 20 years of know-how in the sector before starting *AmpereSoft*. They acquired the rights to Moeller's engineering software tools (e.g. CAE 33). Since then, these tools have been further developed and sold on the international market under a new name. The process-oriented product portfolio was extended with configurators and product management and maintenance systems, which are also available in different language versions, thus ensuring that *AmpereSoft Tools* can be used universally.

reSoft Tools supporting professionals in more than 90 countries

The key to the success of the Bonn-based software supplier has been a constant process of internationalization. Users from 90 different countries now rely on *AmpereSoft Tools*. Standards are an indispensable necessity in such a diverse market. *AmpereSoft* has consequently been advocating for many years the establishment and further development of eCl@ss ADVANCED, a cross-sector standard for product data. Only open standards such as eCl@ss ADVANCED make it possible for CAE processes to run smoothly beyond national borders or site boundaries – and all this irrespective of the software used. Besides its international orientation, the modular design of the *ToolSystem* is a critical factor for its success. The *AmpereSoft* product portfolio consists of a number of seamlessly linked special solutions in addition to the *ProPlan* detail engineering tool. These automate the supporting activities of the engineering process such as the time consuming cost calculation of projects or also the preparation of quotations.

The development of the *TemperatureCalculator* solution is particularly significant here. It shows how political decisions can affect market development: When the DIN EN 61439 European standard came into force in 2014 to regulate the safety require-

ments for low voltage switchgear assemblies, the uncertainty in the panel building sector was palpably evident. The precisely stipulated documentation requirements in particular presented many engineers with an enormous challenge. In response to the new situation at that time *AmpereSoft* developed the *TemperatureCalculator*, which automatically performed the temperature calculation for the inside of a switchgear assembly together with all the required variables. The solution thus supports the reliable creation of costly design verifications.

Open standards as trailblazers for Industry 4.0

According to the digital association bitkom, the profits gained through Industry 4.0 in the German market in 2017 increased by one fifth to around 5.8 billion euros. For 2018 bitkom is even expecting profits of seven billion. However, the commercial potential of Industry 4.0 can only be fully exploited if all product data is covered in an open standard. One example of this is robot-assisted production: If detailed information is not available in a standardized format, this still has to be compiled manually by a human and entered in the software of the production robot.

This kind of product data basically consists of information such as length dimensions or also material properties such as temperature rise response. Only through the availability of this information can production processes be fully automated. This furthermore is in no way a utopian idea.

