

**Information Unlimited**

Magazine for Automation Industry

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# New Horizons

The BMW Group relies on zenOn;  
company-wide

zenOn and the Munich  
Allianz Arena

The integrated world of  
COPA-DATA

**Tipps & Tricks** VBA and Online Variables

**Who is Who?** The international Support-Axis

zenOn at the SPS/IPC/Drives fair

# Foreword

## **New visions-New Horizons-“Off to new shores”**

The COPA-DATA team is still dedicated to the spirit of exploration and discovery. Just by looking at the very IU issue you are holding in your hands, as well as by looking at our new homepage it becomes obvious what a positive and energy-loaded drive prevails at COPA-DATA. That's where these questions occurred to me, “Doesn't all this happen way to fast? How do we deal with changes? How do we integrate the constantly changing world into what we do?”

The formula for success: Flexibility along with the required openness to go the best possible way.

A time when fights about political decisions seem to have shifted to the media spectacle of TV confrontations. A political culture defined by accusations, justifications, phrases and low blows leaves the audience feeling empty.

Still. Something is missing. What about longevity? Which values are held AND lived by? Authenticity! What is left when you take away political eye catchers and media spectacles? This shows us how important the existence of values and keeping them alive is in this world of constant change.

COPA-DATA has regained its total independence, a fact that allows us to go our own way - flexibility and openness even more focussed and free than before. As we all know, what we are today is the result of everything we have accomplished yesterday.

I want to pull up my sleeves right away, so we can become tomorrow what we accomplish today!

*Enjoy this **new** issue of our IU series.*

*Alexander Punzenberger, Vice President*



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# CONTRIBUTORS

## Elke Holzer

A software company that picks someone with a doctorate in Languages and Literature for its Documentation and Online Support is probably still planning a lot. Elke Holzer explains where the journey will lead.



## Jürgen Resch

The topic can be approached from many different angles: Integration specialist Jürgen Resch describes the integration possibilities offered by zenOn and STRATON.



## Hans-Peter Ziegler

Real pfat! Hans-Peter Ziegler draws the balance: 3 years of FAT (Factory Automation Today)—in general and in this issue more in detail.



## Rudi Irran

There is hardly any other field in process automation where there is so much pseudo-knowledge as there is regarding the integration of process in ERP. Development Engineer Rudi Irran explains how it works.



## Robert Ficker

When you reach the systems limits. VBA specialist Robert Ficker tells about the simple possibilities in zenOn for a small cause that has a great effect.



## Markus Stangl

A free ride on the Data Highway. Brand Manager Markus Stangl gives background information, and writes about concepts and functionality of COPA-DATA's new Online-Appearance.



## Reinhard Mayr

Everything was grey yesterday. Product Manager Reinhard Mayr shows how zenOn's Automatic Line Coloring allows users to bring color into life easily AND automatically.

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## IMPRINT

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# Off to new Shores

With the release of version 6.20 SP3 there is some news to tell also from the side of documentation. Finally it's accomplished: After a long planning period and thorough evaluation our documentation isn't based on MS Word files anymore but rests neatly wrapped in the database.

**HOW THE IDEA CAME UP.** Already before the design change in Version 6.20 it was quite clear that Word was not the appropriate tool for writing documentation and for maintenance and administration. What made the situation even more complicated was an increase in staff (internally and externally regarding our translators) and an increased extent of the documentation (if zenOn grows, the documentation grows). Our documentation was on its way to turning into an unpredictable, resource-eating monster. Looking for a solution we soon found out that this was not a problem only COPA-DATA was fighting with, but one that frustrates other companies as well. Like many others we also felt like the targeted increase in quality was sometimes obstructed by the administration effort.

Where there is demand there is supply. However, the editorial systems for creating technical documents do not come in mass production and are therefore rather "valuable". The idea of having to buy such an expensive product, even though all the necessary competences for such a product are available in-house, just did not appeal to us. That is when the idea "docu brand new" came up and support from the other COPA-DATA departments started flowing in.

