ELCAD

# The power of 7

## ELCAD 7 - Functions, Scaling, Options

*Let's make engineering easy!*

AUCOTEC

# Functions, Scaling, Options

## Performance

Electrical engineering at its best: with ELCAD 7, you obtain a professional CAE system, scalable from demanding project planning in mechanical engineering to the engineering of process control plants. ELCAD 7 efficiently supports the entire workflow in the project planning of electrical engineering tasks.

The powerful CAE system encompasses:

### Basic Functions and Operation

An up-to-date user interface according to the current WINDOWS style is nowadays a matter of course. The fact that operating elements resemble the widely used applications of the Office world considerably facilitates the handling of ELCAD 7; you do not have to learn how a dialog is operated, you know it already. However, the demand on the ergonomic design of the ELCAD 7 software greatly exceeds the handling of individual elements. ELCAD was after all the first E-CAE system to run at all under WINDOWS. Based on the longest experience with graphic user interfaces, we at AUCOTEC have designed the handling of ELCAD 7 so that for each operating step the optimum combination of information display, fast data manipulation and intelligent support is guaranteed at any time. For us intuitive handling means more than look & feel. A many-thousandfold experience with the application together with a knowledge of the engineering process results in design tools that are optimally "handy". Object-oriented design in its best sense means purposively offering, from a broad range of possible options, precisely the functions required by the respective object and the current editing situation. Tree views for hierarchical structures, table editing as in a spreadsheet for the fast manipulation of large amounts of data, and object-dependent menus that are also constantly available in graphic editing are just a few of the components of an engineering tool that sets standards in ergonomic software design. ELCAD 7 combines good looks with intelligence.
Freely configurable data interfaces conforming to the WINDOWS standard support the bi-directional data exchange in the CSV, XLS and MDB formats or via ODBC-drivers.

- ELCAD 7 marks the latest stage of "ergonomic design" for E-CAE
- Free adjustment of the interface with respect to window positions, menus and icon bars
- Multilingual of data and user interface
- Graphics output and printer integration conforming to WINDOWS, thus executable in any current hardware environment
- Predefinable procedures for automatic operation (batch processing)
- Connectivity via ODBC -MDB -XLS -CSV

## Graphics Editor

The graphics editor is integrated into ELCAD. It is a tool designed especially for use in schematic methodology, oriented towards symbol-oriented work. The functions comprise the creation of circuit diagrams, hydraulics and pneumatics diagrams, PM&CT diagrams, electronics diagrams, general diagrams and free graphics. Data storage is effected in a project-oriented manner, the project size being limited only by the hardware.

**Functions**

- ➜ Online (real time) evaluation of the cross-references of relays and contacts, input and output cards, potentials, connector symbols and any other device symbols displayed separately.
- ➜ Options: Automatic online operation when placing a symbol.
- ➜ Hierarchically structured symbol selection with graphic symbol display and search function.
- ➜ Automatic, user-defined item numbering according to sheet and circuit path, sheet and grid square or automatic incrementing of the items within a device group.
- ➜ Distinction between graphic lines, electrical and mechanical connections.
- ➜ Automatic connection in horizontal or vertical direction. Freely definable multi-connections.
- ➜ Automatic opening or closing of the electrical and mechanical connections at symbol connection points.
- ➜ Plausibility tests for duplicate assignment of item designations, incorrect or excessive assignment of relays or other devices displayed separately such as PLC cards.
- ➜ Extensive test functions offer the user information on the current state of the drawing.
- ➜ Full display of the plant structure according to DIN, i.e. with higher-level designation, function group, location designation and device identifier, variable specification of the unambiguousness properties.
- ➜ Logical inheritance of the globally valid plant, function and location designations from the writing field to the devices.
- ➜ Online Info function for the querying and direct assignment of existing plant, function and item designations and of potentials and connector symbols.
- ➜ Item and terminal editor for centralized editing over several sheets of existing items and terminal strips including terminal numbers; definition of idle or spare terminals, navigation from the editors to the diagrams.
- ➜ Multiple connectors in terminals (multi-tier terminals).
- ➜ Free definition of the terminal sorting.
- ➜ Navigation function for direct page change on the basis of the cross-references of devices or potentials.
- ➜ Identification function for displaying all of the references belonging to a device, including direct selective navigation.
- ➜ Automatic assignment of contact numbers for devices displayed separately, such as relay coil and relay contacts.
- ➜ Automatic incrementation of terminal numbers (can be disabled).
- ➜ Automatic inheritance of item designations for aligned terminals (can be disabled).
- ➜ Operation via a freely configurable toolbar in addition to the operation via standard operating elements.