However, in the CAE market the potential of standardized data is in no way limited to the area of production. It also offers a benefit to integrated and highly complex projects. *AmpereSoft*, for example, is actively engaged in the ServiceFlow research group at Dresden University of Technology. The aim of this collaboration is to develop an open service platform along the entire value chain of smart buildings. The seamless collaboration of architects and electrical engineers presents the greatest challenge here. For example, information about the location of operator panels for smart lighting and the temperature rises resulting from this must already be taken into
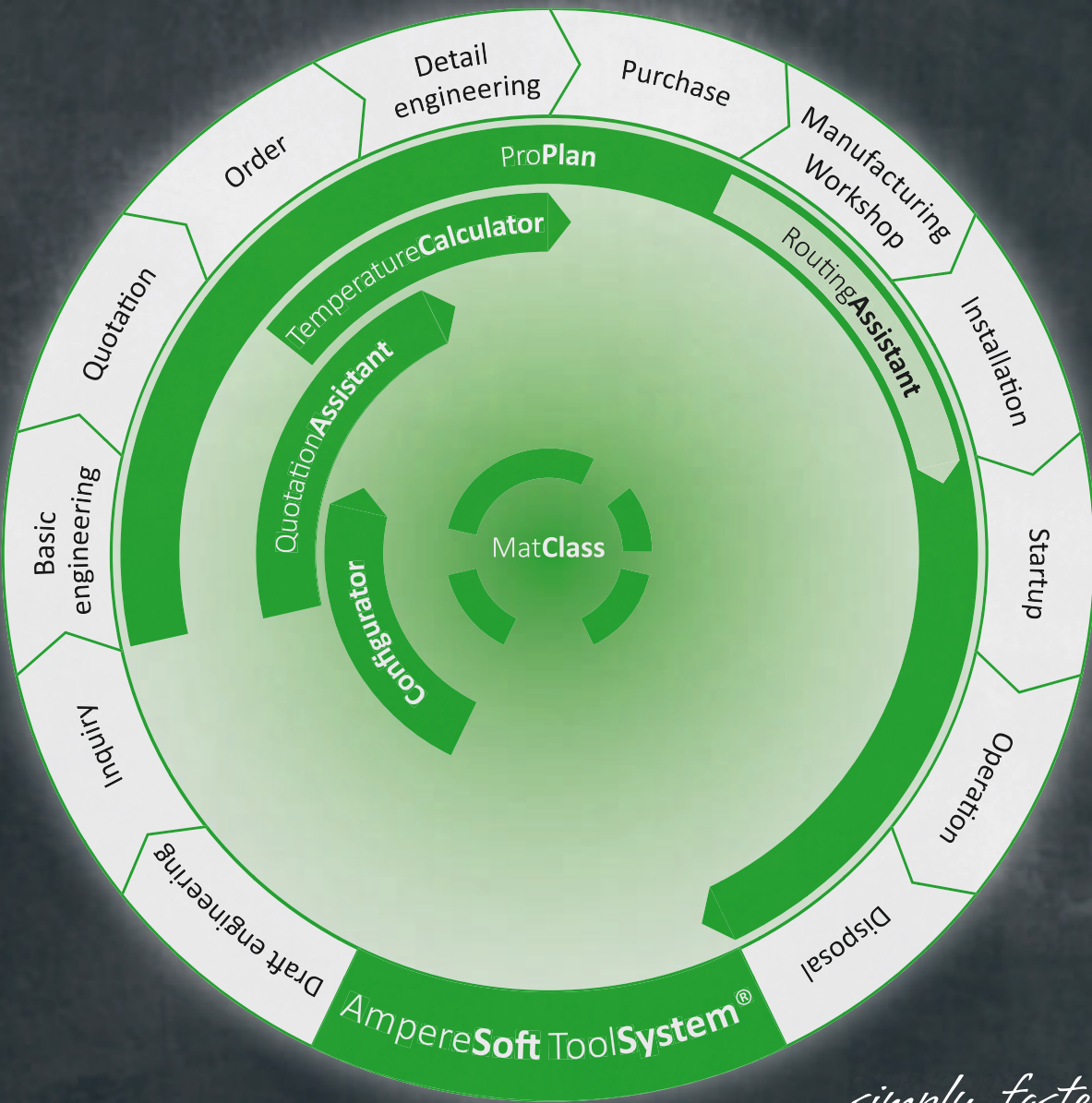
account in the architectural planning. Standards such as eCl@ss-ADVANCED are also indispensable here.

Utilize the benefits of a strong connection between business process requirements and the necessary *AmpereSoft* tools and services. *AmpereSoft* optimizes your engineering and your processes with tried and tested software tools developed from professional experience.

<AutomationML/>

eCl@ss®
CLASSIFICATION AND PRODUCT DESCRIPTION
ADVANCED

The Ampere**Soft**
Tool**System**

Detail engineering

Purchase

Order

Manufacturing Workshop

Pro**Plan**

Quotation

Temperature**Calculator**

Routing**Assistant**

Installation

Basic engineering

Quotation**Assistant**

Mat**Class**

Configurator

Startup

Inquiry

Operation

Draft engineering

Disposal

Ampere**Soft** Tool**System**®

simply faster engin
with the AmpereSoft

Optimizing Your Engineering Processes Based on Fully Standardized Data

The *AmpereSoft ToolSystem* combines innovative software tools for your engineering process. You benefit here from the shared use of data once it has been entered. With each process step your projects will gain more information, giving you the overview and allowing you to track any changes and ensure they are taken into account in all process steps. The shared database—for example, the comprehensive and detailed product data of the manufacturers—is accessible to all tools at any time. This ensures the required quality assurance and documentation.

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ToolSystem

AmpereSoft ProPlan

The convenient and practice-based CAE System for electrical documentation

Optimized engineering process with consistent object orientation

Noticeably shorten your engineering process with automated function sequences. The key: standardized material data that was classified for instance with eCl@ss ADVANCED. This enables users of the *ProPlan* CAE solution to generate symbols quickly and simply. The wiring is implemented using the auto-routing function, which also optimizes the cable lengths at the same time. Documents such as parts lists, terminal plans, cable and wiring plans can also be generated easily.