**READY, SET, GO!** Günther Haslauer was trusted with the database development, and Sebastian Kritzinger worked for months on realizing our idea of the "perfect front end". Then it was up to us again: with a lot of hard work we worked the complete documentation (almost 1000 pages per language) into its new home, the docu-database.

**THE LAST PUSH.** After the successful "relocation" we started the long desired quality improvement – finally we could get started! Driven by wave of enthusiasm our expectations in the front end rose continuously. Suddenly ideas for improvement came in from all sides and finally we could implement them. The final polish. For a last time our team grew: With a lot of

woman power Eva Plainer supported us with design ideas in order to help us give our new online-help a brand new look.

**THE YIELD.** We had long been aware of the problem. Information that's available in the help function, but is not easily found by the user. We are facing the challenge: Provide help right where it is needed. Who hasn't had the experience of being forced to stop in the middle of a workflow just to reluctantly switch to the online help. Our goal is not just to offer help to the customer, but also to bring the help to the customer. Our customers shouldn't have to search - they should find.

A sparking idea that we have put into action for trial immediately: The dialogue help. It is now provided in addition to the online help and the embedded help. In the feature selection, for example, a short help notice for each individual function is now automatically shown in the dialogue. The new dialogue helps take the information directly where it is needed without requiring an interruption of the workflow to switch over. We dedicated a mini-chapter to the "Searching in and especially the finding things in our help". This includes a description of all search functions that are supported by our Online help. In the "Newcomers" chapters and also in the extensive overview chapters there

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*„The best part about this solution is that we did not have to buy an expensive external editorial system, but instead were able to initiate an internal co-production by four of our departments..“*

*Elke Holzer, Head of Documentation*

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From left to right: Günther Haslauer (Head of Development), Elke Holzer (Head of Documentation), Sebastian Kritzingner (Support), Philipp Struchtrup (Documentation), Raimund Awender (Documentation), Eva Plainer (Design). Not in the picture but also involved: Stefan Marchhart.

are convenient links that allow our customers to concentrate entirely on their engineering instead of wasting a lot of time searching. Integrated directly into the help for newcomers, we have videos, mini-viewlets that introduce the zenOn Editor with all its windows and give a short introduction into the functions of the various modules in the project tree. For newcomers we have also integrated the videos into the help. It is mini-viewlets that first introduce the zenOn Editor with all its windows and then give a short introduction into the functions of the various modules on the project tree. There is also a small project that can be re-engineered by the viewer afterwards. The videos have been included in the online help and offer a short introduction for newcomers that can start engineering immediately. zenOn basics in 20 minutes!

Our translators, all of whom are zenOn insiders and therefore secure the quality, have the possibility to access our database right from their workplace (wherever it may be) and do their translations on their own schedule.

Special care was given to allow for timesaving in the creation of the Online-help – until now a very time-consuming process. Now it's different! After just ten minutes the newly created help can be thoroughly tested. The time that is saved (and we are talking about one week of work-time per language) now can be used where it should be used: in tests and improvements.

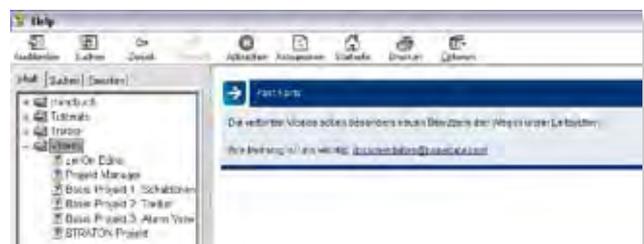
**COST/USE.** Structural changes of course do not only serve the purpose to make life easier. Moreover, it is about the actual purpose of documentation: To offer the user help that really helps. Help that lets him solve problems and learn new information and that also represents our corporate philosophy. The documentation should be a figurehead. Just like the product zenOn itself, the help has to give a feeling of quality, progress, flexibility and security.

So, how does the user of the help benefit from our efforts at the end? Was the right decision made? Did all the effort pay off?

