THE WHOLE IS GREATER THAN THE SUM OF ITS PARTS

zenon in the food & beverage industry

zenon and straton as a DCS System

Tips & Tricks Automated Engineering (Part 03)

COPA-DATA Forum

BUT THE MOST BEAUTIFUL THING IS THE RESULT: ZENON 6.22 BECAUSE THE WHOLE IS MORE THAN THE SUM OF ITS PARTS.

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presents the SNMP Server that helps you with monitoring networks and also cries out "Alarm!" if an application refuses to work.

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accompanied zenon to the SMART 2007 fair in the Design Center in Linz and is happy about the many interested guests at the COPA-DATA booth. He reports about the things that were especially well received.

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knows the Food&Beverage industry inside and out. He tells us why zenon is the most important ingredient for everything to do with food.

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arranged a birthday celebration in the palace "Schloss Leopoldskron" AND took zenon over a distance of 600 kilometers through the alps on her bike. Over 20,000 meters of altitude difference in 8 days.

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reaches deep into his bag of driver tricks and explains how zenon connects to a Siemens Simotion more simply.

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always has an open ear for the questions of our customers. In this issue of IU, he answers the most frequent questions for you. And he invites you to visit our new forum.

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shows us how well Excel and zenon cooperate and how we can use VBA for perfect support of our projects in his series "Automatic Engineering".

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tries to find out why zenon is so much different than other HMI/SCADA systems and shows why it is not necessary for users to address every single part individually.

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shows us a good way of creating visualization and control together, getting into the topic of automatic engineering.

THE WHOLE IS GREATER THAN THE SUM OF ITS PARTS

Aristotle recognized that "the whole is greater than the sum of the parts". I often experience that when wonderful things and incidents happen in my life. For example, the celebration for our company's 20th anniversary in June 2007. Or an ingenious idea by our development team that revolutionized a zenon version that had already been completed in our heads. Or simply unexpected compliments …

You may have noticed that I really enjoy working with our COPA-DATA team. I am even more happy about that when I look at the current economic situation: In the small country of Austria alone, 60.000 new jobs are being created! Looking back on two decades of COPA-DATA, with all the ups and downs, I see a great chance in the current economic situation to further develop and strengthen the COPA-DATA structure. We are carefully working on an expansion in other countries all over the world. As usual, we are performing constant and controlled growth, so that we never lose the relation to our values – and to our customers.

Last fall, I witnessed some interesting events, like the "Smart Automation 2007" fair in the Design Center in Linz at the start of October. Of course, I did not miss the chance of supporting our fair team. I was surprised: usually, our efforts are taken for granted. zenon is expected to deliver optimum performance. And that is a good thing. But this time, our team received a lot of unexpected compliments for our developments and our fast and professional service. I enjoyed it.

Our editorial staff can also be proud. The IU magazine is praised as a good and important means of communication. The balance of the different topics makes the IU magazine informative and entertaining.

We answered the central question "Which innovations were made in zenon?" on the SMART fair with the presentation of the many, many features of zenon: Extended Drag & Drop functions, upward and downward compatibility, numerous improvements and extensions after our visibility and usability tests, etc.

But the most beautiful thing is the result: zenon. Because the whole is more than the sum of its parts – or ($Vs > Va + Vb + Vc + … Vn$), as zenon would express it.

Enjoy the 15th edition of IU.

Alexander Punzenberger, Vice President / Global Sales

Keep it simple.
The new zenon 6.22

The new lightness for HMI/SCADA software: COPA-DATA presents the new zenon 6.22

New software versions usually pride themselves with even more features in even more complex menu structures. COPA-DATA counteracts this trend and puts the users back in the center of attention. With new functions desired by users – and a fresh, extended user interface. Shared working over a network, reusability, templates, graphics, schemes – everything just a mouse click away. How do users and companies profit from this?

What home users and office users have known for many years, often stays only wishful thinking for industrial users: easy handling of complex software. While the advertisements have been promising "Simplicity" for years, many engineers still have to use complex and error-prone manual programming. But why write a program in C or some other proprietary manufacturer-specific programming language, when the same result can be achieved with a few mouse clicks with modern software? The much-cited slogan "Ease of Use" cannot simply mean a fancy editor; it has to facilitate the work of the system engineers.

KEEP IT SIMPLE

Complex facilities need complex software for control and monitoring. However, its operation should not be complicated. This is the credo of COPA-DATA, the Austrian developer of the independent HMI/SCADA software zenon. "Keep it simple" is the motto of its developers. COPA-DATA is renowned as an innovative software provider on the market. Sales Manager Hans-Peter Ziegler, "We were the first to fully support all Windows platforms, from CE to Vista; we also introduced distributed working over a network and we relied on simple configuration instead of programming. What is more, zenon was the first HMI/SCADA to be certified for Windows Vista." Now, COPA-DATA surprises the market with a new and simple user interface concept. Apparently, COPA-DATA has found a way to make complex functions easy to access.

In the beginning, there was the Usability Lab. After a series of painstaking tests, zenon returned in a completely new dress, intuitive and easy to use, even for beginners. COPA-DATA promises that zenon is easier to use than any other professional HMI/SCADA system.

Easy, above all, means secure and effective: powerful and complex functions are available at the click of a mouse button. Smart drop down menus and context menus instead of programming errors in scripts – saving time and raising productivity. What does this mean for everyday work? Hans-Peter Ziegler explains: "An Italian customer, for example, has created a network-wide alarm management system with zenon within half a day – without programming a line of code – and replaced a solution that took 10000 lines of code before."

MORE FREEDOM FOR PRODUCTIVE WORK

When you use zenon 6.22, you can work exactly as you like. If you prefer a structured way of working, you will find everything in its well-known place, as usual. Users who like to work more intuitively can also just start somewhere without ending up in one-way streets or dead ends. Pictures, graphics or processes can be created and modified whenever they are required.

By the way, in zenon, pictures are based on templates, comparable to frames on websites. You can now draw these templates really simply with the mouse and then position them pixel-accurately. No more calculating coordinates and manual positioning. Features like flexible zoom or extended functions for copying and pasting support your individual way of working.

Additionally, helpful functions for symbols and graphics were added, like graphical preview and free filtering options for fast selection. All of this lets you create optically appealing projects without any extra effort.

This means that modern industrial software can now offer you features like context menus, drag & drop and clever drop down menus, as seen in current office programs. Product manager Reinhard Mayr refers to insights from occupational medicine research and tells us about how zenon found its way to the usability lab: "During a presentation, a participant mentioned quite casually that he is always really exhausted after a day's work. And at home, he would only hear stupid remarks like: You sit in an office the whole day – and that alone makes you so tired? He did not understand it himself. When I spoke to a usability researcher some time later, he was not surprised at all. Because: The higher the cognitive load, the faster you will become tired and unfocussed.

And: The easier the use of a program, the longer you can work in a concentrated and productive way. It was clear for us that the best way to improve our product was to make the handling easier. This allows the user to concentrate on the project and makes work less exhausting.

The participant who first made the remark is now a satisfied customer."

REDUCING THE COGNITIVE LOAD
A better overview reduces the cognitive load. zenon 6.22 has many little extras that make complex projects much easier to implement.
For example, you can now load pictures at the current position of the mouse pointer instead of the configured position. This allows you to display error messages, set point inputs or soft keyboards right in the focus of the user, and zenon makes sure that the picture stays within the screen borders.
We have included a "Signal light" for alarms, increasing security. In the Runtime, every alarm has its own column with configurable colors for "received", "cleared" and "acknowledged". At a glance, the users can see the alarms that need their attention. Furthermore, the lines of the alarm view can be further highlighted with different colors and a handy grid.

EFFICIENT
zenon delivers productivity to companies and lowers costs on the process level. COPA-DATA relates this to the faster processing of projects due to easier handling and lower training costs. Using zenon can be learned quickly, even by non-IT professionals. And if there is an open question: COPA-DATA has completely revised and restructured the in-built interactive help function. zenon also saves costs with its backward compatibility.

That means: The Editor and Runtime of zenon 6.22 are backward compatible with version 6.21. For example, you can put the new zenon 6.22 on your new notebook with Vista.

"An Italian customer, for example, has created a network-wide alarm management system with zenon within half a day – without programming a line of code – and replaced a solution that previously took 10,000 lines of code."

Hans-Peter Ziegler, Sales Austria

Of course, it still works with the Runtime 6.21. You can save costs by upgrading hardware and software gradually.

ONE CLICK – IN THE NETWORK AND FOR FDA

"Keep it simple" does not mean reducing functions. It means providing all the powerful features of the software, easy to reach and at a mouse click. The most important principle for that: parametrizing instead of programming. zenon users know from their own experience: They do not have to write a single line of code in order to build a project. They can use ready-made pictures and templates, work fast with the mouse and keyboard shortcuts and they need neither C editor nor command line.

zenon fully embraces this principle, ranging from shared network operation to the implementation of the rigorous specifications of the "Food and Drug Administration" (FDA), which is a fundamental regulator in the pharmaceutical and food industry.

Whether you have a standalone computer, a client-server system or multi-server/multi-client system with manifold hierarchies and network nodes, you can organize and distribute projects with 100% redundancy and fail-safety, from locations anywhere in the world.

FAST REMOTE ENGINEERING VIA THE WEB

The integrated Remote Transport module already saves operators and engineers lots of time and effort for commissioning and maintenance. The optional zenon WEB Server increases the security of external access. For example, an administrator can check alarm messages

from his home office or an operator can access a station that is located on another continent.

Version 6.22 now expands these options for comfortable remote engineering. Whether you want to handle operating system messages on other devices or transfer projects without restarting – just display the screens of remote machines on your own screen. In the classical way – with a direct network connection via the zenon Remote Desktop – or via Web Access with a web browser.

Remote Desktop displays the desktop of the target computer or the input screen of the target machine on your own desktop. You can view and operate the remote device conveniently.

In contrast, zenon Web Access uses a normal web browser, allowing you to access target computers without a zenon installation on your computer. Immediately ready for spontaneous monitoring and fast reactions.

INTELLIGENT INTEGRATION: STRATON

It is only a small step from engineering with a mouse click to automatic engineering; COPA-DATA has already made that step. Intelligent wizards make automatic engineering a reality and enable the creation of complete projects with a few mouse clicks. But zenon takes it one step further and integrates into other applications in a smart way.

Integration is not just easy for the user; above all, it enables easy coupling without the need for separate error-prone interface solutions. It guarantees an error-free data flow and simple data storage: Data changed in one system is

automatically kept up-to-date in the other system. With straton, produced by the French sister company COPALP, COPA-DATA offers an affordable Soft-PLC that perfectly works with zenon and allows hardware-independent engineering. straton is fully based on IEC 61131-3, runs on all Windows operating systems and supports all of the five languages defined in the IEC (FBD, LD, ST, SFC and IL).

The cooperation of EPLAN and COPA-DATA is another example for the advantages of successful integration .

MORE PRODUCTIVE MECHATRONICS: ZENON MEETS EPLAN

Together with EPLAN, zenon revolutionizes the world of mechatronics. The two software packages integrate smoothly with each other - both in Engineering and Runtime. This is how better workflow, from engineering to maintenance comes into existence. Engineering time and costs are reduced, special customer demands can be easily met.

These significant improvements in productivity free up resources for the development of new technologies and products. You can look up alarms and error messages in EPLAN directly from within zenon and then track and remove errors at a glance. Additionally because zenon can access the EPLAN components list, it is easy to identify and order replacement parts. Product manager Reinhard Mayr: "The direct combination of zenon and EPLAN saves a lot of time, money and energy. Instead of looking for error sources manually after an alarm, the target opens automatically. The users can react quickly and correctly, always perfectly supported by zenon." ↜ *IU*

Taste and think: zenon is inside!