- ➜ Translate text management permits the creation of entirely language-neutral schematics and the rapid, central switchover between different schematic languages. Up to four languages can be displayed simultaneously.
- ➜ Drawing management with up to five hierarchical naming levels with 32 characters each for sheet naming, blanks and special characters being permissible. Possibility to repeatedly use the same page number for different sets of drawings within a project. Possibility to output the diagram directory.
- ➜ Output option for item overviews, terminal and strip list surveys, where the terminal and item lists can be output both on a printer and on storage media in arbitrary data formats (e.g. XLS). The terminal surveys contain the terminal numbers, the display location, internal and external destinations.
- ➜ Graphics output and global manipulations via batch processing for the entire project or selectively for individual pages.
- ➜ Graphics output via standard Windows drivers as well as via internal vector drivers for the most common printer languages. Graphics output freely scalable.
- ➜ Copying functions for copying entire projects, project parts, individual pages or sheet sections (including external ones). For page-related copying there are moreover the options, whether to copy with or without resetting the texts to the default values.
- ➜ Editing and copying functions can always be related to the entire sheet, to X, Y or window sections. Options for selective editing according to certain criteria such as missing item designations or missing part numbers, and also selectively according to specific symbol types or symbol names.
- ➜ You can simultaneously access different 10,000 symbols per project.
- ➜ Assignment of parts from the parts database. Search in the parts database via freely definable search keys.

- ■ Symbol-oriented graphics editor optimised for the creation of schematics.
- ■ Online references of devices, potentials and connector symbols displayed separately
- ■ Navigation over all logical references of the project
- ■ Internal and external copying on various levels of abstraction.
- ■ Library of partial circuits, arbitrarily expandable

## Revision Management

Electro-technical documents are not just a number of drawing sheets for which it would be sufficient to record the date of the last modification. They are characterized by a high degree of cross-linking with each other. A modification in a sheet may result in changes of references in other sheets, which are of course automatically attended to by a high-end system such as ELCAD. The automatic revision management in ELCAD 7 recognizes all modifications in documents - i.e. the ones manually executed, but also the automatically generated ones or those that result from table editing - at the push of a button. Thus you can leave the decision whether a new revision of a sheet has to be created to ELCAD without qualms. On request, a document is created that clearly marks the modifications compared to an arbitrarily chosen reference state. Of course the identification of revisions can be fully adjusted to your company standards. This is the well-known ELCAD philosophy.

## Symbol Editor, Symbol Library IEC/EN

The symbol editor enables the comfortable, menu-controlled creation of new symbols and forms as well as the modification of existing symbols. For ease of operation, the handling of the symbol editor is identical to that of the graphics editor.

**Functions:**

- ➜ Creation of symbol graphics with basic graphics functions and text placeholders.
- ➜ Creation of symbol logic with a dialog editor.
- ➜ Possibility to automate symbols with the functions Integrator (string linkage), Calculator (calculation) and IF-THEN-ELSE loops and system variables.
- ➜ Definition of cross-reference logic.
- ➜ Management of the symbol libraries.
- ➜ List of symbols with date and time of last storage.
- ➜ Definition of variable symbols whose graphics adapt automatically according to logical symbol contents.

