

# Solutions

Engineering Base

ELCAD

RUPLAN

AUCOPLAN

## Particularities:

- The component 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 AUCOTEC Data 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



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## Description:

### **AUCOTEC Data Service – AUCOTEC offers component data via an Internet service**

#### **Situation:**

Component data belong to the basic information in electrical engineering and are thus a prerequisite for the range of uses in Electrical CAE systems.

Unfortunately, to this day all efforts to standardize information concerning components from all manufacturers have not met with the desired success, and thus the procurement of the data required for the engineering systems remains one of the crucial problems for the efficient use of these systems

The reasons for this are obviously not - as frequently stated- based solely on the lack of willingness on the part of the component manufacturers to agree upon a transparent and thus comparable format, but are also due to the complex and vastly differing demands placed on these component data by the E-CAE systems themselves.

Thus it is only logical that E designers have to invest more time in the system-dependent logical representation of a device in agreement with the rules set by the E-CAE system than in the creation of alphanumeric device descriptions of the manufacturers of the engineering and/or PPS systems. Concerning this data record-oriented manufacturers' information, sufficient offerings are available both from the manufacturers themselves and from various service providers (by means of different applications and standards), since the amount of data per component is easy to grasp.

However, a component thus characterized is not yet described in way making it usable in the E-CAE system. Usually the work for the E designers actually starts at this point. The appropriate graphic representations (symbols) for the various representations of the device (circuit diagram, layout plan, overall schematic, ...) must be created.

- Definition of the assignments to additional or accessory parts
- Specification of the connector logic for the wiring evaluation

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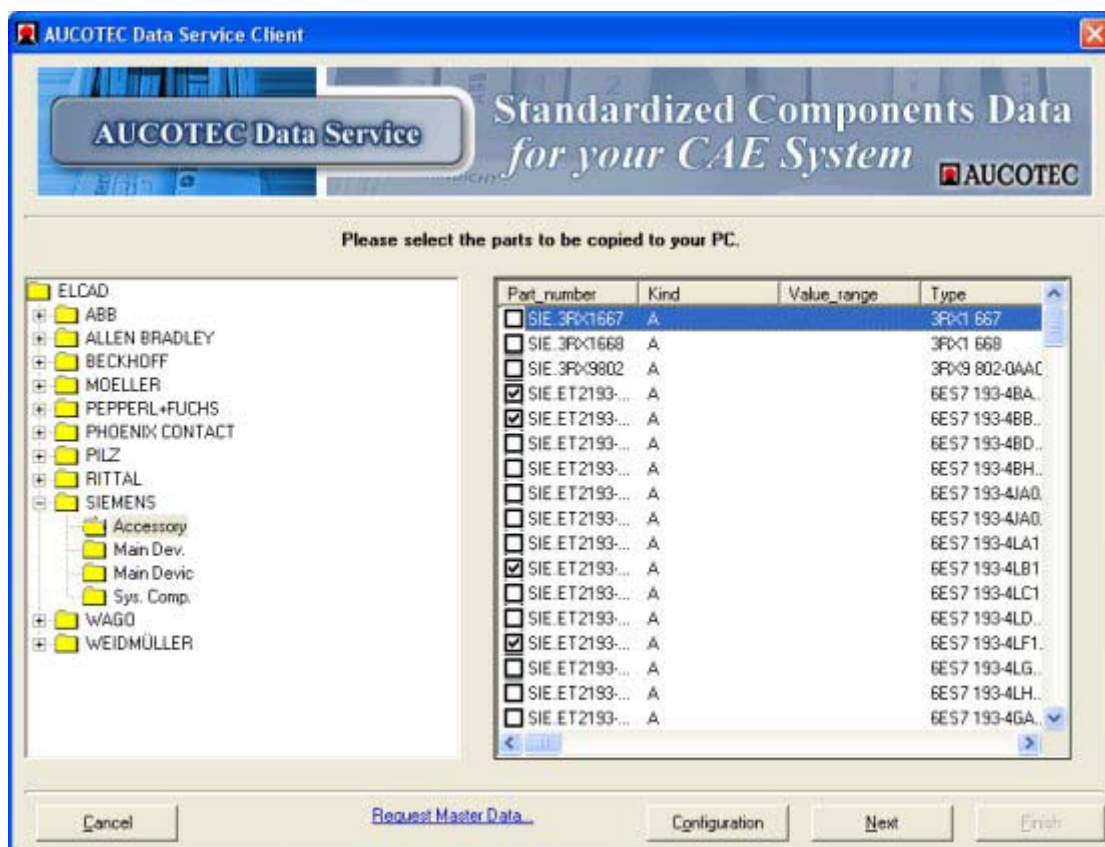
## Description:

- Storage of the logic for derived documents (e.g. item lists, graphic connector diagrams, ...)
- Storage of the rules for linkages and references to devices represented in a distributed manner
- Definition of assignments to external documentation (e.g. a Note on Assembly from the manufacturer)

All in all a data package must be created that at present is not covered in its entirety by any standard - here every E-CAE system writes a "system standard" of its own, which is verifiably bound up with the logic of the tool and will remain so in the future.