Well, let´s make a short exercise in imagination: What comes into your mind when we say "Food & Beverage"? Do you think of the daily meal we need by our natural constitution? If you drive a great deal, maybe you have bought an energy drink and some chips… Or maybe you prefer a flavored dessert… Or the delightful Wiener Schnitzel and the full of taste beer from the recent lunch with your friends… Or maybe you like to remember the tasting session in a winery. Probably you have enjoyed some splendid cheese samples… I will stop here with the examples, because my intention was not really to whet your appetite. Oops, is it too late?

We need these "goodies" and we like them… They are parts of our daily life. Here is the reason why I am so pleased to write this article: because zenon is more and more present in our life with its contribution to the quality of the Food & Beverage products. I invite you to take a short look with me to what happens in this dynamic industry. I will not forget to give you some examples of zenon, with the hope that you will agree with me: zenon is a premium ingredient for the Food & Beverage Industry. Now, let's start with a short story…

Some years ago I was visiting Food & Beverage plants in Eastern Europe, selling Engineering projects. Sometimes, Klaus, a very good colleague and friend of mine from Germany, joined and supported me. Klaus has studied beer technology in the famous Weihenstephan University from München. In a brewery, at the end of the visit, the ladies from the production department insisted that we tasted their beer. You can imagine three enthusiastic ladies looking curiously to Klaus, the specialist from Bavaria, waiting to hear his verdict. Klaus took his role and started to analyze slowly the parameters of the golden liquid. The ladies could hardly keep their patience and tried to read Klaus' face, in the local language: "looking to his face, our beer is…" I knew Klaus to be very honest and I was wondering also what he will say about my customer's beer. A criticism would not be very supportive for our collaboration… But Klaus soon finished our wait with a clear and loud conclusion: "This beer tastes good!" I suddenly relaxed – and the ladies, too. After that, we continued our trip to the next plant. However, I didn't want to leave Klaus in peace, so I wanted to really know how this beer was for him. "The taste is really good. But the smell is not proper. It seems they have problems with the yeast." And then Klaus told me many other details. I understood once again that, in fact, there are a lot of parameters influencing and defining the quality of what we drink or eat… Actually, the whole production chain is impor-

tant. It starts with the selection of the raw materials: for dairies, the quality of their products is very influenced by the environment where the cows are living, by the methods of milking and the cleanliness of the transport recipients. For juice producers, the fruit's origin or the pulp quality are also essential. Once the raw materials are entered into production, a clear and strict set of recipes and procedures is followed. Once or many times, perfectly reproducible, for the same qualitative results… You can imagine also the attention given to all the equipment used in production, so to keep it perfectly functioning at high performance, clean and disinfected. If a detail escapes from such careful approach, then the effects could cause big losses.

Once the product is ready, often in big tanks or recepticles, we expect it to arrive on our table. It is true, a pipe delivering beer directly to our kitchen could be an interesting idea… But we want to have the original taste and smell,

comfortable consume, nice looking packing. "We eat with our eyes". The packing is the first we see of a product, isn't it? No matter if it is a bottle, a carton box or a plastic bag. Yes, this is just the surface. What happens deeper?

This article is just a first visit in the Food & Beverage Industry: the packaging area. In the next issue of the "Information Unlimited" we will continue speaking about the other sectors of a plant.

THE PACKAGING: DYNAMISM & TECHNOLOGY

Without doubt, the F&B industry is a very dynamic one. Producers compete strongly, no matter if we speak of beer, milk, snacks or meat. It is not necessary to pay much attention to the commercial advertising or to the shelves of the groceries. You will easily find how the things are permanently changing: new brands, new products, new packing. The packing is the first we see of a product and it can influence in a major way our decision to buy. The producers know this very well and they act accordingly: the products have to seem to be more and more attractive to us. The box from which we drink milk comes in unexpected shapes.

The labels are becoming an interesting combination between aesthetic and information. The caps open easier and are more hygienic. A simple meal could include a lottery ticket or a funny toy for a child. All of these things are the results of a continuous innovation which either follows market trends or is setting them. Entire marketing and design departments focus their resources on these important tasks. It is not less interesting to see the diversity of packing materials, in order to keep better product quality, to be lighter, to be more ecological. Sometimes, there are also unexpected evolutions. For instance, who imagined that beer would be packed in PET bottles? Every experienced person would be sure that beer cannot be kept in such air-permeable bottles. But, how is it if the beer is quickly consumed or if the PET bottle is improved? The success in the market of several producers which found answers to these questions determined even the sceptics to take this idea into consideration. At least for several European markets…

However, I would say again that all these things are still just the tip of the iceberg… because behind these phenomena there is an entire indus-

try, with technology in permanent evolution. Practically, this observable creativity is transmitted to the packaging plants, but also to the suppliers of machines and packaging lines.

In bottling plants, every new packing type, every new label represents a new project to be implemented by the packaging teams. It could require a new investment in a new machine or even in a new complete production line. Their suppliers – the machine producers – are directly involved. They follow or generate new trends because, at their turn, they are continuously creating machines with more functionality, more reliability, more productive, faster or more hygienic. The machines themselves evolve in an unbelievable rate! New technologies are born every day. New materials are invented. Years ago, it was considered impossible to reach the short time taken for a machine to be designed and delivered as it is now.

It is a really amazing world, with brilliant ideas mobilizing great creative energies!

WHY DO PACKAGING EQUIPMENT PRODUCERS PREFER ZENON

It has become a common fact that zenon assures the effective operation of thousands of
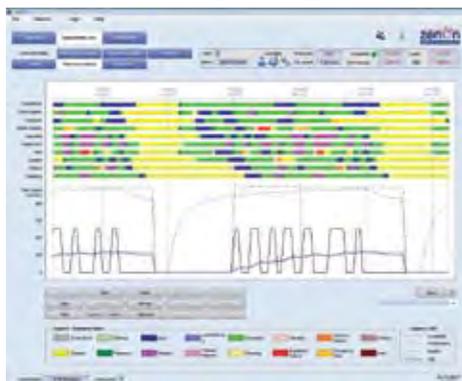
machines in packaging lines worldwide. Well, in this dynamic environment, zenon feels very familiar.

We could speak of the functionalities of zenon which strongly recommend it to play the key role of interfacing the operator with the machine: the flexibility in the graphical design, the advanced way of managing the alarms or the recipes, the maintenance support, the report creation, but also the fulfilment of the specific standards. Certainly, the machine producers need and use all of these things when they are designing HMI´s for high operation performance, and they are asking for even more, because they need to stay flexible and very productive.

I am amazed by the effectiveness provided by zenon in engineering applications. I understood that, from very beginning, this was the philosophy of zenon. If you could see how easily and quick it is to produce a picture with the right functionality and ready to be used. Without being a really experienced programmer, just "playing" with parameters, you will be surprised how many things you can do in zenon! Then you can reuse smaller or larger parts of your project, because you don't want to consume time again doing the same thing. And a lot of other things in zenon! You are able to build your own library of process objects: from simple ones, just as graphical symbols, going further to embedded image and variables; and it reaches the DCS technology when your objects include PLC logic!

I think that for the machine producers, zenon is a very good friend. Often, it is necessary to build many machines of the same type, but not

completely identical. So you need to deliver very quickly an adapted and error-free zenon application. The solution is the automatic engineering in zenon, because you create a new application by just completing an automatic questionnaire regarding the particularities of your new machine. Literally, in the zenon Wizard you pack your HMI know-how in order to deliver it simply and at the same quality level, as a part of every product!

ZENON IN PACKAGING HALLS, ON THE SPIRAL OF PERFORMANCE

Networking technology and the redundancy have been well implemented features for a long time in zenon. Sophisticated architectures are realized quickly and simply. Like in other sectors of a plant, the communication and the reliability of the technical solutions are important for the teams directly involved in packaging activities.

In general, bottling halls are considered to be "very hot" areas. In many cases, the packaging teams could be nominated as the heroes of the entire plant, because here is concentrated a most important part of the management pressure. Just imagine many trucks in a queue, waiting to be loaded with your product, to start the trip to consumers. That means the market is asking for your product, and is buying it! So, you have to assure that your equipment is working without breakdown, at maximum capacity. These professionals in packaging receive challenges day by day: new internal standards and procedure from the company, new national or international regulations, new recipes and new concepts. They are fighting to keep the quality and the efficiency at the best levels at the same time.

How zenon is making their life easier, with its SCADA/HMI technology? Let's imagine a real situation: a bottling hall where you stay alongside the packaging coordinator on a balcony. You are looking from the top, to the chain of the noisy working machines. It's a dynamic picture. At the entrance, the pallets are arriving, one by one, with recycled glass bottles. At the line exit, the pallets already contain bottles with tasty and cooling drink, geometrically ordered. Even for the people who visit such a place for the first time, it is very interesting to see the entire path of a bottle: how is it unpacked, cleaned, disinfected, checked, filled, capped, again checked, labelled and, finally, packed.

But the packaging coordinator does not scan the line admiring this technology. He wants to be sure that his line runs continuously. Especially the filler! When this machine doesn't stop, the coordinator has reason to be satisfied. The filler receives empty bottles and it has to deliver them filled. This is the essential place where the drink meets the bottles for the shared journey to the consumer. From one machine to another, the conveyors have to provide the right transport flow, for the proper synchronisation between the machines' speed. The coordinator needs to know many things about this process: if the smooth production is disturbed, what are the causes and how much is the impact of each cause? What corrective action to do with maximum benefits for the line performance? How to take the immediate action, with the smallest stoppage of the machines, when unexpectedly goes wrong? Is the pasteurizer doing his job following the settings? Is the water consumption kept in the planned limit? And many other questions… Well, it is really not easy for a packaging coordinator to know everything

about the processes, to count the performance, to measure the breakdowns, to check the quality of the labelling, to involve in the unplanned service, to focus on the important things…

I remember with pleasure about Zsolt, packaging manager in a brewery. He is present everywhere in the packaging hall, almost simultaneously, always passionate and a perfectionist. Zsolt tries to keep the right balance and the performance of the complex mechanism of four packaging lines. But even dedicated people like Zsolt have already decided to use modern tools based on zenon automation technology.

That is why our packaging coordinator leaves the balcony. He goes back to his office, to his SCADA system with zenon. Yes, zenon took the entire packaging hall to his desk! On the screen of his computer, the colors are showing online, clearly, the operation status of every machine. The coordinator takes just a short look to the graphical analyzes of zenon to understand how the chain of machines interacts in the way he wants to be "team-work". Then, with just several more mouse-clicks to see the results of the zenon Industrial Performance Analyzer: the productivity was influenced negatively by the mechanical problems at the entrance of the labelling machine… one more click and the maintenance intervention is already scheduled for the technical staff. Then, he takes a look to the quality report and concludes: the pasteurizer has stone deposits again because the pasteurizing units are difficult to regulate… zenon shows the online calculated OEE indicator: it is clear that this shift operates the line well. The zenon SCADA system automatically sends all these indicators to the management. Let's see what they will receive about the last

week: "Great, the effectiveness is better than the last week!" exclaims the packaging coordinator satisfied by this performance. The report highlights that the utilities consumption was kept close to the accepted limits, despite the old dirty bottles being washed twice. But the screen suddenly changes because zenon has something important to communicate: a critical alarm! What happens? The lye concentration in the bottle washing machine is going to decrease too much! "The message comes just in time!" With a phone call he finds that the operator is present already in the right place to fix the metering system. It is not necessary to stop the machines! zenon informed the right people…

Well, I could continue with pleasure with such real examples. It is hard not be enthusiastic knowing that zenon brings his growing value to all of these processes! Our continuous creativity runs hand by hand with the dynamism of the Food & Beverage industry. When you enjoy eating or drinking something delightful, taste and think: zenon is inside! ✇ *Emilian Axinia*

SERIES: EFFICIENT ENGINEERING WITH ZENON

Users who change from other products to our product frequently ask us: "Why is your way of doing things so different from the others? What's the use of that? My boss told me that your system is great, but I have to change the way that I work. I write beautiful scripts, but now I am told that they are not needed."