The IEC symbol library contains about 1,000 symbols conforming to:

| | |
|---|---|
| - EN 60617 (IEC 617)-2 to 12 | Graphic Symbols |
| - EN 61082 (IEC 1082)-1 to 4 | Documents for Electrical Engineering |
| - EN 61346 (IEC 1346)-1 | Structural Principles |
| - EN 61346 (IEC 1346)-2 | in part, Document Identifiers |
| - DIN 6771-5 | Writing Fields |
| - IEC 750 + 204-2 | Object Designation |

The data delivered for ELCAD 7 contain, apart from these symbols conforming to IEC, device master data and more than 65 prefabricated macros. Taken together, the completely documented sample project supplied with ELCAD comprises over 300 pages including all of the derived documents.

## Terminal Diagram Module

The terminal diagram, just like the graphic terminal connector diagram, are derived documents that represent the terminals placed in the circuit diagram with their pertinent cables and destination devices. The terminal connector diagram is used for the representation in the form of a table. The graphic connector diagram integrates the cables and represents the external destination devices as symbol graphics.

**Functions**

- ➜ Representation freely adjustable, horizontal and vertical display.
- ➜ Representation of strip designator, terminal number, terminal comment and display location of the terminals in the circuit diagram.
- ➜ Representation of overall item designation, connector designations, device comment and part number of the internal and external destination devices, cable name, number of cores, core cross-sections, core numbers and core colours (and so forth).
- ➜ Wire and strap bridges.
- ➜ Several destinations per terminal possible.
- ➜ Automatic page break at cable table or terminal mounting rail overflow.
- ➜ Page break adjustable for plant, function and/or location change.
- ➜ Graphic of the external devices in the connector diagram freely definable (divergent from circuit diagram).

## PLC Module, Assignment List (ZL) Module

The circuit diagrams display the inputs and outputs respectively of the PLC. The absolute and symbolic address as well as the function text can be entered in these symbols. The Assignment List Module (ZL module) enables the bi-directional exchange of this information between the PLC programming device and the ELCAD system.

**Functions**

- ➜ Online management of the absolute and symbolic PLC addresses and the comment.
- ➜ ASCII interface for all PLC systems with ASCII interface.
- ➜ Assignment list editor with syntax test for the creation or maintenance of the address lists.
- ➜ List output of the assignment lists.
- ➜ Applicability of translate files (multilingual option) in the assignment list comments. For ASCII output, the data are automatically converted.
- ➜ The symbols required for working with the ZL module are included in the standard delivery.

## Multi-user Capability

ELCAD generally offers several users at a time to simultaneously work in a project. This does not require a special structure or a partitioning of the project. ELCAD automatically manages all access attempts and prevents collisions or mutual blockage. The data of the project always remain logically intact and consistent.

## Documentation Module with Fixed or Free List Structure

The ELCAD documentation module is an integral part of ELCAD and enables the fully automatic creation of parts and device lists, contents tables, terminal parts lists and wiring lists. All lists can be edited directly via a tabular representation, and they offer the possibility to adopt all of the changes into the diagrams.
Moreover the documentation module offers the integration of device master databases. The entire maintenance of the device master data is carried out directly in ELCAD with this module. Thus, all device data are accessible from the graphics editor. The documentation module is delivered in two configurations that differ only in the degrees of freedom of the list structure:

- ■ With the documentation module with **free list structure** you can freely define which attributes are used as columns in lists. Thus ELCAD can be adjusted to arbitrary company standards or customer demands.
- ■ With the documentation module with **fixed list structure**, preset definitions of list structures are used.

Both variants can be combined such that some users have access to free list definitions for carrying out adaptations whereas others only use these defaults by employing fixed list structures. In this way a deliberate restriction to company standards can be ensured.

