AUCOTEC

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INFO e-paper

Here you know what you get!

Binding quotations also in 3-D-offers at the push of a button

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”It's not going to go on like this, I apply for a job in Billund!” For many a stressed engineer Legoland is the fulfillment of his dreams of a distinctly easier yet creative working life. How fast and efficient could be the designing job if one could put together the individual components of machinery and plants like the famous plastic stones!

This requires a large degree of standardization, but that is often still far from the reality both in construction and purchasing of machine and plant building companies. Meeting individual customer requests makes standardization difficult. At the same time the requirements for speed, flexibility and pricing continue to rise all the time. As with the resourceful Danes, here too the solution is brought about by building blocks with precisely defined interfaces that fit universally.

Throughput plus 200 % errors minus 100 %

AUCOTEC has for some time been offering modular design including a comfortable variant handling – the INFOpaper has repeatedly reported about it. Now this offering is again substantially extended: for this purpose AUCOTEC has found a partner who is leading in terms of projecting products with many variants: the Swiss Perspectix AG. Its special know-how: definition of rules for matching modules and the visualized configuration.

The common solution, which combines Engineering Base (EB) and the Perspectix product P’X5, not only enables designers to quickly put together machinery and plants but with its schematic and 3-D representation options also generates an impressive visualization for the customers. Expensive errors that otherwise become apparent only during the actual installation are a thing of the past; the binding offer is just the push of a button away. Thus the throughput can be increased up to 200 percent, the specification error rate drops down to zero.

Standards even when individualized

The prerequisite for this is a precise definition of the company's position: how flexible do we want to be? Are we series producers or a special mechanical engineering company? What is the proportion of repeatedly usable units? Is our repetition rate higher than ”1”? Is the resulting extra engineering expenditure taken into account when calculating the savings achieved by cost-oriented purchasing?

According to AUCOTEC's experience, more and more manufacturers realize that the creation of standard components results in a distinct relief combined with higher efficiency and quality. Even in special mechanical engineering not every component is individualized; even for unique specimens the special components may make up only 30%, everything else could be provided as quality-controlled units.

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Editorial

Dear readers,

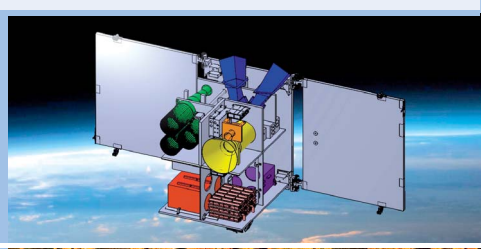
In line with our motto ”Create Synergy–Connect Processes”, AUCOTEC concentrates especially on consistent solutions that connect hitherto separate processes and thus offer our customers a large added value. Our current platform Engineering Base combines experience and know-how from various branches. A very good example of this is the subject machine cabling on page 3 of this INFOpaper. There you can learn how mechanical engineering can profit from mature, very professional concepts taken from vehicle cabling. The result is a highly efficient innovation that was up to now not addressed by any of the classical E-CAD or E-CAE systems.

With intelligent interfaces to systems from other suppliers and the corresponding partnerships we purposely expand our solution portfolio to further increase our customers' benefits. The partnership with Perspectix AG also stands for this when it comes to configurations based on rules.

Not without pride we state that this orientation is highly successful. The market distribution of Engineering Base increases rapidly and is the basis of the robust growth of the company. This shows that AUCOTEC continues to be a strong and above all reliable partner.

Yours sincerely,

Uwe Vogt, Board of Directors



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Securing knowledge

These units can be optimally created with EB and kept in the database. This may mean complete function blocks ranging from the mechanical via the hydraulic and the pneumatic systems down to the electrical engineering and controller programming, with all their necessary details. For this purpose EB's openness and database foundation is an important prerequisite.

The broad spectrum of the mechatronical modules is quality-checked in each case. Thanks to the Perspectix controller editor, all logical and safety-relevant combination and connection rules can be specified individually for each module; all dependencies concerning the buildability of a module, the restrictions, prohibitions, parameters, properties and calculations are stored as components of the module. Thus this knowledge, which otherwise is often present only the heads of the designers, is saved for good.

An image tells more...

Thus already in the sales talk only actually feasible machines or plants are put together – including the price. Yet with Perspectix tabular configuration is only one possibility, which presents itself for rather simple designs. Even more comfortable, and for the customer easier to comprehend, is the configuration supported by schematic or even 3-D representations. Particularly for complex plants, the three-dimensional image is very helpful. If in addition the hall design is already stored, the room sizes and interfering beams can also be taken into account.