True. In our new series about efficient work with zenon, we tell you all about these changes and why engineering is now getting much easier, faster and more secure. This series illustrates the zenon philosophies "Engineering instead of Programming" and "Global/Central instead of Local".

But I will do more than explain this philosophy. I will also show experienced users how they can make their work even more efficient.

In the course of this series, I will also deal with topics like Automatic Engineering, Efficient Reuse, Object-oriented Parameterizing, etc. At the end of the series, you will have a kind of handbook for fast and efficient work with zenon – to make sure you enjoy working with zenon for a long time.

A first look at the basics:

Why exactly is the philosophy of COPA-DATA "Engineering instead of Programming"?
There are four important reasons for this:

1. The multitude of predefined options allows you to create projects in a very short time. The engineer does not have to bother with script programming. He can make use of the comprehensive set of options and tools offered to him. zenon newcomers can get an overview by going through all the properties and using the associated help function.

2. The product development is not done by the engineer but by the COPA-DATA development team. You do not have to check and test the code – we do that for you. You can fully concentrate on the project and provide an optimum result for the customer/the end user. We make sure that the software keeps its promises and that you get a perfect product without any errors.

3. Adaptations are easy to perform. Performing maintenance does not necessarily mean looking through thousands of code lines. It is easy

to maintain and adapt zenon projects. This is particularly important if you look at the whole length of a project – from design to creation, launch and also maintenance and extension. Especially for the last two topics, it is very important to have clearly structured projects and to understand how things work. This is obviously not the case if you have hundreds of lines of script code.

4. Easy adjustment to different machines/facilities. Especially in machinery construction, adjustments/modifications for particular machines are often necessary. With zenon, this is not a big deal, as it is easy to parameterize.

To sum it up: you can simply save a lot of money with zenon. Your expenses are reduced because the engineering costs and also the maintenance costs are kept low.

Some do not agree with that and confront us with the following arguments:

a) "I lose flexibility by using zenon. Until now, I could simply program everything as I wanted it to be."

b) "In zenon, I cannot see at a glance where certain properties come from. When I use XY, I simply click on the element and I immediately get my script to look them up".

In zenon, it is not necessary to program or to manage scripts. What does that mean for the two arguments above?

a. "I lose flexibility by using zenon. Until now, I could simply program everything as I wanted it to be."

Yes, it may be true that you cannot turn around every Bit with zenon and use it like a VB programming environment. But, honestly: how

many users actually use this possibility? Isn't it very common to create a template for a task and then copy it again and again?

That is the big problem of this approach. If there is an error in the original code, the programmer may have to look for it in hundreds of copies. That is not very flexible.

With zenon, that cannot happen. And if there really is a requirement that cannot be satisfied with the standard methods, you will have several efficient options to choose from:

VBA: With the integrated script language Visual Basic for Applications, you can execute any code in the Runtime. This allows performing automation tasks, logical tasks and of course, interfacing tasks like database access.

straton: This completely integrated control environment – keyword: SCADA-Logic – allows you to use the five IEC 61131-3 languages. This means you can always perform perfect calculations and logical tasks.

PCE: The integrated Process Control Engine allows you to use VB-Script and Java Script for automation tasks.

ActiveX Controls: You can integrate any standard controls like Flash Player, Acrobat Reader, etc. in zenon. Of course, the interface is published so you can include your own ActiveX Controls.

COM interface: The COM interface is also published and allows you to access zenon (Editor and Runtime) from the outside. You can use any programming language, like C++, .Net, Delphi, etc. to communicate with zenon.

b. "In zenon, it is so difficult to see where certain properties come from. When I use XY, I simply click on the element and I immediately get my script to look them up".

We deliberately chose to offer both possibilities: On the one hand, many settings can be configured directly at the element, e.g. the combined

element. On the other hand, we are convinced that it often makes sense to define central settings. Particularly if these settings are supposed to affect many different elements. zenon helps you with changing and managing these settings in a central spot.

Since version 6.21, there is a very elegant method to find the central settings: if an element is linked to central settings, you can now jump directly to the associated element – and back to the initial element, if required – with only a mouse click. This makes it easy to understand how elements are linked to each other, even for less experienced users. Instead of analyzing a script, you simply follow the links.

I would also like to present to you two very helpful tools:
The Cross Reference List and the Project Documentation Wizard.

The Cross Reference List shows the cross relations within a project. Even more useful: the search functions for variable use and function use. These functions allow you to find out where a certain variable or function is used with only a mouse click.

The Documentation Wizard creates complete project documentation. You can configure exactly what you want to be included, down to every single property. The result is a ready-formatted HTML document. As you know, the special advantage of HTML are the hyper links. You can use them to jump from one piece of information to the next. Of course, we also make use of this advantage in the zenon Wizard. The resulting document includes all necessary links. This means you can follow all the relations within the project by clicking on the hyper

links. The document also includes a list of the variables uses and function uses. Like the Cross Reference List, this shows you where variables/functions are used.

AND NOW THE PRACTICAL PART
The first part of the series deals with "global/central instead of local" .
Before we look at this topic, we have to define the terms "local", "central" and "global".

Local means that properties are defined for one element, for example the font color of a bar graph. Central means that properties are configured centrally in the project. An example for this is the font style, which is defined centrally. All picture elements can use the centrally defined font styles. Global means that properties are defined across projects. For that, we created the global project. Everything defined there is available to all other projects in the editor that have loaded the global project into their workspace.

First, we will take a look at what can be defined locally, centrally resp. globally:

LOKAL	CENTRAL	GLOBAL
Element settings	Fonts	Fonts
Background colors	Templates	Templates
...	Functions	Users
	Scripts	Language tables
	Variables	Symbols
	· Units	Graphics
	· Limits/colors	...
	· Representation range	
	Symbols	
	Reaction matrices	
	...	

The reason for this division into local/central/global is the following:
In most cases, you will prefer to have the same Look & Feel for the whole project. It saves the engineer a lot of work if he does not have to define all the settings for every element, over and

over. Besides, this approach allows for central maintenance. If you want to change a property, you do not have to change every single element, but rather adapt your whole project with just one modification.

An example for this is the font style. You do not have to define the font style for every button and every bar graph. You can simply use the already existing font styles or create a new font style.

If you want to adapt a font, because it is too small, or because the customer wants a different font style, you can do so with a few mouse clicks. You do not have to open hundreds of pictures and maybe modify 200 elements. No, it is enough to change the centrally stored font style to update it in the whole project.

Hint Click on "Variables" in the project manager with the right mouse button. You can then select the associated elements and jump directly to the font list. If you want, you can create a new font here and then jump right back to the initial element with the "Back" button in the tool bar.

THE GLOBAL PROJECT
Let us stick with our first example about the fonts. Especially when you are working with the zenon Multi-project administration, it is important to use the same font styles in all projects. You could create the font styles in every project and manage them locally. You could also copy the font styles from a master project to the other projects.
However, using the global project is a lot smarter. You can define fonts that are available in the workspace of all projects. You can then choose whether you want to use a central

Hint Click on "Variables" in the project manager with the right mouse button. You can then select the associated elements and jump directly to the font list. If you want, you can create a new font here and then jump right back to the initial element with the "Back" button in the tool bar.

font of the single project or a global font of the global project. The font styles are identified by their numbers.

Hint In the global project, use a numbering system that is different from the one in the single projects. If you use the same font numbers in the global project and the single project, you will only see the single project's font during Runtime. If the numbers are the same, zenon always uses the local settings of the project. This also means you can override the settings of the global project.
Comment: This mechanism also works for font lists, keywords, users, etc.

Attention The name of a font list is used as the identifier. By default, the names are set during the creation of the font list and depending on the language of the editor (for example "Schriftliste 1", "Schriftliste 2", etc. in the German Editor or "Fontlist 1", "Fontlist 2" in the English Editor). If you change the language in the Editor and the names in the global project are different from the names in the single project, the font lists may not be found. You can avoid that by giving your own names to the font lists and keeping them consistent in the global project and the single projects.

Users, language tables, graphics etc. can also be used in the same way, centrally and globally. The procedures for variables and symbols are a bit different. You will learn all about the possibilities of using variables and symbols in an object-oriented way in a later part of this series.

REACTION MATRICES
I would also like to mention the use of reaction matrices, colors, visibility and blinking for ele-

ments. This is a very essential part of zenon, which makes sure that the behavior of a variable is the same in the whole project.

First, **reaction matrices**: unlike limits, they represent the central approach. A reaction matrix is designed once and then associated to any number of variables. All variables linked to the reaction matrix react in the same way. Your advantage: central and simple maintenance.

What applies to both reaction matrices and limits: Value attributes like limit value, blinking, visibility, limit text are available in the whole project. This means, for example, that you immediately see the associated limit color in a numerical value or that you can show the limit text in a text element or binary element. I would like to highlight some special elements here: the bar graph, the indicating instrument and the trend element.

They have the option to show the exact development of the limit, with the representation mode "explicit". Example: We have a variable with a limit at 50 and another limit at 100. If the value rises, you will see the standard color of the element from 0-50, the color of the first limit between 50 and 100, and the color of the second limit above 100.

The binary element is a special element: it allows transferring the attributes of the variable described above to a symbol.

Finally, I would like to mention the **combined element**, the universal element, so to speak (but consequently, also the most complex one). With the Combined element, you can choose whether you want to take over the attributes of the underlying variables or define separate

states in the element itself. With this element, you can choose between the local and the central approach.