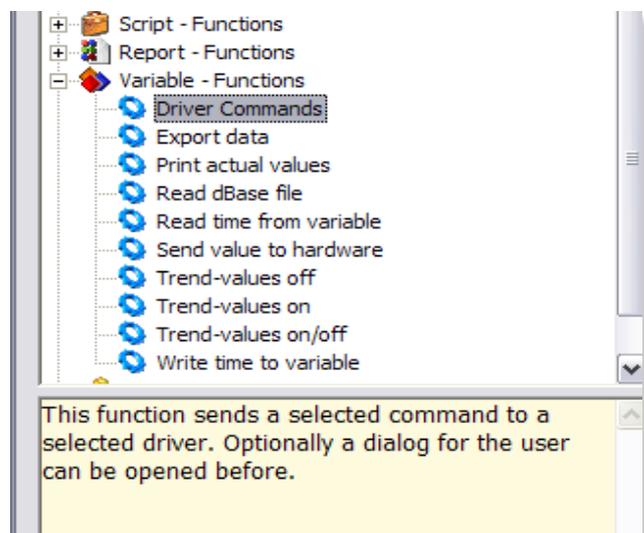
Are we going the right way? Only you can decide... If you would like to give us your feedback, just contact us! Your feedback is important to us: [documentation@copadata.com](mailto:documentation@copadata.com)

SAVING THE BEST FOR THE LAST. We just got started. There is so much more to come. ☺

*Elke Holzer, Head of Documentation*



For the first time there are Videos integrated in the Online help.



The dialogue help for features offers help right where the customer needs it.

zenOn manages security  
and reliability at all production plants

# The BMW Group relies on zenOn from COPA-DATA company-wide

The BMW Group has chosen to use zenOn software solutions for their plants world-wide, with immediate effect. The reason for this long-term decision—zenOn has already proven its value in daily use and BMW are confident it could increase efficiency and productivity considerably across their plants.

After an intensive evaluation of all leading HMI/SCADA systems, the BMW Group decided in favour of world-wide implementation of zenOn®. The visualization solution of COPA-DATA GmbH has already successfully operated the surface technique across the BMW Group for 5 years, with more than 1.500 installations. “This is another milestone in our successful business development. This long-term partnership reaffirms the trust earned by the European software house COPA-DATA.”, Jürgen Schrödel, Managing Director of COPA-DATA Germany explains.

## **COPA-DATA PREPARE FOR THE FUTURE.**

With the decision to use zenOn® company-wide, BMW Group has entered a strategic partnership with COPADATA. For car production, the automotive specialist chose the contractor who could offer the most standardisation, and thus create the greatest possible internal synergy between operations. Furthermore, the automotive manufacturer requires a universal solution from the plant pictures to the alarm management. This universality not only increases quality, but also the overall productivity of their equipment. As zenOn® 6.20 can be used on all Windows operating system and platforms, from Windows CE up to Windows Server 2003, a transparent flow of information throughout

the company network can fully be guaranteed. Supervisory control to operator terminal transparency offered by zenOn makes it possible for the production team members to come to the right decisions at any time irrespective of their location.

## **COPA-DATA STANDS FOR COMPETENCE AND RELIABILITY.**

Besides COPA-DATA's automation expertise, soft skills have also proved important for the BMW Group: “With more than 50,000 installations we could prove our reliability as well as our technical competence. We will continue in this way in order to realize our long-term goal of expansion.”, COPA-DATA Manager Jürgen Schrödel explains.

## **HMI/SCADA TECHNOLOGY THAT INSPIRES.**

For the operation of machinery, plant and handling equipment, BMW Group specify a B&R Windows CE platform. The various process visualisation options and important production data are particularly powerful here. Local operator terminals can be defined as network projects with a single mouse click, the high-capacity client / server architecture forming the basis for plant-wide use. zenOn®'s highly regarded seamless redundancy guar-



© BMW AG

antees the highest possible availability. Integrated sequence chain diagnostics provides the control status of a production sequence at a glance. In the case of a malfunction, zenOn also displays the graphical link status beside the predefined message text. Implemented heuristics ensure the user is automatically informed about the most probable reason, simplifying maintenance and improving equipment productivity considerably.