The new solution offers the customer reliability: on the one hand because only feasible things tailored to the actual needs are configured, and on the other hand because the pertinent price information is much more binding. This saves both time and resources and is an invaluable advantage for any salesman in convincing the customer.

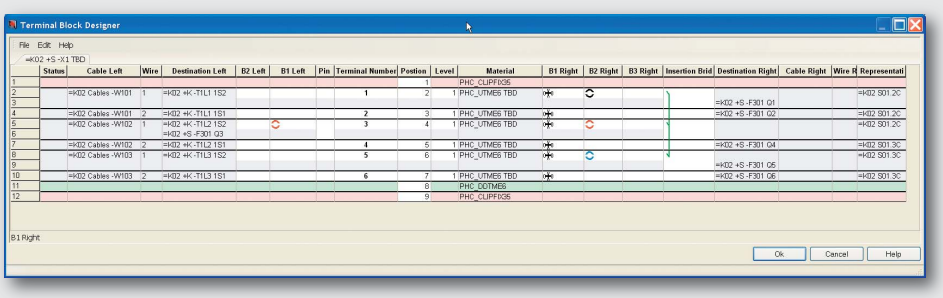
Therefore you do not have to send a skilled person to Denmark or to any other Legoland site. The know-how remains in the company, and the new efficiency provides long-lasting satisfaction – for designers and customers. You will find more on this subject **here**.

”Usher”

First terminal diagram with realistic placement representation facilitates manufacturing and maintenance

At the SPS/IPC/DRIVES 2011, AUCOTEC represents a terminal block editor for its data-base-driven software system Engineering Base (EB) that for the first time enables correct lateral placement of bridges, connectors and accessories on the terminal block. Whether a bridge is placed on the right (”internal”) or left (”external”) of the terminal block is a crucial information that nonetheless up to now was not represented by any of the systems present on the market. For manufacturing and also for maintenance, EB's new ”ushering” therefore means an enormous relief and creates a distinctly improved quality particularly for complex terminals and wirings.

All accessories and bridges of the terminal blocks are checked for their admissibility for the selected terminal type. Thereby EB by far exceeds the simple, elsewhere quite common listing of connector points. With its centralized and comprehensive editing options, the new editor moreover makes the detailed assignment of accessories and bridges superfluous.



Perfect support

New sheet editing functions distinctly facilitate diagram creation, with terminals displayed in a distributed manner and with several connectors. The designation and distribution of terminal connectors at different symbols in the diagram creates an unambiguousness and special clarity that continues in the terminal diagram.

”Future-oriented branch solution”

Institute of Space Systems teaches and plans with AUCOTEC

With the introduction of a ”class set” of the software system Engineering Base Cable (EB) from AUCOTEC, the Institute of Space Systems (IRS) of the Stuttgart University prepares itself for the future of harness design. The engineering platform specializes in the planning and design of this ”nervous system” of mobile units. From sports cars to the Intercity Express, from submarines to satellites, EB is already used for the so-called harnessing.

”This must simply be part of the curriculum”

”This wide distribution, EB's open architecture and its flexible cooperation capability have convinced us”, explains Professor Hans-Peter Röser, director of the institute. ”On average we produce about 13 PhD graduates and more than 70 graduates holding a diploma. They are supposed to be optimally prepared for working in the industry – and a branch solution so strongly future-oriented simply belongs to the curriculum”, continues Röser. He became aware of the tool by a recommendation of the satellite specialist Astrium, part of the EADS group and itself an important industrial partner of the institute. Moreover the IRS closely cooperates with companies such as Tesat and OHB but also with renowned local companies in the automotive sector.

In practice, Engineering Base will initially be used for a very special project of the institute: a miniature satellite for earth observation and scientific experiments developed by the institute.

”Connection to the latest developments”

”We are particularly glad about this cooperation because we thus create an excellent connection with a new generation of highly qualified people and the latest developments in research and teaching”, says AUCOTEC board member Markus Bochynek. His conclusion: ”The facts that soon another harness design planned with EB will orbit the earth and that our system is used in a PhD thesis makes us a little proud, more importantly however it confirms that EB points in the right direction.” With the relocation of the institute to the new space center Baden-Württemberg, the starting shot for using EB at the IRS has been fired. AUCOTEC was among the guests when the new 10-million-Euro construction was dedicated on the Stuttgart University campus on 26 October. The university is thus on the way to becoming the foremost university-based training and research center for the aerospace industry.

Picture: University Stuttgart

A tree is a tree...

Highly efficient cabling of machines using the harnessing know-how of the automotive industry

The wiring in the electrical cabinet is a routine job for any machine builder. The connector information can be comfortably created and edited, particularly with Engineering Base from AUCOTEC. But outside the electrical cabinet the cabling topic was up to now treated poorly and often approached with little professionalism. What does the interior of the machines look like? The new solution benefits from AUCOTEC's mature know-how gained by wire harness development in car manufacturing.