So much for that. In the next issue of IU, you will read about the object-oriented zenon variable model …

↪ *Markus Helbok, Product Manager zenon*
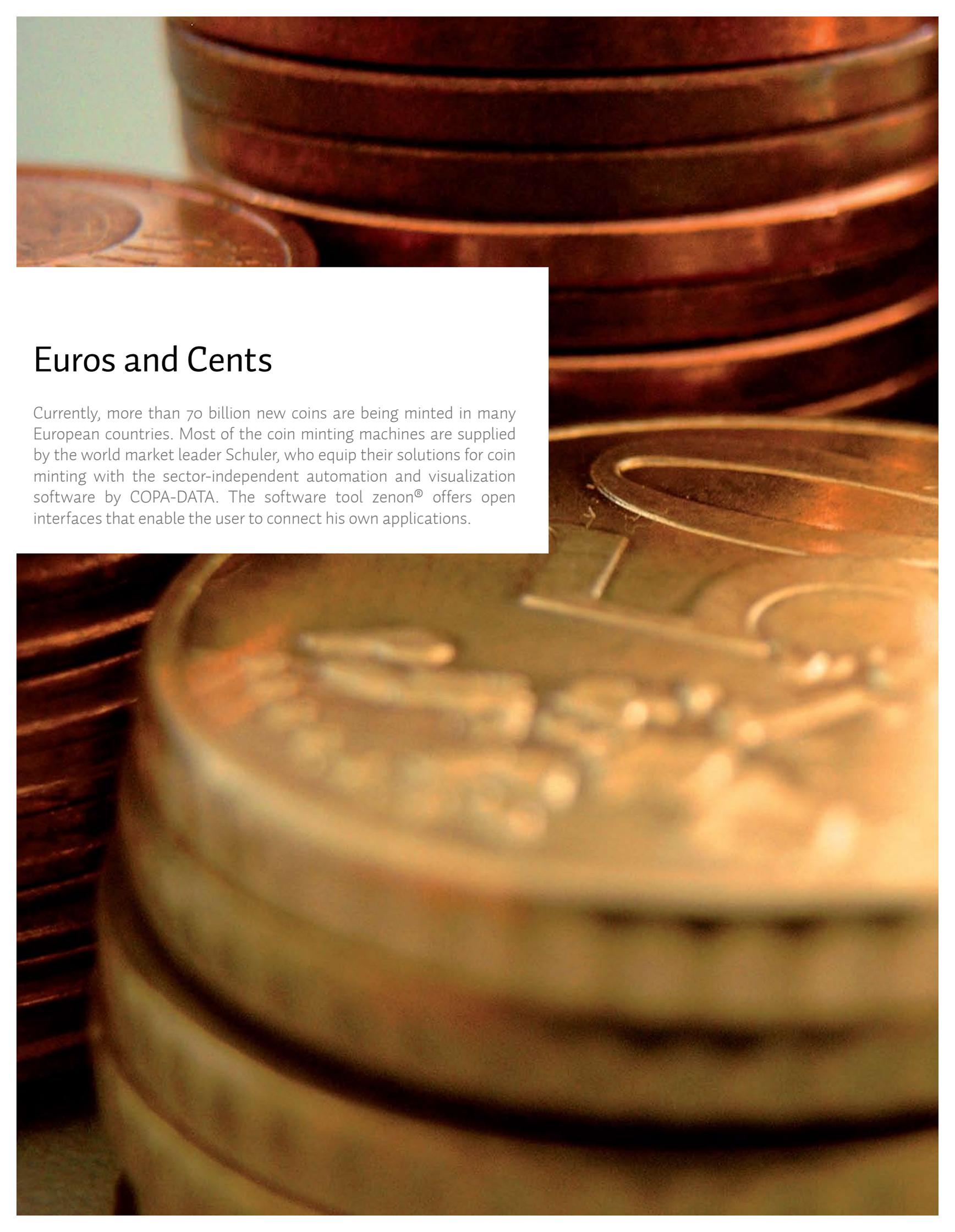
Euros and Cents

Currently, more than 70 billion new coins are being minted in many European countries. Most of the coin minting machines are supplied by the world market leader Schuler, who equip their solutions for coin minting with the sector-independent automation and visualization software by COPA-DATA. The software tool zenon® offers open interfaces that enable the user to connect his own applications.

Coin minting presses have been a traditional product of Schuler for over 100 years. In the year 1839, Louis Schuler founded the company in the German city Göppingen and concentrated in the beginning on metal sheets. In the year 1900, Schuler presented the world's first transfer press. Today, the company stands for modern forming technology in the automobile industry as well as coin minting. Coin minting machines by Schuler have a worldwide market share of over 80 percent.

COIN MINING TODAY

Coins are produced both in horizontal and in vertical versions today. The most current models are the minting presses MRV 150 Bi-Metal/Ringmaster and the MRV 300. The first one of them unites the functions of three presses in one machine; it can be used both as a minting press and as a punch press for bi-metal coins (consisting of ring and core). Furthermore, it can be used for the recycling of used bi-metal coins, to separate the ring from the core. Its most significant quality is its high throughput: it can stamp/punch up to 750 times per minute. The MRV can press both normal and collector coins with a force of 3000 kN and up to 400 times per minute. "The Euro changeover created an important impulse for our company. Dieter Merkle, Sales Executive for coin minting machines at Schuler, explains: "Even though the biggest rush is over, the projects with EU member states have been running for years now. Some states already increased their capacities before the Euro; some will do so on short notice."

**AUTOMATION –
STEP BY STEP TO SUCCESS**

Of course, besides perfect pressing technology, modern aggregates also require top-notch automation and visualization. About seven years ago, Schuler started to look for a visualization system that would deliver the highest possible information spectrum to the user. After a close examination of different software tools, the decision went in favor of zenon by COPA-DATA, which fulfilled the requirements best. Today, the software zenon by COPA-DATA is used not only for the visualization of high-speed presses like coin minting machines, but also for mas-

sive forming machines. Wolfgang Breuer, Head of Electrical Construction at Schuler, explains: "Nowadays, information technology is an indispensable support in machinery and facility construction in order to raise efficiency and stay competitive." The electronics specialist also reports that Schuler Pressen was the first to offer services in this direction.

**ZENON IS FLEXIBLE
THANKS TO OPEN INTERFACES**

The user can also create all the required input masks for the visualization and operation with the software tool. Additionally, it is easy to make modifications and adaptations resulting from everyday practical use. Wolfgang Breuer, Head of Electrical Construction at Schuler, reports: "The end users of our machines often demand additional functions and tools, which we deliver tailor-made, according to our customers' requirements." The software zenon is sector-independent and offers open interfaces, which allow to integrate other applications or individual software without much effort. This makes it possible to integrate applications, which are required especially for pressing machines, like tool management. Recently, some additional functions were added to the system, which are of particular importance, especially in mechanical engineering. This includes, for example, the possibility of operating the software with keys or a touch screen.

**TECHNOLOGICAL PROGRESS ENSURES
FUTURE SUCCESS**

At the moment, Schuler is still using version 3.52 of the software solution zenon. During a change of operating systems from Microsoft Windows NT to Microsoft Windows XP, the company also wants to change to the current version for visualization and machinery operation: zenon 6.20. The pilot system has been set up and the project is being converted, so the first machine can be launched soon. Heike Sommerfeld, Product Manager at COPA-DATA in Ottobrunn, explains: "With new software versions and guaranteed compatibility of the solutions, we protect the investments of our customers. They profit from the newest functions of the software and can work more efficiently." One of the new functions

used at Schuler today is the automatic variable import. The data points are read out of the STEP 7 program and created automatically. This guarantees a consistent data management. Furthermore, the user saves time, because manual copying etc. is no longer necessary. Even more time is saved by the intelligent wizards, which take care of recurring tasks. Working with zenon is intuitive, comfortable and clear, thanks to the graphical user interface. A further example: zenon is based on Unicode. This means that the language and font change can be performed during operation. This is a particular advantage for internationally operating companies. Furthermore, with version 6.20 of zenon, the user can optimize the communication with the PLC. Cycle times are adjusted, so that short reaction and picture opening times are possible, even for low bandwidths or during times of increased data flow. ✎ *IU*

A precious natural resource automatically bottled

»Römerquelle« is one of the world's oldest mineral water springs as well as the best known and most popular brand in Austria. According to research carried out by Arsenal Research, the Austrian Center of Research and Testing, this precious natural resource has been bubbling daily for 5,300 years in the Burgenland borough of Edelstal. State-of-the-art automation technology is used in the bottling of the mineral water as well as for cleaning and recycling the bottles.

The tried-and-tested production concept with machines from the German system supplier Krones based on the »zenon« HMI/SCADA software from COPA-DATA of Salzburg guarantees an efficient and state-of-the-art manufacturing process while maintaining high standards of hygiene and quality.

Millions of years ago, the Alps and the Carpathian mountains broke apart. These violent tectonic shifts caused fault lines to appear in the rock structures deep below the earth's surface. One outcome of this stone displacement was the so-called » große Thermenlinie« (which translates into English as 'major thermal spring line') that, today, is the location of the Czech therapeutic spa resorts of Karlsbad and Marienbad, the thermal springs of the southern railroad route (Baden and Bad Vöslau) and the Slovakian springs (including Radenska). At the base of one of the foothills known as the »kleine Thermenlinie« (which translates into English as 'minor thermal spring line'), the »Römerquelle« spurts forth in the Burgenland borough of Edelstal.

The finely mineralized water flows under enormous pressure and is protected by massive chalk and dolomite rock structures. The Römerquelle is an artesian well whose water makes use of a tectonic fault line to reach the surface with a temperature of 17° C. According to studies carried out by Arsenal Research, the Austrian Center of Research and Testing, the Römerquelle is 5,300 years old. As early as 16–180 AD, a health spa and bathing center was in operation close to the Roman army camp of Carnuntum. The spring was rediscovered in 1890 and commercial use began in 1925. Meanwhile, the estate has increased to its present day size of 328,083 m2. About 150 million liters of natural

mineral water are bottled each year in the bottling plant of the Römerquelle in Edelstal.

STATE-OF-THE-ART BOTTLING PLANTS

As the world's first mineral water operation, Römerquelle established a bottling plant that sterilized the mouths of the bottles with hot steam during the filling process, ensuring a high product quality. Hosing down the entire filling plant with hot water also prevents the formation of bacteria. Samples are continuously tested in the company's own laboratory for bacteriological purity, pH value, conductance and mineralization. The high standards of hygiene and quality were also confirmed in 1994 by the plant's successful certification to the norm, ISO9001.

This meant that the Römerquelle was the first mineral water bottler in Austria and one of the first in the world to obtain this certification. Today, Römerquelle has four bottling lines in total. The line for glass bottles produces an output of 35,000 bottles an hour, two lines for non-returnable PET bottles accomplish between 20,000 and 22,000 bottles an hour, and the reusable PET bottling line processes 24,000 bottles an hour.
Römerquelle works together with the German Krones company in the areas of plant construction and machines. According to its own information, Krones is the world's largest mechanical engineering company in the beverage sector.

One special feature of this vendor is the consistent compatibility of its machines – regardless of whether they are older models or new machines, they all fit together and are compatible with one another.
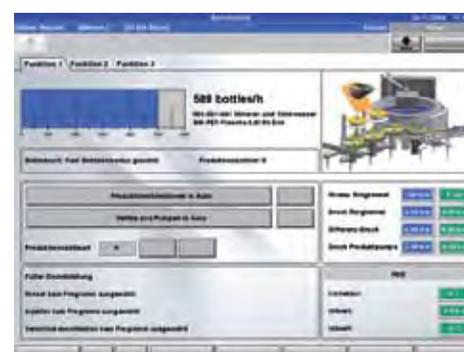
This is a great advantage for the operator, particularly when it comes to upgrading existing plants. This consistency is made possible by the technically mature process and production concept.

The pre-installed »zenon« HMI/SCADA software from the Salzburg automation specialist COPA-DATA also guarantees compatible operation with existing plants. ✎ *IU*

20 YEARS OF COPA-DATA.

The celebration.

"Dream, explore, discover"– the motto that has been standing for us and our products for 20 years was also in the focus of our birthday celebration.

It was a hot early-summer day and we were refreshed by a cooling rain shower in the afternoon. While the rain was falling outside, we enjoyed the celebration with our customers and partners; people who we have a lot in common with, who stand behind us and who are often even more than partners or customers. But let's begin from the beginning …

20 years – a wonderful age for a wonderful celebration. We sent out invitations for our celebration in Schloss Leopoldskron in Salzburg in June, and we were happy to welcome guests from all over the world that filled the palace garden and the great hall. It was a wonderful feeling to see all these people – who mean so much to us and who we sometimes may only know from a long distance – gathered in one place. Relaxed, looking forward, ready to celebrate.

Another thing that may not be typical for a birthday celebration, but important for a celebration in the HMI/SCADA industry: we were really happy that zenon 6.21 was also with us. We managed to finish our Usability Version just in time. And so, we were able to proudly present it to our guests.

Just another sign of HMI/SCADA professionals: before champagne and dinner, our guests were happy to do some work, some tech-talk and some discussions. A number of

presentations informed our guests about topics like zenon, security with Windows Vista or the co-operation with EPLAN.

