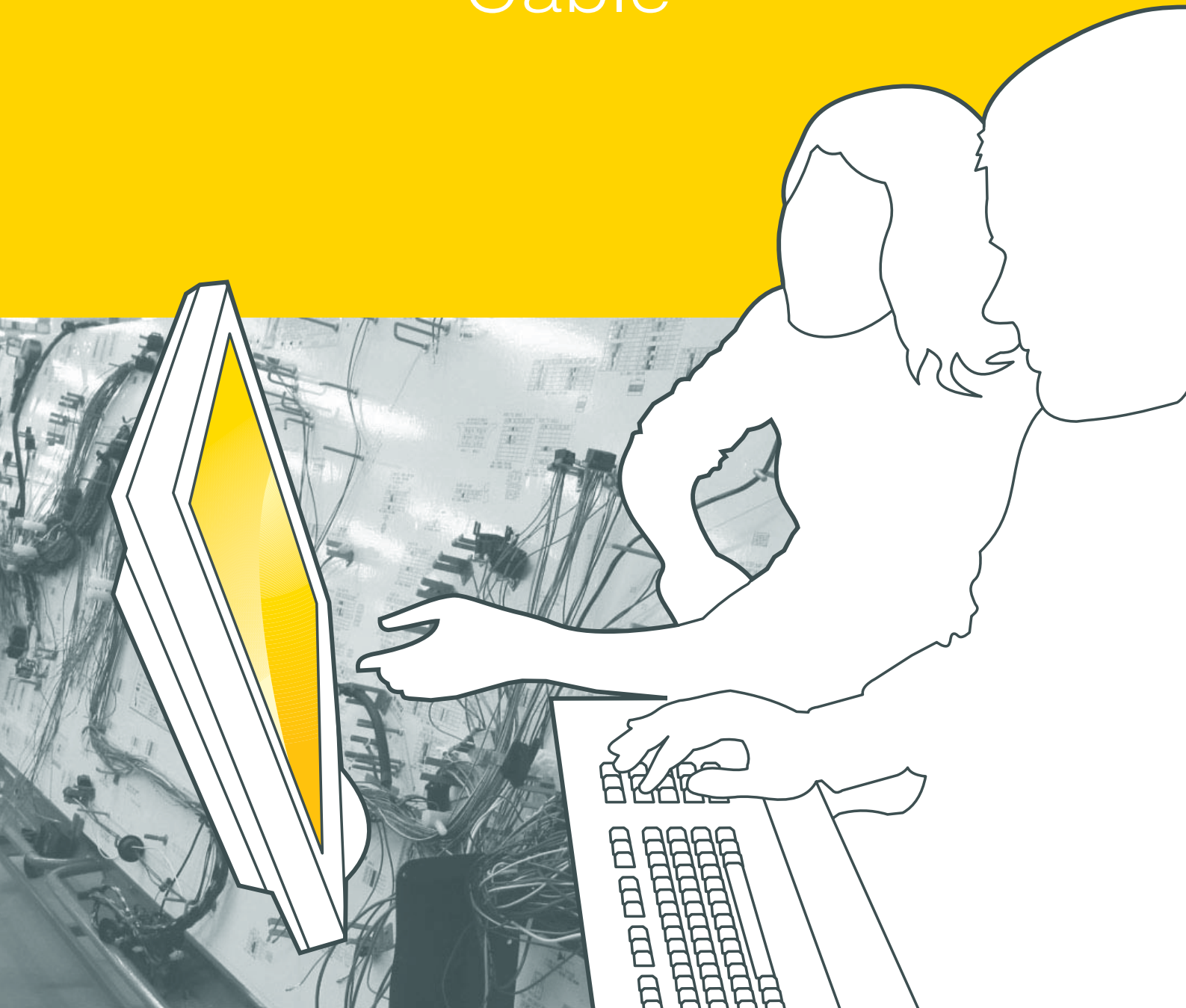


Engineering Base

New Solutions
for Wiring Harness Development

Cable





Picture: VOLKSWAGEN AG

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The Branch

- ✚ **From parking aid to spacecraft control:** Wherever electrical or electronic components are used to team up for the realization of advanced functions, leads, cables or complex wire harnesses are employed. Be it a small vehicle or a truck, a high-tech locomotive, an ocean liner or a space lab: the current must flow, and that safely and in orderly fashion. The planning and manufacturing of wire harnesses always involves a large number of enterprises. Therefore models for the cooperation between the suppliers, with controlled data flow, adjustment of levels of information and comprehensive standardization are essential factors of success.
- ✚ **Whereas in the case of rail cars** or commercial vehicles the total number of individual leads is a challenge, the mass production of passenger cars requires special solutions for the extreme variety of equipment varieties because individual vehicle documentation does not make sense in this case. Especially in vehicle manufacturing, an ever increasing number of innovations are realized by means of electrics and electronics, the on-board supply system becoming more and more important for new solutions. At the same time its quality has meanwhile become a decisive factor for the reliability of the vehicle as a whole. For passenger cars alone, due to the increasing importance of on-board electronics the number of cable harnesses has increased fourfold since the nineties.



Engineering Base *Cable* – THE Branch Solution for Harnessing

■ Cooperation with Consistency

The philosophy of Engineering Base to keep data and graphics in a common model in a database, ensures a singular degree of consistency for the entire vehicle project. Completed by multi-user capability and the control of access rights, the database offers the ideal basis for the cooperation typical of the trade, even beyond single production locations. Because on the one hand the 3-layer architecture enables simultaneous operation directly in a database, but on the other hand asynchronous operation via intelligent data exchange is also possible.

■ Uncompromisingly Consistent