Growing wire harnesses

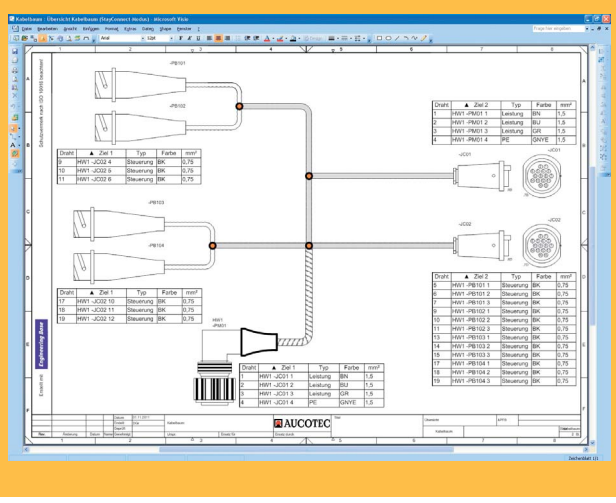
Be it crane assemblies, industrial robots, printing or packaging machines: Innumerable meters of cable must be laid from the cabinet to diverse drives and a vast number of sensors and switches. Ever-increasing electronics makes the wire harnesses ever more comprehensive – precisely as the so-called harness in a car.

Up to now cable planning for mechanical engineering was effected in the electric CAE. For this purpose there is hardly any helpful support. Often a separate tool is used to find out which plug is used or which device it matches. The results must then be entered in the CAE. Or the cables are later on laid manually in the unfinished machine. An enormous expenditure! These methods are moreover very error-prone. This can become quite an expensive affair with the current copper prices. Duplicate entries and doubled maintenance carry a large risk of errors. And the often imprecise manual laying work is highly inefficient particularly since every small deviation due to individual customer requests costs a lot of time, not to speak of the missing documentation.

Mature

AUCOTEC's solution is as simple as it is obvious: Whether one deals with a wire harness in a sports car, a truck or a printing press, is basically of no consequence, but nowhere is the corresponding know-how more mature than in the automotive industry. Machine builders can now profit from AUCOTEC's path to becoming the leading supplier in this area (in the last INFOpaper we reported about this subject). As of now, you can create wire harnesses and topologies highly professionally and thus plan the power distribution in the machines with as little material expenditure as possible.

This solution combines the electrotechnical planning with wire harness development. Thanks to the database foundation of Engineering Base, whose branch-specific variants are at home in both lines of business, all electrical units can, once developed, also be used for wire harness design – without duplicate entries, without additional errors. The topology is calculated in 2-D using the existing data, but a 3-D interface also exists in the workflow. Then the topology can easily be deduced from the 3-D representation



”The complexity will continue to increase”

Interview: Berthold Edelmann (Perspectix) on the new cooperation with AUCOTEC

Berthold Edelmann (49) is Sales Executive of Perspectix AG, Zurich, AUCOTEC's new cooperation partner (see pages 1/2). Until he entered Perspectix in 2007, the graduate computer scientist worked for 13 years selling diverse CAD/PLM and ECAD solutions.

How did AUCOTEC attract your attention?
The AUCOTEC and Perspectix target groups in mechanical engineering and plant construction match to a large degree, we might have come together much earlier. But of course the activities of our two companies deal with different company divisions of our common customers. Perspectix addresses the technical sales activities and the projecting jobs, AUCOTEC the engineering and automation activities respectively. We already have partnerships with leading companies in the CAD/PLM environment, it therefore appeared natural to also gauge the possibility of a cooperation with one of the leading ECAD suppliers. Then AUCOTEC appeared on the scene. Thanks to our long-standing experience in the CAD/PLM market and a smoothly functioning network, the name was familiar to us.

Perspectix is a leading supplier of solutions for projecting products having many variants, what precisely was it that induced you to enter the cooperation?
To explain this, I must go back a bit further: Already in an early phase of tender preparation or projecting, our P’X5 software suite offers the possibility to map complete and interdisciplinary product information on the mechanical, electrical and pneumatic systems, on software and service in a central product knowledge base, and that based on certain rules. This knowledge, which is then already present in a user-oriented way, can be further used for subsequent engineering processes. In mechanics, Perspectix has already proved that the approach functions and that product structures configured with P’X5 can very easily be further used in the 3-D CAD world. This means distinctly more efficient and less error-prone processes. The mechanical system is only one of disciplines involved in the process, however. Therefore we wanted to map the mechatronical approach in its entirety and to also integrate the electrical and pneumatic systems.