#### **SECURITY AS THE CLOSING BID.**

The alarm management with escalation methodology implemented in zenOn is considered as leading the HMI/ SCADA systems market. zenOn® analyzes all incoming equipment malfunction messages in a centralised equipment monitoring platform and displays it according to the individual users' requirements. For example, effectiveness and efficiency of equipment is implemented graphically using a Pareto chart. Optionally, the alarms can be stored in an ODBC compatible database. All responsible personnel can access the desired data via the company network. Here, a complete and secure user administration is very important. The user permissions are administered according to FDA Part 11 rules. Based on an Active Directory integration, access to the company-wide Windows network is even possible. Fur-

thermore, the zenOn software offers many functions to find and manipulate the latent production potential within the same intuitive graphical development environment. "zenOn is a unique universal tool. COPA-DATA will deliver more than 7,000 licenses to the BMW Group and help with know-how, expertise and commitment. The BMW Group stands for 'recognizing potential and designing growth'. Together we have recognized our potential, and based on a clear strategy we will transform this into joint success", manager Jürgen Schrödel concluded. 

# Events

## What happened previously....

### Marketing Meeting

That was two exhausting but very effective days. This is about the new style guide that Eva Plainer had designed and carried out, as well as about the new modern look for our website, Markus Stangl's responsibility, and it's also about the spirit of expansion into the USA, just to name a few things from our new line and strategy. True to our slogan "Innovation through tradition", we will again prove that we are a team that keeps on moving. You are sure to find that out for yourself soon. A first step has been made with the SP3 release of zenOn 6.20.



### Sales Meeting 2006

At this year's Sales Meeting distribution experts from 12 different nations participated. The focus of this meeting was on planned international strategies for 2006 and 2007 and an exchange of experiences with our partners. A special highlight was a presentation done by our Romanian partner Kreatron Automation, who succeeded in winning Pepsi as a customer for zenOn. Mr. Staneker from the company Festo was at the meeting to present his company's application of zenOn. Later on, the presentation of our new design line and the new website was received with a lot of applause, as it shows that in this field COPA-DATA is way ahead! Just like last year the meeting followed a two-day zenOn training in which the improvements of SP3 in zenOn 6.20 were demonstrated. As usual the meeting was quite comprehensive and conveyed a lot of information and input for the near future.



Robot Bar at the Automatica Expo

### Automatica 2006

Simply a MUST for everyone interested in robotics and automation. 800 participating companies from 38 countries presented their innovations. This year the visitors got to see something special: the Automatic Bar. A bar that automatically mixed cocktails and served drinks to visitors – developed by the technical college in Vienna in cooperation with COPA-DATA and the companies Keba, Epson Germany, Montech and Motoman Robotec. Students of the technical college specializing in Mechatronics and Robotics had, together with the above-mentioned companies, created the fully automatic bar for the expo-organizer Automatica. By the click on the Keba touchscreen that showed visualizing solutions by COPA-DATA, the visitors could choose and order drinks. The cool beer is poured and served by two Montoman-Robots, while the Cocktail Robot built by Epson can mix sixteen different cocktails. Thanks to the sophisticated

linear handling system developed by Montech, the right drinks were served to the right guest. Well, then "Cheers!" True to that theme interested visitors from all over the world gathered at the bar.

... and what is still to come.

#### zenOn at the SPS/IPC/Drives

Convention center Nürnberg  
November 28<sup>th</sup> - 30<sup>th</sup>, 2006. Hall 7, booth 594

#### zenOn at the SCS Automation & Control

Paris Nord, Villepinte  
December 5<sup>th</sup> to the 8<sup>th</sup>, 2006. Hall 5a, booth P15





# Competence instead of competition

At their Symposium from May 9<sup>th</sup> to 11<sup>th</sup>, 2006 the five partners of Factory Automation Today (FAT) scored again with solution-oriented speeches and discussions

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Once again the five partners of Factory Automation Today (FAT) have successfully put together an interesting, user-focused 3-day program for their visitors. The main focus of this year's symposium was put on universality in planning and engineering, as well as security and safety.