Our guests got to know what makes 6.21 so special and what troubles it underwent in the Usability Lab. Well, there was not much compassion, but everybody was curious about zenon's new look and feel. The reactions during the celebration and also in the following months during customer visits and fairs showed us that it was worth the effort.

Windows Vista was another topic on the agenda. After all, zenon was the first HMI/ SCADA software to be "Certified for Windows Vista". No surprise, the topic "Security in sensitive areas" was and is important for us. That is why zenon 6.21 supports all the new Vista features and runs without problems, even without administrator rights. Our project with EPLAN matched this topic perfectly: two professionals, integrating perfectly with each other, revolutionizing mechatronics. But that is a separate topic. After lunch with delicious finger food creations, jackets were taken off and people enjoyed their afternoon Espresso in a good mood – under a blue (and later rather wet) heaven; typical Salzburg weather.

As you see, we did not miss out on the celebration. We started with a culturally inspiring visit to Hangar 7, which is a masterpiece of architecture and technology; technology as we love it: looking ahead, searching for the perfect solution. Hangar 7 has become a popular place for showing guests a completely different side of Salzburg. Many of our international guests were surprised by its astonishing ambience and the interesting exhibits.

After this visit to modern Salzburg, we moved back to the traditional part. The same way that we try to connect tradition and avantgarde in our company, the combination of old and new ideas characterized our 20th anniversary celebration. We returned from the hangar to Schloss Leopoldskron, where the Aperitif was accompanied by the sounds of classical violin. The evening was crowned with a dinner consisting of excellently prepared regional specialties, served in noble surroundings and accompanied by fine wines from the Kamptal.

Later that evening, the sky was illuminated with a wonderful firework display; colorful lights, sparkling shapes and silver rain. It was time to dance through the night. The band "Straight up" played the top hits of the last 20 years, filling up the dance floor with managers and developers, journalists and marketing professionals, supporters and engineers, plant directors and translators. Some feet remembered that night even two days later, we were told.

Now that the summer heat is long gone, we still like to think back to this celebration. To our guests – even the mayor honored us with his visit –, to the many good wishes and wonderful presents. Thanks to you all, dear guests, you have crowned this celebration with success!

What is next? Of course – aside from the upcoming zenon versions that are sure to revolutionize the SCADA world – the 25th anniversary celebration! Please make sure to mark the early summer 2012 on your calendar … ✆ *IU*

Successful SMART AUTOMATION 2007

Many current and potential customers as well as partners met at the COPA-DATA stand at last year's SMART AUTOMATION fair to discuss current and upcoming projects with us. Once more, COPA-DATA was able to emphasize its unique market position in the HMI/SCADA world. Under the theme "Keep it simple", the company presented zenon 6.21. Visitors could inspect the wide range of applications and the highly developed and powerful solutions of the HMI/SCADA system zenon and the integrated control solution straton.

Above all, the results of the usability research project were at the center of attention. The project had dealt with the optimum ergonomic design of the Editor, the so-called GUI.

The fundamental idea had been: "If you want transparent processes and perfect control, you should be allowed to concentrate on the project, not on the tool." The positive feedback had confirmed our decision to dedicate a separate version to the results of this project: zenon 6.21.

Besides the optimization of the Engineering GUI, the audience was also very impressed by the integrated straton solution, the Vista Certification and the support of Windows CE 6.0. All in all, a well-balanced package of novel and unique selling points. Especially with the certification for Windows Vista and the support of Windows CE 6.0, COPA-DATA underlined its role as the technological leader and trendsetter.

New perspectives and possibilities for mechatronics engineering were presented with the interaction between zenon and the EPLAN platform.

The COPA-DATA team would like to thank you for your interest and confidence. We are already looking forward to seeing you at the Vienna-tec
↶ *Hans-Peter Ziegler, Sales Austria*

zenon theme workshop 2007 at COPA-DATA Germany

"Experience success" was the motto of this year's COPA-DATA theme workshop. More than 100 visitors wanted to know how successful companies work with zenon. The workshop included case studies from different industries as well as technical presentations.

Roland Kraft of Benninger Zell GmbH reported on controlled production of tire cord. As one of the leading producers of machines for tire cord, weaving preparation and textile processing, Benninger offers manufacturer-independent services for their customers. They have been using zenon for nearly 10 years, mainly because of its openness, simple engineering, simple set-up of redundancies and international usability.

Thomas Kühne is responsible for IT production at a leading tire manufacturer in Germany. He described how zenon monitors and controls temperature, pressure and time of the heat press in Press Control Curing during tire production, guaranteeing a stable and high-quality production process. Additionally, zenon documents all data and processes for possible liability cases. zenon also ensures economic heating times and optimum use of production capacities.

COPA-DATA product manager Axel Netuschil presented the cooperation between EPLAN and COPA-DATA, which links engineering and maintenance in machinery and facility construction in an efficient way and fully automates the engineering process. Processing times during the engineering process are reduced significantly and errors due to manual copying or bad coordination belong to the past.

The BMW Group reported on experiences with the engineering process in the automobile industry.

BMW utilizes the integrated solution of zenon and EPLAN. Clearly defined system architecture and workflows and the neutral data models make design and work much more efficient. In the pilot project, BMW achieved an automation degree of 95 percent for the creation of circuit diagrams, 60 percent for PLC programs and 80 percent for operation and visualization.

Bernd Wimmer, Manager of Sales and Application Support at COPA-DATA, presented the complete execution of an interesting project. He showed us the sophisticated solution created with zenon at the body shop of the BMW Group, from evaluation to implementation. One important goal was the definition of standards for design and implementation processes as well as for technical equipment and tools in the project. COPA-DATA and the BMW Group developed a comprehensive visualization concept with zenon. For that, they created standardized projects that can be adjusted to the requirements of specific projects with various expansions.

Herbert Serwotka of FFT EDAG presented successful strategies for the technical and commercial launch of a project. He emphasized the importance of the design and engineering phase for a successful production start. Concentrating on this phase ensures faster production cycles, higher product capacities, improved product quality and better adherence to schedules – and it can indicate new ways of cutting costs.

In the final presentation, Heike Sommerfeld of COPA-DATA summed up the highlights of the new zenon 6.21 and went into detail about "Efficient Engineering in zenon".

During the adjoining dinner, everybody agreed: "Socializing, making new contacts and the targeted exchange of know-how – that is what sums up this event." ↶ *IU*

Stay informed about current events at
www.copadata.com/events

Who's Who?

EMILIAN AXINIA

Responsibilities at COPA-DATA: F&B Industry Manager since June 2007. **Born:** On September 14, 1970, in the Romanian city of Pascani. **What happened before COPA-DATA:** After finishing my studies as "Master of Science" in Computer Engineering, I worked as a teacher in a computer training center for a short time. This job was too quiet for me and so I changed to a different job, which included a lot more traveling through Romania and also Europe. For ten years, I coordinated the engineering activities of the Romanian subsidiary of the international company Ecolab. That was a great experience – regarding both teamwork and the successful work in the food and beverage industry. After that, I decided to make a new challenging experience: I launched a new company selling automation technology. And I started enjoying the zenon world more and more. After two years, the company continued its development – but without me. The reason for this change was a very beautiful one: my wife Angelica from Salzburg. This is how I came to Salzburg. **Hobbies:** Above all, I enjoy the evenings, the weekends and the celebrations with my family. I have always liked getting to know new places and faces, even if it was "only" about business. But I especially enjoy activities like climbing in the Carpathian Mountains or sailing in the Adriatic Sea. At the moment, I am discovering the charming secrets of Salzburg and its wonderful surroundings. **Favorite books :** Right now, technical magazines and business books are ranking first. And also the textbook for the German language seems to become a new challenge for me. Besides that I would like to read more … especially poetry. **Music:** Rock music of nearly all kinds is my favorite. But I also like to listen to classical music, jazz or dance music. **Motto:** To stand still is to go backwards.
E-Mail: EmilianA@copadata.com

GERHARD ROIDER

Responsibilities at COPA-DATA: Working at COPA-DATA since January 2007. Responsible for the design and development of the COPA-DATA website and the improvement of the User Experience of zenon. **Born:** In Salzburg, on June 2, 1972. **What happened before / at COPA-DATA:** After graduating in Architecture, (Tech.Univ. Graz, Tech.Univ. Delft and UC Los Angeles), I went into the Media world. One of the reasons for that was probably the Web hype towards the end of the nineties. After the burst of the Internet bubble I decided to stick to the Media world as I still found it a very thrilling area of work. After University, I worked as a Research Engineer at CURE (Center for Usability and Engineering) in Vienna for three years. The main topics there were Usability, User Experience and exciting research projects. Because of my wife and children I moved back to Salzburg where I have been working as a multimedia consultant for five years now. **Hobbies:** Luis and Theo (my two sons), mountains, music. **Books:** At the moment: "The Tibetan Book of Living and Dying" by Sogyal Rinpoche and "Ecstasy" by Irvine Welsh. **Music:** Selected music from the 60s, 70s, 80s, 90s, 00s. **My motto:** "You have to have a dream so you can get up in the morning." by Billy Wilder
E-mail: gerhardr@copadata.at

WOLFGANG MOSER

Responsibilities at COPA-DATA: In the Support team at COPA-DATA Salzburg since July 2003. Support Manager since June 2007. **Born:** On November 18, 1970. Married, two children. **Zodiac sign:** Scorpio. People born under this sign are said to be full of enterprising spirit and initiative. They go about things full of energy and have a shining intellect. Scorpions also tend to have a seventh sense for the problems and worries of other people. – Seems like the ideal prerequisite for the Support team – doesn't it? **What happened before COPA-DATA:** Trained to be a cook (seasonal work in Zürs, Lech, Innsbruck, Turrach, Bad Kleinkirchheim); 1997 – 1999 Matura (university entrance diploma) in the evening school 1999-2003: FH Salzburg, program "Telecommunication and systems" Internship at Conova Communications, Introduction of a Network Management Systems **Hobbies:** Football, ice hockey, cross-country skiing, cycling (also cycling marathons)

New members to the family

October 26th, 2007, National Holiday in Austria – and a very special day for Mr. and Mrs. Wintersteller. On that day, their daughter Isabel took her first look at the world. We wish her a lot of fun with her sister Alina, her mother Biggi and her father Markus. And if there should be any problems with regard to diapers, no need to worry: as one of our Support pros, her father is used to emergencies. Congratulations from the whole COPA-DATA team!

New COPA-DATA office in Cologne

COPA-DATA Germany has well directed growth and continues to strengthen its position, especially in in northern Germany. A separate office has been established in Cologne, in order to be closer to our customers in the region and to provide better care for our new and existing relations. A team of Sales Managers, Sales Engineers, Product Managers and Test Engineers are making sure that service is improved, and optimum technical support is provided. Our Cologne office takes care of prominent customers including Ford, Goodyear, SIG, Volkswagen and IGLO. The product know-how of potential and existing customers is expanded with a comprehensive range of training. The employees in Cologne also take care of the regional technological and sales partners and the COPA-DATA office in Hannover.

zenon on vacation!
A somewhat different trip to the Alps with Inge Steger

Summer is the season for vacation – also for zenon. We treated our star to eight days of vacation in the Alps, together with Inge Steger. However, it was not a normal vacation: 600 kilometers and 20,000 meters of altitude difference were waiting for zenon. Our PR manager Inge Steger and Johanna Kronberger of Porsche AG started as the only Austrian ladies team at the traditional Jeantex Transalp tour, crossing the Alps on a mountain bike. This is a report about the tour from the view of zenon, who traveled with them as a logo on their jerseys and who did not have to move a single Bit.