From the description of the components to the handing-over to the production line, Engineering Base offers an absolutely unique consistency. Even the catalog is „intelligent“. There not only components and plug data with their symbols are stored; it also includes the rules stipulating which combinations of devices, plugs, leads and contacts may be used. Wizards designed especially for this branch solution fall back on these rules for projecting in order to fully automatically create assignments or to offer intelligent decision support. The strength of Engineering Base *Cable* becomes evident particularly in the transition from the function-oriented system design to the correctly wired cable diagram: the project engineer can build on precisely the same objects that were defined in the previous planning stage. The support of open interfaces, which are based on the international STEP standard, is just as important for the consistency.

■ Graphic and Database – Connected on an Equal Footing

At the beginning there is the system concept. Already at this stage, the Cable module supports the graphic system overview where the essential components are placed as black boxes and their basic cabling is represented schematically – the database is already filled with information. A location diagram could likewise be the starting point. It is also possible to start purely alphanumerically. Components, wiring harnesses or other resources are imported into the database either directly via the tree, via a list or via import. Here the unique advantage of Engineering Base becomes evident: graphic and database exist on an equal footing and adapted to each other.

■ Placement, Connection, Assignment: Automatically Consistent

In the next step, the components or new parts are placed and connected in the function-oriented circuit diagram. The software package immediately reflects connections as networks in the database, so that signals can be assigned to them. Representations spanning several pages automatically create references, and the data model is successively completed. The physical wiring is specified in the same diagram or separately. Here all created data including signals and references to the terminals are available – automatically consistent in table, graphic and Explorer! The intelligent catalog can offer or automatically assign additional components. Wiring harnesses are defined and can be organized in modular form, the tool assigns them leads. Thus it takes a minimum of time to create the cable diagram, including checked consistency with previous specifications.

■ Open Paths

By means of the interfaces, the path is open for handing the data over to processing tools for production preparation and the adjustment with the planned assembly in the 3D model. Information from the 3D construction about lead lengths and component parts for the individual wiring harness sections are transmitted back to the tool. Thus the complete sequence is carried out safely and efficiently on the basis of consistent data.