Optimum integration in your process environment

Standard interfaces enable connection to your internal systems such as ERP and PIM and thus enable the implementation of automated feature enhancements.

Easy navigation

The object-oriented operation with manufacturer specific and neutral material ensures easy navigation in your projects. The possibility to easily locate the equipment used makes it possible to move quickly between plans and lists.

Seamless processes with the *AmpereSoft ToolSystem*

ProPlan is the tried and tested tool for professional detail engineering. Integration in the *ToolSystem* enables the projects to be transferred easily from the configuration and calculation as well as the use of project data for automated manufacturing. This includes the auto-routing for cable preparation and the data transfer to automatic drilling machines.
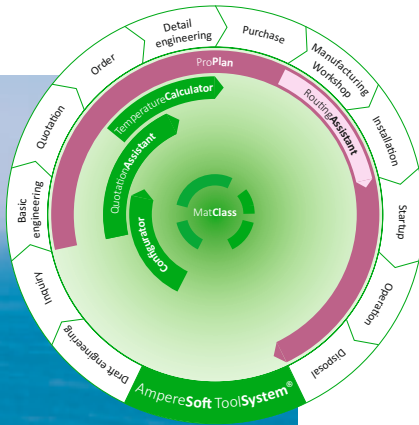
ToolData**Manager**
The cross-project search and maintenance tool for working with AmpereSoft ProPlan

Finding information quickly

Find the required *AmpereSoft ProPlan* project in your directory structures (local/network) quickly and easily by using project attributes (fixed texts), key texts, plan texts, symbol names and material attributes.

Effective mass processing

Maintain attributes, or symbols and material for specific projects or for all of them. Use the effective mass management tool for importing both materials and symbols, as well as for archiving, compressing and outputting the selected *ProPlan* projects.

Support with project creation

Use the simple drag and drop functionality to open a *ProPlan* project or create a new one. If required, simply use an existing project as a template for the new project.

Seamless operation in the process with the *AmpereSoft ToolSystem*

The *AmpereSoft ToolDataManager* is the tool for effective *ProPlan* project management and editing. Integrated in the *ToolSystem*, it enables you to find project content quickly and reuse it.

Routing**Assistant**
Saving costs through accurate wire length calculation

Using x, y and z coordinates as a basis, the autorouting function enables wiring to be routed automatically, taking cabinet doors and other depth dimensions into account. The eCl@ss-ADVANCED data of the equipment used enables you to generate the symbols and create an assembly plan in no time at all. The *AmpereSoft RoutingAssistant* is available as an add-on for your already existing *AmpereSoft ProPlan* license or as a standalone solution alongside your existing CAE system.

We can also provide you with a separate operation description.

TOOLS FOR WORKING WITH *AMPERESOFT PROPLAN*

Mat**Class**

The tool for the easy management, flexible distribution and efficient use of your product data to speed up the process

Your optimized engineering process

As an independent catalog system for material and services, *MatClass* offers essential critical support for the smooth running of processes in your company. The detailed technical information in the eCl@ss-ADVANCED structure provides a precise description of a product so that tasks in the engineering process, such as symbol creation, wiring routing and temperature calculation, can be carried out automatically.

Distributing product data – in a standardized format

Standardized classification systems such as eCl@ss and ETIM provide the foundation for the common language between a wide variety of software systems. A large number of adaptable formats such as BMEcat and Excel simplify the exchange of data with business partners and internal systems.

Efficient mass maintenance for your product master data

The clear display of product information in *MatClass* ensures efficient maintenance and easy management of commercial, technical, multi-media and classification data. The range of features includes the convenient mass maintenance of data.

Consistency in the process with the *AmpereSoft ToolSystem*

MatClass is the common basis for all tools for the effective use of standard data in the entire *AmpereSoft ToolSystem*. Whether in sales, design, purchasing, work preparation, stock-keeping or production – the material master data is available for the entire process.
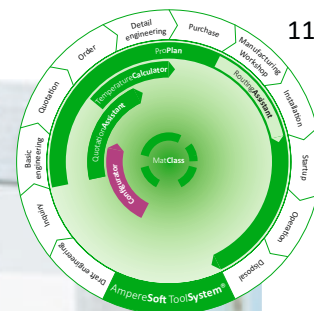
Configurator

The system for configuring complex switchgear assembly and component systems

Easy handling

The intuitive user interface guides you simply through the structure of the system. Graphical templates support the selection of parts and components and can be set by drag and drop directly at the required position.