Summer, sun, sunshine, that's how I like it. Good conditions for the Jeantex Transalp tour, which started in the Bavarian town of Mittenwald on July 14. Well, my two companions were soaking with sweat. No surprise, biking on the mountains in the middle of the summer... The tour was divided into eight stages, crossing the Alps and ending in Riva del Garda in Italy. Oh yes, when I say "we", I mean Inge Steger, Johanna Kronberger and me, zenon.

The two ladies were working hard on their mountain bikes and I kept track of everything, as usual, from my look-out on the jersey. The tasks were allocated perfectly – even if there was nothing to automate, as I soon found out. It was all about muscles, balance, stamina, courage and motivation. And we needed a lot of everything.
The tour started with a shock for our team – by the way, the only Austrian ladies team in the field. Inge Steger fell and got hurt during the quite difficult descent from the Plumsjoch. She continued, up and down the hills, with a wounded arm and bruised knee, hand and ribs. And the trip stayed as tough as it had begun.

The road to Riva was characterized by heat, steep ascents and difficult descents. My two ladies proved that they can keep up with the professional teams, especially on the demanding stages. At the end of the stage, however, they got to know the differences between amateurs and professionals with a whole escort team.

Instead of regenerating and resting, Inge and Johanna had to repair and check their bikes, get a hotel and care about many other little things. Combined with the long stage times of the amateurs, this meant: Not enough sleep. I found out that taking pain killers does not count as doping, which was a bit of relief for the two ladies. It's good that I was with them! What really paid of was our unbeatable team spirit. Inge and Johanna managed to catch up, especially on demanding stages. Nevertheless, during all this exertion, we often enjoyed the fantastic view in the Dolomites. As I specialize on visualization, this was a particular pleasure for me. And we also took some screenshots; after all, we were on vacation. In spite of the racing situation, we took the time to celebrate Johanna's birthday in the town of Arabba – with

isotonic wheat beer, also known as "dissolved regeneration powder". Unfortunately, we had to wait with the champagne until the tour end in Riva. After eight wonderful days for me – I don't know why Inge and Johanna looked at me so angrily sometimes – after eight mountain stages, 68 hours on the mountain bike, 630 kilometers up and down the hills with nearly 21 000 meters of altitude difference, we reached the goal in Riva, finishing seventeenth in the ladies' ranking.

By the way, Inge felt the same way as I did: "Considering that we are amateurs, we are really happy about our result. We made the whole tour – and even came in the seventeenth place. Catching up on the demanding stages particularly helped us forget about the 'pains' of the tour – see you next year ..." ↺ *IU*

COPA-DATA connects the world of processes with network management:

zenon SNMP Server for a perfect overview

More overview, faster response times and better utilization of resources for enterprises – delivered by COPA-DATA and its new zenon SNMP Server. This makes zenon the first HMI/SCADA system that can be monitored from a Network Management System. The previously separated worlds of process control systems and network management are growing together and can now cooperate efficiently. Especially companies operating remote and unmanned stations can benefit from the new zenon SNMP Server.

SNMP, the standard protocol for network management, allows monitoring and controlling network elements like routers, servers, switches, printers etc. from a central station. However, monitoring with Network Management Systems (NMS) does not work perfectly. On the one hand, it is restricted to components from classical Ethernet/TCP/IP networks. On the other hand, it often runs only device-specifically, which means that, for example, a PC can be monitored, but not the application running on it. This means that the system is not completely under control.

zenon closes this gap by integrating devices of the process control system that were previously unreachable. The zenon SNMP Server works as a gateway between the process and applications on higher levels. This gives the engineer a lot more options. First, he can have applications monitored directly. Second, he can access all devices on the process level. An example:

A user operates unmanned stations all over a country. Thanks to the zenon SNMP Server he always knows about the state of field devices, PLCs and the complete HMI/SCADA application. For example: an unmanned facility can quickly reach a critical state if an application fails without being noticed. With the zenon SNMP Server, this failure is reported immediately and the operator can react quickly and efficiently.

The zenon SNMP Server accesses all process relevant devices, gets their variable values and forwards them to the Network Management System; which in turn evaluates and displays parts of the process image of the control system and reacts accordingly. There is even an active notice when the zenon application quits.

By the way, zenon comes with its own SNMP driver and can thus act like an NMS. This means that users can choose: integrate zenon in the existing NMS – or use zenon for monitoring right away.

Head of Support Wolfgang Moser: "With the new SNMP Server, zenon can be integrated into IT Network Management Systems. Once more, COPA-DATA makes sure that the user has a perfect overview over the running processes and that he can react quickly. This delivers better security and a more efficient use of resources."

Reinhard Mayr, Product Manager zenon
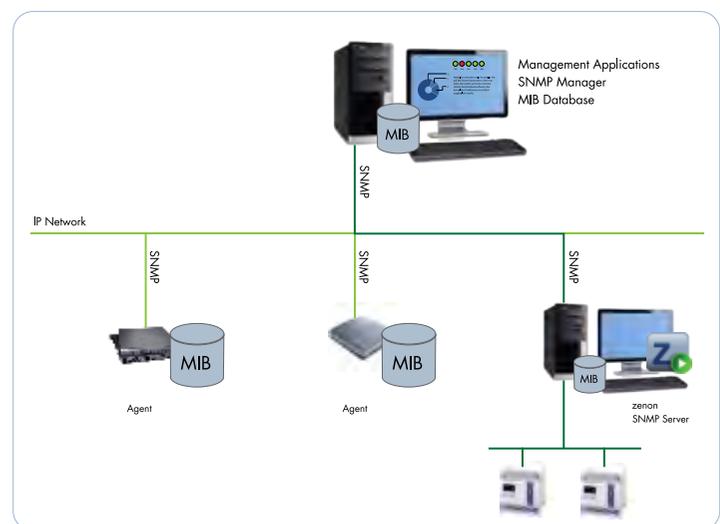
Network management system

USERS ASSIST USERS

In order to provide our customers with the best possible support in their work with zenon, we have added another service. In the middle of September 2007, we launched the COPA-DATA Internet Forum.

What is a Forum, how can I use it and what is the use anyhow? I would like to answer all these questions in this article.

Forums did not develop during the rise of the Internet; they have a long historic background. Back in the ancient Roman Empire, nearly every important city had a forum (from lat. forum, market square). It was the intellectual, political and religious center of the community. The Romans located these squares at the junctions of important roads and decorated them with temples and great halls, which emphasized the importance of these locations. The most popular forum was probably the Forum Romanum, which stood in the center of the political power of the ancient Roman Empire!

During the rise of the Internet, this form of communication was rediscovered – in a more virtual style. An Internet forum provides a virtual place for discussions and for exchanging opinions, thoughts and experiences. The obvious advantage of a virtual Forum is its location-independence. No matter where you are in the world, you can participate, provided that you have Internet access. Every Forum deals with a certain topic and is divided into several smaller sub forums, for a better overview.

FORUM COPA-DATA
However, if you want to use the COPA-DATA forum in its entirety, you have to register first. If you are already a registered user on our

Homepage, you can skip this step, because you are automatically allowed into our forum. The registration allows you to perform the following actions in the forum:
- Open new threads
- Answer threads
- Change your own posts
- Receive notifications for posts and threads of your choice
- Enter events into the forum's calendar
- Create a "buddy list" to see which of your friends are online

Of course, the COPA-DATA forum is focused on zenon and straton. It is divided into two main parts: the "Product Support" and the "General" area. In the "General" area, you can talk about off-topic matters or create your first threads and posts in the "Sandbox" and get to know the forum in a playful way. In "Forum Issues", feel free to tell us your opinion about the COPA-DATA forum.

The area "Product Support" is divided into the following sub forums:
- Installation
- Engineering and Project-Planning
- Data-Acquisition
- Network, Messaging
- VBA
- CE, Display and Operating
- straton
- Energy
- General Support Requests

In each sub forum, you can find a short description of its purpose.
Threads that cannot be assigned to any of the above categories should be placed in "General Support Requests".

HOW THE COPA-DATA FORUM WORKS
On top of the forum, there is a blue navigation bar that contains the most important commands. Click "User CP" to access your profile settings. You can deposit a photo or avatar here, which will clearly mark the posts you created. Click "FAQ" to access the basic questions and answers regarding the use of the forum.

Click "New Posts" to get an overview of the threads/posts created since your last visit. "Search" allows you to perform a global search for threads in the entire forum. "Quick Links" offers you a range of useful functions like "Today's Posts" or "Who's Online", which shows you the users that are logged in at the moment. "Log Out" means exactly what it says ;-)

If you are browsing a forum, e.g. VBA, you can take part in the discussion simply by clicking "New Thread". You will get at a little editor box for writing your post. The editor is very straightforward and easy to use – it even has a preview option. Feel free to test the editor and play around with it a bit; you can use the sub forum "Sandbox" mentioned above for this. The threads created there will be deleted automatically after a certain time.

At the bottom of a sub forum, there is some important information. You can see the moderators of the forum there, as well as an explanation of the symbols used. In the little box "Posting Rules" , you will get to know which possibilities you have at the moment, as a logged-in user. The Sticky Threads, which always stay on top of a forum, can be found in some sub forums and contain very important information. In the VBA sub forum, for example, you can always find the current VBA documentation and the current object description in a Sticky Thread.

Because of the international orientation of this forum, it is entirely in English. Users are also encouraged to write their contributions in English. However, if you do not want to write threads/posts in English, you can also write them in German or any other language.

AND WHAT ABOUT THE SUPPORT TEAM?

If you are now thinking, "Why should I use the forum? I can simply call the Support team!" You are right. The COPA-DATA Support team will always be there for you.
But the forum is an inspiring extension. Users can now exchange thoughts directly with other zenon users. They can discuss problems, exchange experiences and share discoveries and insights with each other.

All threads are stored permanently and will grow into a comprehensive pool of problems and solutions. If a user solves a problem, his or her insights are available for all other zenon users, worldwide and at any time. Time zones do not matter any more!

When creating threads, a certain Netiquette is required. Our moderators will watch out and make sure that contributions are neither offending nor inappropriate.

There are a lot more things to discover in the forum; there is not enough room to explain all of them in detail here. This is why I would like to invite you to register and discover the COPA-DATA forum. You will find many useful things for your daily work with zenon and straton there.

And for those who are already curious, I have a task! In "General > Forum Issues", there is a survey "Would you use this forum?" Please take part in this survey, it requires exactly two clicks and is a good practice for your first steps in the COPA-DATA forum.

↪ *Wolfgang Moser, Technical Consultant Manager*

zenon and straton as a DCS system

Jürgen Resch, Product Manager straton

With its "Integrated Solution", COPA-DATA has been addressing the topic of Distributed Control System (DCS) for a long time. DCS is about the combination of HMI/SCADA functionality and PLC logic.

The combined engineering of visualization and control offers many unexpected advantages and a completely new way of creating projects. The goal is to always do as little work as possible. Which means, in this case: Automatic programming.

Below, you will get an overview about the status quo of developments and you will learn what the single engineering steps look like. Any type of hardware can be used as the PLC target system, from a 16 bit microcontroller to a Dual Core high-end processor. straton runs on any hardware. This turns the "Integrated Solution" as a DCS system into a universal DCS System.