■ The Ideal Combination

The new branch solution combines long-standing experience and innovative drive to create a future-oriented tool. For over 10 years AUCOTEC has been developing solutions for cable planning. Wiring specialists for trucks, buses or special-purpose vehicles have long been relying on AUCOTEC tools and interface. Engineering Base *Cable* is based on continuous cooperation with leading German automakers. In this context one finds on the one hand the greatest model diversity and on the other hand the most exacting customer segment for sportive vehicles. And especially the variant diversity and the resulting modular design is optimally covered by Engineering Base *Cable*.

Features & Benefits

☐ Consistent Plant Model

- Data from the system design, cable diagram and catalogs are managed in one database.
- Different editing views can be set for different tasks
- Navigation functions provide optimum orientation in the tree structure

☐ Openness and Adjustability

- Wizards for comfortable customizing options
- Properties, document templates and reports adjustable in a flexible manner
- User rights protect configurations and templates

☐ Tabular Operation

- Integrated worksheets for quick change of bulk data
- Documents update themselves
- Worksheets simultaneously usable as reports

☐ Intelligent Catalog

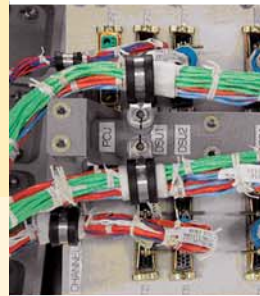
- All component data in the database
- Plugs and their assignment rules for components
- Templates for wiring harness modules and number ranges

☐ Branch-Specific Wizards

- Specify signal names on the basis of predetermined rules
- Assignment of placeholder parts in terms of equipment varieties
- Specify component name on the basis of predetermined rules
- Select lead numbers on the basis of the default values for wiring harness modules
- Export/Import of the wiring harness data according to STEP-standard

☐ Any Kind of Document

- General diagrams, black box-representation
- System diagrams
- Cable diagrams
- Language selection via dictionaries with arbitrarily chosen languages



What others think you should know:

„By choosing Engineering Base for our electrical engineering process we are very happy! Because of the integration of graphical and database handling we have no need for data consistency checks anymore. EB is an one hand possibility for: engineering, archiving and revisioning“

(Norbert Brandt, ATLAS ELEKTRONIK GmbH)



Picture: VOLKSWAGEN AG

„The intuitive operation of EB renders the software package tremendously comfortable. Even less experienced persons are optimally guided from one step to the next. This is the way things should also work with a good car before the first start. Get in and drive off, this works with EB!“

(Robert Peischl, MAGNA POWERTRAIN Engineering Center Steyr GmbH & Co. KG)

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Worldwide Support

The AUCOTEC global network: because the use of our products knows no borders, AUCOTEC is present all over the globe! Many of our customers are global enterprises operating worldwide. We are there for you, anytime, in any language – round the clock. Sense the difference! Our worldwide network supports you from the very start. We are looking forward to you!



System requirements

Processor:	Intel Pentium 1.2 GHz or faster (recommended: Intel Core 2 Duo 1.86 GHz)
RAM:	Min 512 MB (recommended: 2 GB)
Hard disk:	Approximately 0.5 GB are needed for the installation of all software components.
CD-ROM drive:	Required for installation only
Operating system:	Microsoft Windows 2000 (SP4) or later; Windows XP Home / Professional (SP2) or later
Browser:	Microsoft Internet Explorer 5.5 or later
Components:	Engineering Base installs Microsoft SQL Server 2000. If SQL Server 2000 is installed already, Engineering Base creates a new instance and installs all required databases and scripts. Microsoft SQL Server 2005 is also supported. Engineering Base installs Microsoft Office Visio if necessary.



AUCOTEC AG | Oldenburger Allee 24 | 30659 Hanover
Telephone (+49) 5 11 61 03-0 | Fax (+49) 5 11 61 40 74
www.aucotec.com