Reliable configuration

The manufacturer-specific rules transport complex product know-how to any workplace. *AmpereSoft Configurator* thus helps you to combine systems and their components error-free in only a few steps.

Rapid results

This thus allows to you to configure switchgear assembly systems and complex products in a matter of minutes. It not only provides you with an automatically generated parts list, but also graphical displays for your quotations and documentation.

Consistency in the process with the *AmpereSoft ToolSystem*

An *AmpereSoft Configurator* enables the simple, reliable and rapid combination of complex switchgear assembly systems and components with the appropriate accessories. Integration in the *ToolSystem* enables project data for calculating quotations to be transferred directly and further processed in *ProPlan* for standard compliant detail engineering.
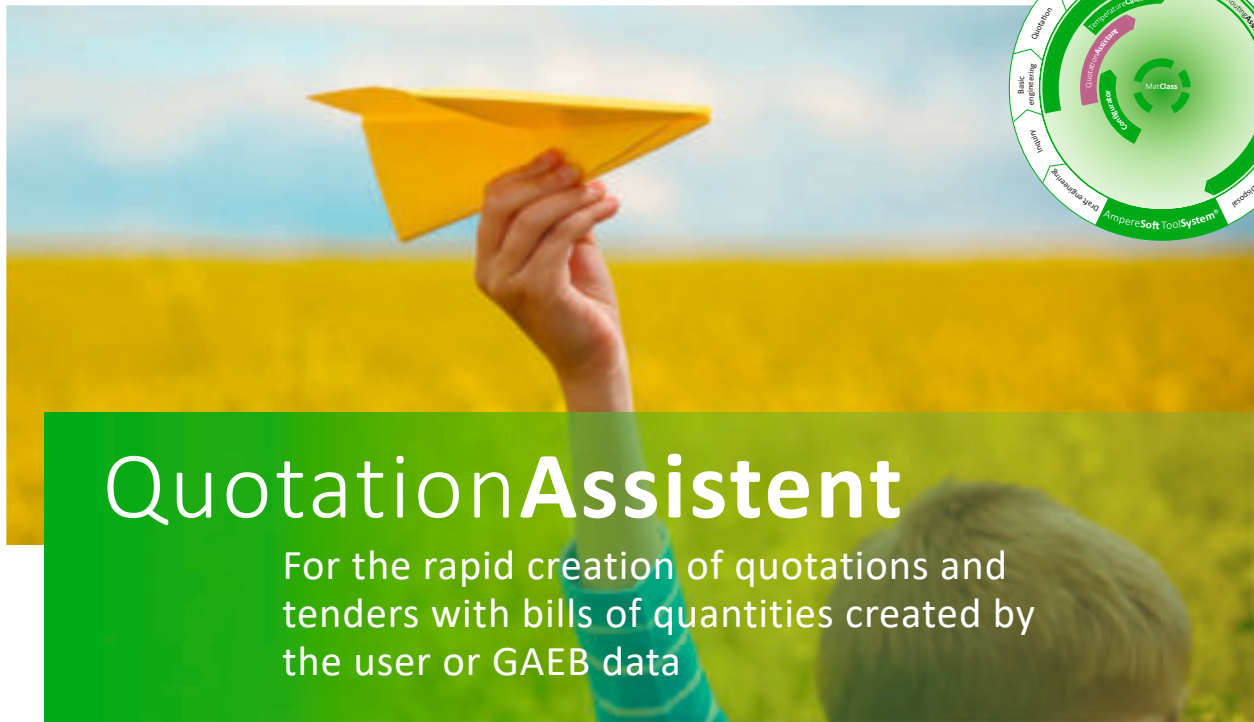
Quotation**Assistent**

For the rapid creation of quotations and tenders with bills of quantities created by the user or GAEB data

Creating structured quotations

Define the structure of your quotation with the bill of quantities you created yourself or by reading in a GAEB file.