In the beginning, there is the zenon symbol. It delivers information about the function required in the process. At the same time, this function must be visualized. In zenon, this works as follows:

01	Drag and drop the according symbol into your picture. A dialog pops up and asks for the name of the object.	
02	You can see that the correct variables were created if the dynamic elements of the symbol show the maximum of the value range. Now, jump to the straton Workbench. You will immediately see the correct entries in the variable list:	
03	• Motor_91 of structure data type "Motor" • Motor_91_FB an instance of the function block "MotorBlock2".	
04	Just connect the variable and the function block and your work is done.	
05	Now, simply assign the variables to the inputs and outputs of the PLC. At the moment, you still have to do this manually, but we are planning to automate this as well. Finally, the PLC code and the HMI/SCADA files are transferred to the target system.	
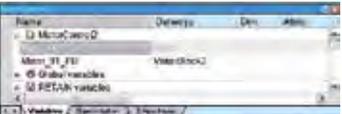
Drivers for Siemens Simotion®

The main goal of automation is to enable the automatic execution of workflows. This requires the transformation of electronic and logical signals into mechanical movement at some point in the automation chain.

These movements used to be simple pneumatic or hydraulic movements, also often the activation and deactivation of unregulated asynchronous motors. But with the growing demands on cycle time, it became more and more important to make very exact movements in the shortest possible time. Additionally, movements of variable length or with a variable speed profile were required.

All these facts paved the way for programmable axis controllers. These controllers used to control only very simple motor movements. They have developed into highly intelligent and freely programmable controllers, which are in no way inferior to traditional PLC systems, sometimes even outmatching them in terms of complexity.

ZENON CONTROLS SIMOTION® VIA TCP/IP

The "historical" Sinumerik® was already a first step in this direction, even if it was highly restricted to pure CNC tasks. With the Simotion® series, Siemens now offers an axis controller that integrates seamlessly into the modern automation landscape with its Ethernet interface. Problems with connectivity had to be overcome.

COPA-DATA accepted this challenge, closed the gap and enabled a comfortable and secure connection to the Simotion controller for its customers.

For this, COPA-DATA developed a new driver that allows access to all functions of the Simotion and also offers maximum conve-

nience for engineering by importing data point lists. What is essential about this is that Simotion is not S7. The communication via TCP/IP very much resembles the communication of S7; some communication packets may even be able to establish connections. But the main function of the Sinumerik – concerning the axis controller – is withheld from the user, unless you use zenon.

With zenon, you have full read and write access on both the S7 compatible programmable part and the specific axis controller part. Actually, even more than that, in the zenon Editor, you can automatically import the data point list from the Simotion Scout – the engineering tool for the Simotion axis controller – into the zenon project.

Just one click – and the data point list is imported. Of course, the usual filtering, sorting and merging functions are supported. And – as usual for native zenon drivers – this is possible without any third-party components like Simatic Net or the like.

As you can see, zenon greatly facilitates the connection to axis controllers – even for Siemens controllers. Other "candidates" like Elau have already been included for a long time. Equally simply of course.

↺ *Günther Haslauer, Development Manager*

Less "C", more "PLC" for distributed controller

Soft PLC makes controllers easier to program

Some problems have an unexpected and simple solution. That is what SYSTEM, an Italian provider of industrial PLCs, has found out. After experiencing problems during an industrial control project, they switched to the flexible PLC core straton and enjoyed new and helpful programming features at an interesting price. straton is provided by COPALP, the French partner of HMI/SCADA system developer COPA-DATA in Salzburg.

The people at SYSTEM Electronics were used to implementing PLCs in embedded C. However, they could not fulfill every customer requirement with that. SYSTEM started looking for a new programming solution for their DICO line of DIN rail mounted Distributed Industrial Controllers. Their current system was programmed using C, which required the use of a specialized C compiler for the 16 bit on-board processor.

SYSTEM knew that some of their customers and staff would appreciate the possibility to program with standard PLC logic. They did not want to attend to low level coding, nor spend their time programming C when they would rather be implementing a control system. Now COPALP got involved.

COPALP recommended switching to the flexible PLC core straton and managed to persuade SYSTEM Electronics of the many advantages this would deliver. The Company is now able to offer their customers a very flexible, but affordable industrial controller that can be programmed with all five IEC 61131-3 standard programming languages.

TAILOR MADE PLCS

SYSTEM's EX controllers are well equipped for rugged plant floor operation, featuring 2 Ethernet (10/100) ports, 4 serial ports and 2 CAN interfaces. Their customized real time operation

system (RTOS) includes TCP/IP support and Web support.

These controllers are now available with either C or straton programming options. Customers opting for straton programming benefit from the support of all 5 languages of the IEC 61131-3. It is also possible to automatically generate C code in straton, in applications where maximum runtime efficiency is required.

MORE POSSIBILITIES WITH STRATON

Engineers were surprised to find that straton was not simply a PC-based PLC, but caters for a broad range of hardware platforms. straton not only worked on the 16 bit processor, but is light and leaves sufficient resources for very capable control programs.

After a single day's training at COPALP, Sassenage (France), engineers at System were confident that the straton workbench and the debugging tools provided made development easier. They found that they could draw on their experience of programming hardware PLCs to implement control on their processor quickly and easily.

Mario Casali, SYSTEM's Senior Software Engineer, commented, "We were really surprised by the features available within straton, for example our customers can choose from all five

IEC61131-3 languages including ladder logic. I am confident our customers will find the new DICO controllers much easier to program."

SYSTEM tested straton on their new DICO 208 controller first. This controller has built-in support for communications with CAN, Ethernet, serial and other protocols. The engineers found that straton provided ready to use networking support, taking full advantage of the comprehensive communication interfaces offered by the hardware. The hardware and software communications support has extended the role of the DICO. Now the DICO series offers not only an affordable PLC, but also an excellent communications gateway, that converts serial to Ethernet or CAN to Ethernet for example. straton integrates seamlessly with the HMI/ SCADA software zenon. As a result, SYSTEM is now able to offer its customers a combined Controller / HMI. This link between zenon and straton can save hours of programming time, because the variables only have to be defined once. The overall safety of a control system can also be significantly improved because any variable addressed in the HMI is also changed in the Soft PLC; therefore, the data addressed by the HMI is always correct.

SYSTEM now offer straton as an option with all of their EX controllers (708EX, 508EX, 188EX, 208EX) which use an extended x186 architecture that can use up to 16MB of external mem-
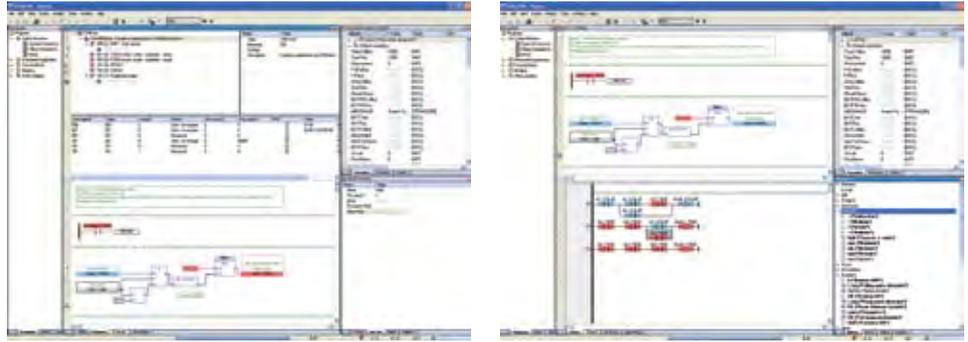
CAN configuration and IEC 61131-3 programming in straton

ory and executes most instructions in one clock cycle (30MIPS). straton not only stands out as an integrated system, it also proves its efficiencies in a Hardware-PLC or controls application over local bus terminals.

VERSATILE STRATON

straton is a PLC system that provides benefits to many manufacturers. It is platform-independent; its architecture and the employed programming language allow straton to run on any processor and any operating system. Software-PLC, Hardware-PLC or bus terminal controller – straton is versatile, flexible, and reliable.

It object-oriented concept simplifies and accelerates the implementation of PLC applications. Structured variables allow you to combined logical and technological units. The structured variables receive the information of the HMI symbols and the PLC functional modules. So the engineer has a clear image of the real processes in the engineering phase. straton supports all IEC data types and also complex data types (structures, arrays and hybrid forms).

MANY COMFORTABLE FUNCTIONS

straton offers many useful features for programmers. Powerful debugging functions - as offered by other professional tools – provide real step-by-step debugging for clean and error-free applications. And by pressing F1, the context-sensitive help gives you immediate

support for the selected element. The integrated Simulation Mode allows you to thoroughly test every new application before releasing it into the wild.

You can also network multiple straton projects in a very simple way. With the so-called "binding", different straton applications on different target systems can exchange data. A powerful and spontaneous data protocol including timestamps provides for high-speed and accurate communication. Security is increased by redundant networking capabilities.

COPALP

COPALP is a part of the COPA-DATA Group and situated in Grenoble (France). They have over twenty years of experience in the development of PLC system kernels and the according programming interfaces. Many hardware manufacturers such as SYSTEM Electronic now rely on COPALP's experience, expertise and short time-to-market. ⌒ *IU*

FAQs

Do you know how "Blockwrite" works? If you don't, don't worry! You are not alone ;-) Our support team listens closely to the questions of our customers. We collect frequently asked questions in our FAQs. Take a look – maybe you will find the answer to a question that you have always wanted to ask. If you do not wish to – COPA-DATA support is always there for you! Or visit our new forum.

Message Control

Can the recipient of a message in Message Control forward this message to a substitute recipient?
A "Not Acknowledge" Code can be defined for every user. If the recipient of a message enters this code, the message is considered as "not receipted" and forwarded to the substitute recipient. An entry in the CEL is made, recording that the message was rejected by the original recipient.

What does the Project Runtime setting "Index Runtime files" mean?
In version 6.21, a so-called "Filewatcher" was implemented, which speeds up searching through a large number of files (e.g. thousands of archive files). The "Filewatcher" is a cache list of all existing files (incl. time stamps) of a folder.
You can activate the "Filewatcher" in the project properties by checking "Index Runtime files".

This feature improves performance, especially in the network and with many files. Loading a large number of files is no longer performed on the level of the Windows file system, but with a cache that is generated when the Runtime is started and that is constantly updated.

For archive files, that means: When archives are loaded in the archive editing picture or in an archive trend, the search through the file list is no longer performed directly in the Windows file system, but in the much faster cache list. Remember that the speed of the Windows file system also depends on the status of the hard disk (fragmentation) and that hard disk access can reduce performance.

Our recommendation: Network projects should generally use this feature because it enables low network timeout times. We also recommend the "Filewatcher" for standalone project with more than 20,000 files.

Environment variables 6.21

Since zenon 6.21, the system files and program files are stored in a central location. The path is hard to remember and in Windows VISTA it is completely different compared to Windows XP. Is there a faster way to get to the right directory?

Yes, since 6.21 SP1, the following environment variables are set during installation:

CD_SYSTEM	(*INI files*)
CD_USERDATA	(*Default path for workspaces*)
CD_PROGRAMDATA	[*Version+SP*] *e.g. CD_PROGRAMDATA6211*
	(*6.21 SP1*) (*Program files*)

You can directly address these variables in scripts or in the file explorer. If you enter %CD_SYSTEM% in the address bar of the file explorer, you jump directly to the system folder where all INI files are stored.

How does Blockwrite work ?
You can activate Blockwrite with an entry in the project.ini file.
[<Driver name>] BLOCKWRITE = 0/1
Blockwrite writes variables to the PLC in blocks; these variables must be written without gaps. For example, this means that write commands for variables (Byte) with Offset 1 2 3 5 6 7 are transmitted in two blocks, block 1 (1 2 3), block 2 (5 6 7).

Blockwrite is never performed in Read-Modify-Write mode, this means it is simply written.
The reason for that is that problems may arise when something changes on the PLC in between Read and Write; in that case, the change is simply overwritten.

Bits are written in Read-Modify-Write mode, which is why they are also not considered for Blockwrite. This means that Bits are always written separately. Bits are written in the following way: Read Byte > Mask Byte > Write Byte.