The effort required for this work on the part of the users depends on the complexity of the component as well as the kind and scope of the documentation and evaluations to be created; it may amount to three workdays per component.

The diversity of the available electric components and their accessories is immense. The number of components authorized by a given company and usable by the E designers at any given moment is however comprehensible and should, depending on the size of the company and its target markets, on average amount to 5000 parts.



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## Description:

### Concept:

The aim of a solution should be to make the desired component data instantly available to the users of the E-CAE systems in a standardized manner and immediately usable in the E CAE system. All CAE-specific information should be transferred to the appropriate place in the CAE data range without additional effort on the part of the user, and the component should be usable in a logically correct way through all functionalities of the tool.

This aim can be reached only by using an Internet service that supplies all of the CAE data to the users by means of a server, which is available at all times and accesses a data pool that is continuously enlarged and updated.

### Solution:

AUCOTEC AG has realized this concept and presented it for the first time at the Hannover Messe Industrie in April 2003. From this moment on the "AUCOTEC Data Service" was online and supply the users of the AUCOTEC products ELCAD/AUCOPLAN 7 with the desired components.

### The component data

To start this Internet service, in cooperation with the users the AUCOTEC team has put together a component spectrum containing predominantly input/output components and field bus devices of the manufacturers Siemens (Simatic - S7-300, S7-400, ET200 M/S/X/iS), Beckhoff (field bus components), Allen Bradley (distributed I/O), Phoenix Contact (I/O systems), Wago (series 750), Weidmüller (SAI field bus components), Pilz (SafetyBus) and Rittal (cabinet devices).

This selection of devices is expanded by direct requests from AUCOTEC customers. For this purpose the Internet service will contain a "Request box" by means of which users can communicate their wishes concerning extensions. AUCOTEC provides the maintenance and continuous expansion of this data pool. AUCOTEC likewise provides standardization of the data as exemplified by the AUCOTEC products; the user thus has access to a uniform and documented data format he is familiar with and can if needed accommodate to the specific needs of his company. The component data consist of an alphanumeric part (technical description data) and the graphic part. The graphic description encompasses all display variants of the component in the system and takes the appropriate IEC standards into account if available. All components are subject to a release test that envisages the actual use of the component in all representations such as e.g. in ELCAD.

The data are adapted to the environmental data belonging to the AUCOTEC products such as list configurations, reports and of course interface solutions such as the Hardware Configuration Link between ELCAD and STEP 7.

### The Internet service

In all, the AUCOTEC Data Service consists of several components. The basic device is a web server that manages the data in an MS SQL server database. This web server is addressed via a web client installed locally at the ELCAD/AUCOPLAN 7 workstations using an Internet connection.

Web server and client are advanced MS .NET applications that organize the data traffic via the Internet using XML routines. MS .NET is an MS technology designed for this kind of application and enables client/server Internet applications. The latest versions of the AUCOTEC products have been supplemented with the corresponding XML interfaces.

If the function is called in the CAE system, the client inquires all of the components available at the server and offers them for selection in a structured and selective manner. By marking components, the user can then decide which ones he wants to copy into his CAE environment using which language variant. Once components have been marked, the client makes the corresponding requests, and the server makes them available in the XML format. Within the AUCOTEC products, these data are then transformed into the respective format and are immediately available to the user.

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## Description:

The concept can also be transferred to other enterprises: thus there is already an interest among AUCOTEC customers to use this modern Web application for the central management of components in the Intranet.

## Summary:

With this unique offering from AUCOTEC AG, up-to date component data are going to be available for immediate use at any place, any time. Here, AUCOTEC offers verifiable customer benefits: instead of the time-consuming simultaneous creation of a comprehensive description for an individual component by many users (a component is used simultaneously by many companies), i.e. quasi-parallel work done by AUCOTEC customers with similar results, the effort is reduced to the one-time creation of the necessary data by an AUCOTEC specialist.

Smooth downloading of the data is ensured by a modern .NET application that offers the components in a selectable, structured Explorer view and guarantees selective downloading. In this context the data are automatically copied into the desired master data ranges and can be used immediately.

In realizing this solution by means of the most advanced software technology, AUCOTEC AG once again underscores its role as a leader in technology by accommodating trends in software development and using them for solutions that benefit its customers.