Flexible calculation and comparison

Calculate quotations flexibly, whether with sur-charges or discounts, wage and material costs, or mounting times as an option. You can also create different quotation variants in a project and compare them.

Efficiency up to the complete quotation

The fast and clear creation of quotations and the easy handling of *QuotationAssistant*, for example, by assigning material from *MatClass* by drag and drop, save a lot of time in the processing of inquiries and prevent unnecessary costs.

Consistency in the process with the *AmpereSoft ToolSystem*

With the *QuotationAssistant* integrated in the *ToolSystem*, the project data can be transferred from the configurators directly to a quotation calculation. For an order you simply apply the data from the quotation calculation to the detail engineering in *ProPlan*.
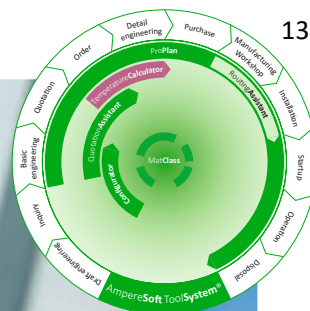
Temperature**Calculator**

Produce standard compliant verifications on temperature in the switchgear assembly in accordance with DIN EN 61439-1

Standard compliant power loss calculation

The *AmpereSoft* CAE independent and manufacturer neutral *TemperatureCalculator* provides you with standard compliant verifications on temperature rise in the switchgear assembly in accordance with DIN EN 61439-1.

Flexible calculation methods

DIN EN 61439-1 considers two different calculation methods:

✔ 10.10.4.2 Rated system current (InA) not exceeding 630 A – comparison of the cabinet heat loss ability to the installed power loss effective at the same time

✔ 10.10.4.3 Rated system current (InA) not exceeding 1,600 A - temperature calculation (as per IEC 60890)

Both calculation methods are covered by the *TemperatureCalculator* thanks to the ability to create and manage the structure of the electrical circuit and the location.

Reliable and easy to understand calculations

A large proportion of the heat inside a cabinet is generated by the wiring. This information is also taken into account in the calculation. Only with an equipment-related and load-dependent calculation with verifiable data (source) can a proper verification of temperature rise in the switchgear and controlgear assembly be achieved.

Consistency in the process with the *AmpereSoft ToolSystem*

The integration of the T*emperatureCalculator* in the *ToolSystem* enables you to transfer project data directly from configurators and the detail engineering of *ProPlan* in order to create standard compliant design verifications for the planned switchgear assembly in accordance with DIN EN 61439-1.

Our Seminars—Become a Master of Our Products

Thanks to the fantastic training seminar I soon became a ProPlan professional!

We offer the following seminars:

ProPlan Basic seminar

Learn the *ProPlan* functions for creating your electrical documentation effectively. — The seminar lasts four days.

ProPlan Expert seminar

Deepen your knowledge of what you have already learned about *ProPlan* functions in order to optimize the process chain. — The seminar lasts three days.

ProPlan Update seminar

This seminar provides you with information on the new functions of the latest *ProPlan* and *MatClass* version. — The seminar lasts one day.

QuotationAssistant Basic seminar

Get acquainted with the *QuotationAssistant* functions for creating quotations and tenders with your own bills of quantities or GAEB data. — The seminar lasts one day.

QuotationAssistant Expert seminar

Deepen your knowledge of *QuotationAssistant* functions for the administrative setting of the basic data. — The seminar lasts one day.
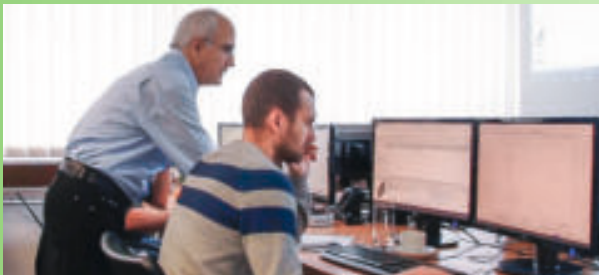
Dates and topics

Further detailed information about our training seminar program can be viewed at www.amperesoft.net/index.php/en/trainings.

In-house seminars

We will be glad to train you together with your colleagues in-house at your company. We can provide you with a specific quotation on request.

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