Whether single Bits can be written or not, depends on whether the protocol supports this. In the HMI protocol, this is only available for markers. 3964R/RK512 with Helmholz Adapter SSW7-RK512 can set single bits. **The Profinet driver in straton cannot browse, but the device can be**

reached. During browsing, there is always an error message.
The Profinet Standard requires a "switched" network. If communication runs over a router, neither browsing nor Runtime communication work.

Is it possible to activate an Auto start function in Windows CE, in order to launch the zenon Runtime automatically?
Activating Auto start in Windows CE works differently on every hardware. Some examples:

BECKHOFF
There is an _autoexec.cmd file in the system folder of the storage-card. Rename the file to autoexec.cmd and add the following lines:
START \"hard disk"\zenonRT\SyssrvCE.exe
START \"hard disk"\zenonRT\zenonRCE.exe

VIPA
Add the following entries to the registry (regedit.exe; START > Programs > Registry Editor) in HKEY_LOCAL_MACHINE\init:
String Key; Launch86; \"Storage Card"\zenonRT\SysSrvCE.exe
Binary Key; Depend86; 14 00 1E 00 32 00 3C 00
String Key; Launch88; \"Storage Card"\zenonRT\zenonRCE.exe
Binary Key; Depend88; 14 00 1E 00 32 00 3C 00
afterwards please save the registry.

B&R
Open the file start.bat and add the following entries:
\harddisk\zenonRT\SyssrvCE.exe
\harddisk\zenonRT\zenonRCE.exe

Kontron CE 6.0
Add the following entries to the registry:
String Key; Launch86; \"Storage Card"\zenonRT\SysSrvCE.exe
Binary Key; Depend86; 14 00 1E 00 32
String Key; Launch88; \"Storage Card"\zenonRT\zenonRCE.exe
Binary Key; Depend88; 14 00 1E 00 32

Wago Think IO

There is an autoexec.bat file on the storage-card1. Open it and add the following entries:
\"storage card2"\zenonRT\SyssrvCE.exe
\"storage card2"\zenonRT\\zenonRCE.exe

Can I prevent some element properties of linked symbols from inheriting?
Since 6.21, this is possible for exported properties. Double-clicking on a linked symbol in a picture starts a Wizard, which can exchange single properties. Exported properties are also marked with different colors in the property window.

How can I make quick and efficient copies from elements in a picture, like text buttons or numerical values?
Click on the element and draw it to its new position as if you would move it. Before you release the mouse button, press and hold the Ctrl key. A copy of the element is created.

I get a message in the Editor indicating that the language table was modified externally. What happened here?
Since 6.21, you get a message if the language tables were modified externally, for example by translators. As a user, you have the option to accept these changes or to reject them. The Wizard for language switch also makes external changes to these files, which is why you get a message here. I you have executed this Wizard, you should accept these changes, of course. ↳ *Wolfgang Moser, Technical Consultant Manager*

Automatic Engineering

Part 3: Automatic Engineering with Excel

In the third episode of our four-part series Automatic Engineering, you will learn how to include data stored in an Excel table into your project.

SCREENSHOT 1

VBA IN EXCEL OR IN ZENON?

First, you should ask yourself whether it is better to write the VBA code in zenon or in Excel, because both applications have integrated VBA.

- If the Excel table is re-created again and again, it makes more sense to create a Wizard in zenon that accesses the Excel table.
- However, using VBA in Excel is simpler and requires less code. We will take a closer look at this option.

CONNECTING EXCEL TO ZENON

The connection is established via the COM interface of the zenon Editor. This interface offers the same possibilities of accessing the object model of zenon as VBA in zenon does.

To make the zenon object model available in Excel, you have to add it to the list of references (VBA editor: Menu – Extra – References). *(Screenshot 2)*

01	Setting standards for engineering (Standardization)
02	Reusing existing project parts (XML Importing)
03	**Automatic engineering with Excel (Creating variables)**
04	Project Wizard with data import from the database or file
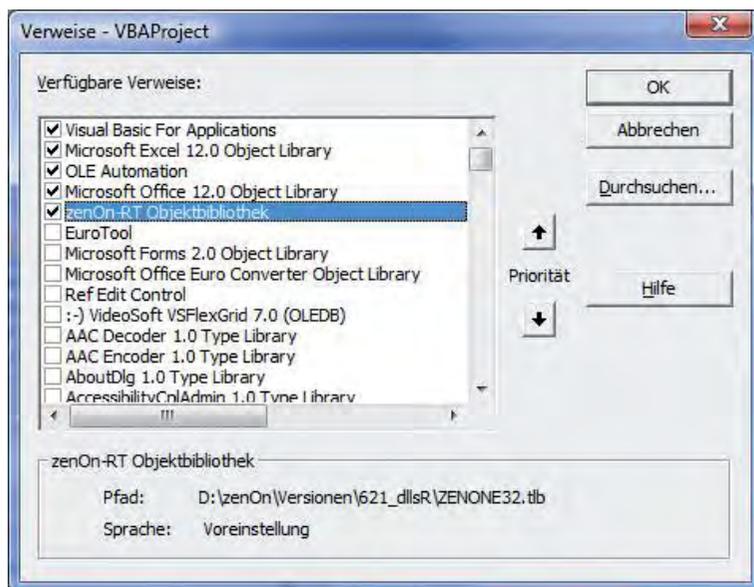
SCREENSHOT 2

The VBA code is created in the class module "ThisWorkbook":

```vba
Dim zApp As zenon.ApplicationED
Dim zPrj As zenon.Project

Function Connect2zenon(strProjectName As String) As Boolean
  'get application object of zenon editor
  Set zApp = GetObject(, "zenon.ApplicationED")
  If zApp Is Nothing Then
    MsgBox "zenon Editor not found or not running!"
    Connect2zenon = False
    Exit Function
  End If
  'get project object of zenon editor by its NAME
  Set zPrj = zApp.Projects.Item(strProjectName)
  If zPrj Is Nothing Then
    MsgBox "Project '" & strProjectName & "' not found or not loaded!"
    Connect2zenon = False
    Exit Function
  End If
  Connect2zenon = True
End Function
```

In this example, a separate function was created, which takes the project name as transfer parameter and returns "TRUE" if the connection to the project was established successfully.

CREATING VARIABLES IN A ZENON PROJECT

In order to create the variables, the Excel table must be processed line by line. In this example, the macro is terminated on the first empty line.

The VBA code is again created in the class module "ThisWorkbook":

```vba
Dim zDrv As zenon.Driver
Dim zVar As zenon.Variable
Dim zVTp As zenon.VarType

Public Sub ConnectAndImport()
Dim lRowCount As Long
Dim strVarType As String
Dim strName As String
Dim strTag As String
Dim lOffset As Long
Dim lBitAddr As Long
Dim lDatablock As Long

  If Connect2zenon("EXCEL _ ZENON") = True Then
    'get/create driver
    Set zDrv = zPrj.Drivers.Item("S7 TCPIP Driver")
    If zDrv Is Nothing Then
      'create driver!
      Set zDrv = zPrj.Drivers.CreateDriver("S7 TCPIP Driver", "S7TCP32")
    End If
    'create variables...
    lRowCount = 2
    Do
      'get VarType
      strVarType = Tabelle1.Cells(lRowCount, 3)
      Set zVTp = zPrj.VarTypes.Item(strVarType)
      If zVTp Is Nothing Then
        MsgBox "Vartype '" & strVarType & "' doesn't exists!"
      Else
        'read data from excel...
        strName = Tabelle1.Cells(lRowCount, 1)
        strTag = Tabelle1.Cells(lRowCount, 2)
        lOffset = Tabelle1.Cells(lRowCount, 4)
        lBitAddr = Tabelle1.Cells(lRowCount, 5)
        lDatablock = Tabelle1.Cells(lRowCount, 6)
        'get variable...
        Set zVar = zPrj.Variables.Item(strName)
        If zVar Is Nothing Then
          'create variable if not exists...
          Set zVar = zPrj.Variables.CreateVar(strName, zDrv, tpExBaustein, zVTp)
        End If
        'configure variable properties...
        With zVar
          .Tagname = strTag
          .Offset = lOffset
          If strVarType = "BOOL" Then .BitAddr = lBitAddr
          .DataBlock = lDatablock
        End With
      End If
      lRowCount = lRowCount + 1
    Loop Until Tabelle1.Cells(lRowCount, 1) = ""
  End If
  MsgBox "Finished!"
End Sub
```

The result can be examined in the zenon Editor after the termination of the macro:
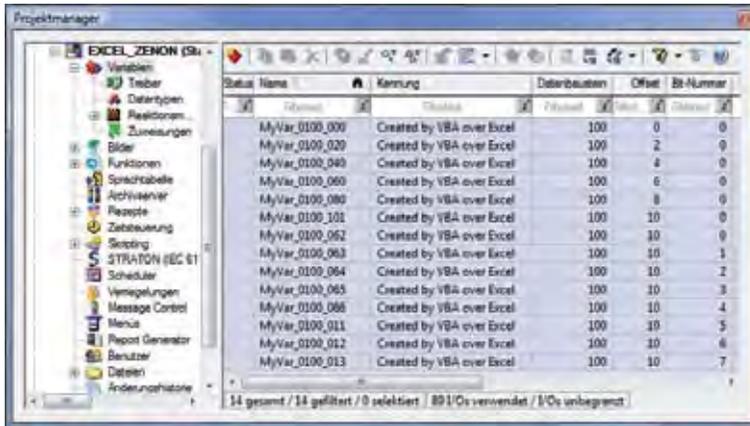
By the way, it does not matter which version of Excel you use (Excel 2007 in these examples), because the utilized feature is compatible.
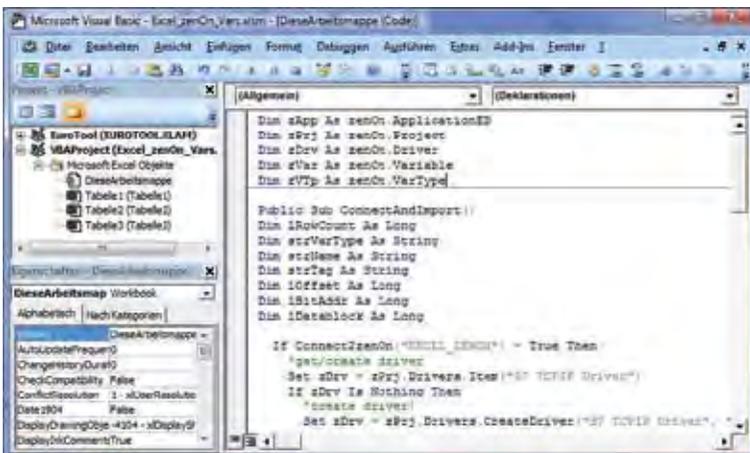
SCREENSHOT 4

IS THAT ALL?

No, of course not! This example can be extended to do a lot more. Just think of alarms (limits). You would need a few more columns in Excel and some additions to the macro.

You can also create or change templates, pictures, elements, functions etc. via the COM interface in the zenon Editor, as long as the necessary data is stored in Excel…

This example has already come to practical use in many different forms – ranging from simple variable declarations to almost complete projects created via VBA and Excel in the zenon Editor.

In the next issue of IU, our topic will be: *Project Wizard with file import from DB or file.*

✍ *Robert Ficker, VBA Specialist*

IU 16

In the next issue...

...you will get to know about the energetic role of zenon in the **BMW Welt.**

... you will read part 4 of our series **Automatic Engineering.**

...we will present our **subsidiaries** in the UK and USA.