Engineering Base here assumes the role of the integration platform. Modern software technologies and standardized interfaces of both P'X5 and Engineering Base offer the optimum basis for new synergies by combining the processes in technical sales activities and detail engineering. A first series of joint talks to customers have shown that we are on the right track. Mechatronical engineering of machinery and plants with many variants will play an ever-increasing role in the future because the complexity will continue to increase. Without intelligent engineering solutions this will not be feasible – not to speak of process optimization.

What makes the new solution special?
The special feature of the new solution is the mechatronical, interdisciplinary approach, which combines the 3-D product world with automation, and that on the basis of previously defined rules valid in the long term. This is an up to now really unique approach! Another peculiarity is of course the fact that no new software solutions must be developed and introduced, and that instead customers can use the proven technologies of established solutions such as Engineering Base and P'X5, i.e. the high-end solutions from both worlds.

What is the advantage for the customers?
Consistency is a much misused word, but in this context one gets closer to its actual meaning than anywhere else. It actually functions already from the sales phase and extends via projecting and engineering down to manufacturing. This is supplemented by a very comfortable mastering of the product complexity and variant diversity. This together with the support of interdisciplinary cooperation results in significantly reduced throughput times and less error-prone processes.

Can you name examples from your practical experience?
Yes gladly, there are several of them: At the Bosch Rexroth AG Assembly and Conveyor Technology for example, P'X5 could in certain instances reduce the required projecting time and the expenditure by up to 90 percent. At the same time the parts lists, which for their systems may easily comprise several hundred items plus accessories, are error-free and complete. Another example is an internationally operating machine builder who emphasized that by transferring routine work from the design and the application engineering to the configurator, the technical experts are distinctly relieved. And one of our Swiss customers is thanks to P‘X5 able to generate and visualize an offer for a facility consisting of 800 saleable items in about 15 minutes. His customers are now considerably more satisfied because they are sure from the very start that their request has been understood in its full complexity. With the interfacing with the electrical engineering, we can now get more for our customers and of course also for all AUCOTEC customers!

Thank you for the talk, Mr. Edelmann!

”Thick boards” no problem

Leading drilling plant expert relies on Engineering Base

Bentec GmbH, Bad Bentheim, has for more than a century been a leading manufacturer of drilling systems and supplier for oil fields worldwide. The company places special emphasis on the highest possible quality and cost-effectiveness as well as on long-lived products that meet the demands of the international oil and gas industry even under the most inhospitable conditions – tailor-made for every need. At the same time Bentec pays attention to environmentally friendly technology and safe working conditions at the drilling locations. The company ensures worldwide service. For this purpose Bentec keeps offices in Russia, Central Asia, at the Caspian Sea and in the Middle East.

Errors are a thing of the past

For its ever more complex plants and drive systems, Bentec needed a new engineering tool that was to make the project processing distinctly more consistent and was to render superfluous as many of the hitherto required interfaces as possible. Moreover coupling with the materials management was an important requirement when looking for the optimum engineering tool.

The drilling plant experts found what they wanted with AUCOTEC's database-driven platform Engineering Base (EB). ”Errors within the interfaces are now a thing of the past”, explains Dieter Bosse, Electrical Engineering Manager in Bad Bentheim. Finally we have a really consistent system for our project editing”, thus Bosse continues. The materials management topic has also been solved very comfortably and automatically, thanks to the coupling of EB to SAP, he says. What struck the engineering professionals at Bentec as particularly positive was the support when implementing this coupling.

Ready for the future

Two steps for expanding the use of EB are already envisaged: The first one is the automatic procurement of additional manufacturer and supplier data (”vendor data”) that distinctly exceed the usual maintenance information. The other point is additional network licenses for the planned editing of the EB documents by the international Bentec subsidiaries. For this purpose EB's three-level architecture as well as its openness to languages and standards offers the optimum preconditions. ”We are convinced that with Engineering Base we have a very future-oriented system that really meets our increasing demands” thus the conclusion of Dieter Boss.

And besides ...

... most recently among others the following companies opted for AUCOTEC:

Adicomp s.r.l.
Sovizzo, Italy

BMB Spa
Brescia, Italy

HASSLACHER NORICA TIMBER
Feistritz, Austria

HBS Elektrobau GmbH
Oettersdorf, Germany

Huta Pokój S.A.
Ruda Śląska, Poland

Liedtke Antriebstechnik GmbH & Co. KG
Hameln, Germany

NORDEN MACHINERY AB
Kalmar, Sweden

ReGen Nautic USA Inc.
Dania Beach, USA

Sampol Ingeniería Y Obras, S.A.
Palma de Mallorca, Spain

Wattle Grove Limited
Ballybane, Ireland

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