## Cable Planning

The module Cable Planning is divided into three main functions:

- Cable run planning
  - Cable representation in a one-line schematic, where a connection may represent an individual cable or a cable run containing several cables.
  - Graphic listing of the cables belonging to the cable run in the cable run diagram.
  - Tabular editing of the cable runs.
  - Length definition

- Cable Planning
  - Management of the cables in tabular form with hierarchical substructures for each individual core.
  - Cable and core selection from the graphics editor via search function.
  - Check for duplicate use of cores, excessive allocation of cables and incorrect local allocation of the cables.

- Switching box
  - The jumper wires cores present in the circuit diagram can be used to generate switching lists. Editing is done selectively according to location and items in relation to certain switching cabinets.

**Report functions**

➜ Output of cable lists, switching lists and cable run surveys optionally as list, graphic or in arbitrary file formats (e.g. XSL).
➜ Free definition of the output formats.
➜ Use of formulas and constants.
➜ Total and subtotal calculation.
➜ Specification of the criteria for block formation and page feed.
➜ Free definition of the output sorting (five sorting levels).
➜ Free definition of the output filters.
➜ Quantity count.
➜ Position and page numbers.
➜ Free texts for sheet headers.
➜ Use of translate files.

## Cabinet Layout

The module cabinet layout supports the interactive creation of layout diagrams. For this purpose it automatically offers, within the familiar graphics editor, the layout symbols to be placed for the electrical cabinet. This is based on the data from the device list previously created, which can be preselected according to any criteria (e.g. location).

**Functions**

- ➜ Automatic selection of the correct layout symbol on the basis of the part number or of a variable default symbol.
- ➜ Automatic size adaptation of the symbol, taking into account the scale of the sheet and the unit of measurement.
- ➜ Cross-referencing capability and adoption of comment and item designation from the circuit diagram.
- ➜ Associative dimensioning function.

## PM&CT Design

A range of functions developed especially for planning and projecting PM&CT systems offers always an optimum overview, from the acceptance of process engineering data to the creation of complete PM&CT documentations.

**Functions:**

- ➜ Specification of devices and process engineering equipment and access to device master data
- ➜ Efficient creation of signal and loop diagrams via typicals and "model tags"
- ➜ Hook up and assembly planning with material quantity calculation
- ➜ Online capability of all instrumentation and tag data; Database-related engineering of plant data
- ➜ Acceptance of process engineering data via standard interfaces
- ➜ Free structuring of plants and locations
- ➜ Cabinet planning and allocation via cabinet wiring lists
- ➜ Documentation tool to create function diagrams with signal tracking and check functions; free selectable representation modes of logic symbols

## Viewing Mode / ELCAD*view*

ELCAD*view* is used as an intelligent documentation and maintenance tool with easy handling in the fields of services and final customers.
ELCAD*view* offers plant operators Read-Only Access to the entire project documentation. This enables navigation within the project or the setting of markings that can then be evaluated.
ELCAD*view* can be called by external applications for the targeted indication of malfunctions.
By integrating external documents, such as maintenance and assembly instructions or product data sheets into the project documentation, ELCAD*view* offers optimum solutions for service and maintenance.
These functionalities are an integrated component of the ELCAD/AUCOPLAN family. They are automatically activated, if the user management within a project is set to Read-Only and a Viewing-Licence is available.

## Fluid Customizing

For ELCAD users whose machine and plant project planning includes hydraulic components, Fluid Customizing constitutes an optimum supplement. The ELCAD Fluid Customizing solution consists of the appropriate user environment with a corresponding toolbar, a library, the documentation of this solution and a Fluid master database including a sample project.

Fluid Customizing covers all important requirements for the project management of fluid-bed technique plants: The elementary drawing functions are connected with a large number of automatisms and logical functions. Project management distributed over several pages, automatic connection, various test routines and navigational aids facilitate everyday work. Evaluations for use in manufacturing and maintenance are created at the push of a button. Thus there are correct parts lists and replacement/wearing parts lists, hose pipe and casing lists, lubrication intervals etc. at all times.

## AUCOTEC Data Service

The AUCOTEC Data Service offers ELCAD users the desired parts data in ELCAD as needed, and that in standardized form and immediately usable. All CAE-specific information is transferred to the appropriate place in the CAE data range without additional effort on the part of the user– the component is usable in a logically correct way through all functionalities of the tool.

This Internet service makes all data available via a server, is accessible anytime and contains a data pool that is continuously expanded and updated.

Functions:

- ➜ The parts data are up to date, are standardized and can be used immediately in the E-CAE system.
- ➜ The CAE-specific information is transferred to the appropriate place in the CAE data range without additional effort on the part of the user.
- ➜ The Internet service supplies all CAE data via a server.
- ➜ This Internet service is available at all times and contains a data pool that is constantly enlarged and updated
- ➜ Standardization of the data as exemplified by the AUCOTEC products - the user has access to a uniform and documented data format
- ➜ If required, the data format can be adjusted to comply with company standards.
- ➜ The components are offered in a selectable, structured Explorer view, thus ensuring selective download

## Hardware Configuration Link

The basis of this integration is a format description that defines the amount of data and objects that are of equal importance for ELCAD and hardware configuration/PLC management. Due to the hierarchical structure and the system-independent data structure, a standard format based on XML is the obvious choice for describing an automation system, which has been integrated in ELCAD.
The format is presently among others supported by the systems suppliers Siemens (STEP 7/HW-Config) and Beckhoff (TwinCat) and is thus the basis for the coupling of the AUCOTEC products with the HW configurators.

The bidirectional coupling of the hardware configuration link is defined as follows:
The interface transmits the quantity structure of the I/O addresses to the HW configurator.
The modules required are defined in the configurator as a function of the quantity structure.
The modules and their HW channels are assigned the inputs/outputs of the quantity structure. Simultaneously the addresses are automatically assigned.

The completed automation concept is transmitted to ELCAD as XML file. The corresponding items are created from the system information.
The assignment of the symbolic addresses to the I/O modules can be evaluated from the information in the transfer file and is used for the automatic creation of references between I/O card and single-bit representation. During the transmission of PLC data back to ELCAD the built in delta management keeps track of all modifications and puts them under your control.

## ELCAD Studio

With the ELCAD Studio, modular design on the basis of standardized function modules is directly integrated into an E-CAE system. With an ELCAD template project, reusable module can be predefined or put together from already projected machines and plants. These standardized "construction kits" contain, apart from the circuit diagrams proper, all information concerning I/O assignment, device definitions and specifications as well as the external documentation required. In a working project these templates can be accessed via search keys or filter criteria and copied any number of times in a single operation.
At the same time ELCAD Studio also offers a variant management option. Function-oriented standard modules must be defined only once, their special – application-dependent – components and parameters are automatically assigned on the basis of the variant selected. This renders the usual maintenance and setup times superfluous. Variants can also be defined and changed retrospectively.
If the modules to be used in a plant are put together with an external tool, ELCAD Studio offers an intelligent delta management. Changes and differences with respect to the current data stock are determined, the import and export can be carried out in a controlled and transparent way.

Functions:
- ➜ Definition of reusable modules for faster project creation
- ➜ Variant management with automatic assignment
- ➜ Delta management for error-free data import and export
- ➜ Modular, object-oriented design in alphanumeric or graphic editing view
- ➜ Object changes are updated only once and online for all representations
- ➜ Device definition can be done in a time-saving manner without creating the circuit diagram
- ➜ Simple tabular editing of all structure and device data is possible
- ➜ Online cabinet concept with direct placement from a device tree view into the cabinet; all devices not placed are visible at a glance in the layout view
- ➜ Easy integration of external devices with all data formats
- ➜ Central change management

# Scaling

| Performance | ELCAD*view* | ELCAD-Start | ELCAD-Edit | ELCAD-Fluid (4) | ELCAD-Plus (1) | ELCAD-Professional (2) | AUCOPLAN-Basic | AUCOPLAN-Full Version |
|---|---|---|---|---|---|---|---|---|
| Basic Functions, Operation | – | X | X | X | X | X | X | X |
| Graphics Editor | – | X | X | X | X | X | X | X |
| Revision Management | – | X | X | X | X | X | X | X |
| Symbol Editor | – | X | X | X | X | X | X | X |
| Terminal Diagram Module | – | – | X | – | X | X | – | X |
| PLC Module | | | | | | | | |
| Multi-User Capability | | | | | | | | |
| Doku Module, Fixed Structure | – | – | – | X | X | X | – | X |
| Doku Module, Free Structure | – | – | – | – | – | X | – | X |
| Cable Planning | – | O | O | – | O | X | – | X |
| Cabinet Layout | – | – | – | – | O(3) | X | – | X |
| PM&CT Design | – | O | O | – | O | O | X | X |
| Viewing Mode | X | O | O | O | O | O | O | O |
| Fluid Customizing | – | – | – | X | O | O | O | O |
| AUCOTEC Data Service | – | – | – | – | O | O | O | O |
| Hardware Configuration Link | – | – | – | O | O | O(5) | O | O |
| ELCAD Studio | – | – | – | – | – | O | – | – |

X = Included in the package
O = Optionally available for the package
– = Not available for the package
(1) = There is an ELCAD-Plus version available with a reduced number of sheets:
A number of 50 circuit diagram sheets can be used for projecting, the number of derived documents is not limited.
(2) = There is an ELCAD-Professional version available with a reduced number of sheets:
A number of 50 circuit diagram sheets can be used for projecting, the number of derived documents is not limited.
(3) = Prerequisite for ELCAD*fastwire*
(4) = ELCAD-Fluid is a sheet-limited version:
Project planning can be done with maximally 50 sheets of circuit diagrams and an unlimited number of derived documents.
(5) = Bidirectional only in connection with ELCAD Studio.

# Options

## ELCAD*modul*

ELCAD*modul* enables the fully automatic project generation by pre-installing company-specific applications. The commands generated by this external application are automatically converted to project documents. Post-editing with ELCAD is possible without limitations. By modular organisation of the basic original drawings an extremely high degree of automation can be achieved.
Can be used from ELCAD-Start (limited function range) on.

## ELCAD*archiv*

Following successful planning, ELCADarchiv saves the entire variable data stock of the project in parallel with the drawings, diagrams and lists created. This includes the symbols of the working symbol library actually used, the standard texts used and the ELCAD configuration used for the project. In case of re-archiving, e.g. for a plan modification, the designer thus always has the relevant data at his disposal. ELCAD*archiv* is contained in ELCAD-Professional and AUCOPLAN.
Can be used from ELCAD-Start on.

## ELCAD*fastwire*

ELCAD has always fully automatically analysed the entire logical wiring of all components on the basis of the information in the circuit diagrams. Likewise the mechanical layout diagram of cabinets is not new in ELCAD. With ELCAD*fastwire*, ELCAD 7 combines both areas of information: On the basis of the logical wiring information, the wiring runs in the cabinet layout can be defined individually or assigned automatically and optimised for routing. This procedure offers the optimum manufacturing preparation:

- Automatic length determination of all wires
- Transfer to the wiring list
- Handing-over to automation for wire setting
- Management of cross sections, colours, numbering
- Offering and "ticking off" of all wire connections in manufacturing
- Support of the cabinet assembly

Can be used from ELCAD-Plus on. Prerequisite is the enabled Cabinet Layout functionality.

## AUCOTEC*view*

AUCOTEC*view* is the tool for the documentation of your customers. The changes following the delivery of the electrical documentation to the ultimate customer must normally be post-edited in the documentation at high costs. By contrast, the costs for the creation of the documentation following storage of a project on a CD with AUCOTEC are low.

Other advantages are the low expenditure for sending digital storage media and the safeguarding of data consistency since later manipulation of the CD is technically impossible. Moreover you attain a unique position vis-à-vis your competitors by using AUCOTEC*view.*

By supplying the IT standard PDF (Portable Document Format) in form of the Acrobat Reader, the diagrams are displayed graphically and are available for output if required. In addition, logical contents such as potential chains, cross-references, references between contactors and contacts etc. are offered. This can be used to fully exploit the possibilities of intelligent navigation. The shopping basket function provides your customers with a direct ordering function. With this function, a spare parts or service request can be sent to you directly from the documentation tool AUCOTEC*view.* Via E-Mail or other media you will receive the specific requirement information from the machine and plant operators.

In AUCOTEC*view* you will find a comfortable automation interface for the connection to several diagnosis and visualization systems. Furthermore, the integration into your EDM environment is achieved via this interface.

Can be used for all ELCAD projects independent of the ELCAD bundle used.

## Integration and Automation Components

**Command language**
Interpretive API for customer-specific evaluation and automation solutions. For the use of the ELCAD command language you need no special development level and little experience in software development.
Can be used independently of the ELCAD bundle used.

**Data Server technology**
Permits automatic access by external applications to all project planning and master data in ELCAD. The data exchange is effected in the CSV, XLS and MDB formats and via ODBC-drivers. The Data Server technology permits the automatable data exchange of alphanumeric data in various standardised formats. No special operating system components are required, nor is there any interference with the external applications or data.
Can be used from ELCAD-Plus on.

**SAP PLM-integration**
With its Communication Framework (CF), AUCOTEC offers universal integration of the CAE systems ELCAD, AUCOPLAN and SAP R/3. The CF is uncoupled from the CAE systems, is independent of release status and can be adjusted to the Company workflow by means of Basis Script.

The standard performance:
- ➜ Bi-directional adjustment of material master data
- ➜ Adjustment of materials and/or order parts lists
- ➜ Creation and linking of document info sets for entire CAE projects or individual documents
- ➜ Reciprocal processing of tags (CAE) and technical places (SAP)

CF is based on the current SAP technologies (RFC, BAPI, IDoc) as well as on COM. AUCOTEC is CSP partner of the SAP AG.
Can be used from ELCAD-Plus on.

**EDM/PDM integration**
EDP/PDM coupling offers a flexible integration capability for various EDM/PDM systems and provides functions for archiving, management and project editing. It permits seamless control of ELCAD by an EDM/PDM system.
Can be used for all ELCAD bundles.

## Graphic Interfaces

**DXF/DWG on the logical level (symbol- and attribute-oriented)**
Interfaces for data exchange including logic (symbols, attributes). Interface for supporting the interdisciplinary data exchange e.g. of site plans, layouts or flow diagrams for process engineering.
Can be used for all ELCAD bundles.

**VNS with diagram intelligence**
Bi-directional exchange of graphic and logical data such as symbols, attributes and connections via the neutral interface VNS.
Can be used for all ELCAD bundles.

**TIFF for transfer to archiving systems**
Export capability of the graphic data in the TIFF format. Supports automatic data storage in archiving systems and permits integration into the EDM integration component.
Can be used for all ELCAD bundles.

**PDF (single page) for transfer to archiving systems and PDF (multipage) for the customer documentation.**
In the single page format for transfer to archiving systems or information systems. The PDF multipage format comprises the starting point for the documentation via the project structure for the final customer documentation.
Can be used for all ELCAD bundles.

AUCOTEC

AUCOTEC AG
Oldenburger Allee 24 · D-30659 Hanover
Telephone +49 511 61 03-0 · Fax +49 511 61 40 74
www.aucotec.com

07/04