## DIRECTLY TO THE USER.

The program started with this year's HMI's trends – presented by Thomas Rilke (Representative of the German Messe AG in Austria). A special plus of this cooperation that has existed since FAT was founded: the visitor gets to “visit” the HMI without ever having to go there.

The following speeches gave an impression of an automation solution from planning all the way to the completion. All this demonstrated by looking at the example of the company Fischer Ski, the most successful ski brand in this year's Olympics in Turino with 70 medals. All speeches evolved around Fischer's requirements for an increase in production.

With reference to these requirements the partners explained all of the important aspects of engineering the production plant, as well as its installation and operation. Regarding the complex

topic of Visualization, Mr. Stefan Reuther from COPA-DATA explained, “For us the main topic is an absolutely clear machine operation and all that it requires.” The right visualization helps to avoid possible dangers more effectively.

## SUCCESSFUL EVENT

The event was first held in 2003. Since then the five cooperating companies Bernecker + Rainer (B&R), COPA-DATA, Eplan, Hirschmann and Rittal can look on a yearly increasing interest in this event. The five companies had started their cooperation in order to be able to satisfy the growing need for interconnected information and tailor-made collective solutions. With the motto “Competence instead of competition” more than 400 regular visitors have attended during the last three years. ☺

*Hans-Peter Ziegler, Sales Austria*



The FAT Team

# SAP® Interface

When it's about ERP many people first think of SAP. Now the dream of easily transferring process data from the zenOn control system into SAP R/3 is finally coming true!

The transfer of data from the control system into ERP systems of third party producers has always been an important aspect in the development of zenOn. For a short time it has now been possible to transfer data directly to SAP R/3 systems. In the first versions SAP's RFC-API is used, and future development is planned to support additional interfaces to SAP R/3. In the short term a connection through MQ Series and R/3-Link is planned - in the long term there will be a connection via XI (Exchange Infrastructure).

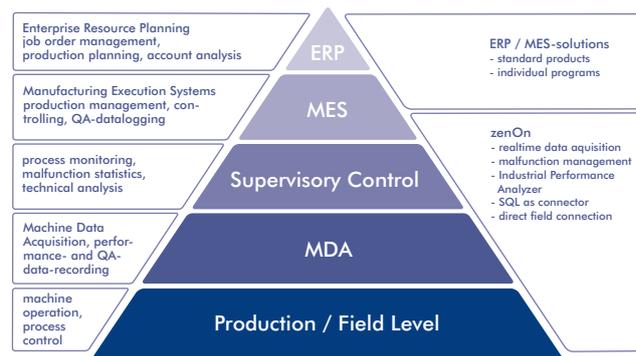
**SAP RFC-API.** SAP's RFC-API allow the execution of actions by calling up function modules. Function modules are programmed in the SAP-specific ABAP programming language and are either already included in the system upon delivery or can be customized by the customer. Transferring data to and from the function modules happens through several parameters. Data, consisting of lists or tables, are transferred into internal spreadsheets.

**CONNECTION TO SAP R/3-SYSTEMS.** A class library has been created that is supposed to allow an easy handling of the RFC interface and serve as a basis for further development. All of the following applications use this class library.

**PROTOTYPE.** An ActiveX-Control served as the first prototype. It was integrated into the zenOn protocol through a Standard ActiveX-Element. The ActiveX-Control allows to receive zenOn alarms and to generate a corresponding alarm message in the SAP R/3 System. It also allows for collection of cyclical values of variables and the transfer of them as measurements or meter readings into the SAP R/3 System.

**CONTROL ROOM SYSTEM »WAKOS«.** In a next step the Control Room System WAKOS that has been developed by COPA-DATA and is in use in the BMW plant, is upgraded by a direct interface with the SAP R/3 system.

WAKOS saves all zenOn alarms in a database where they are at your disposal for later analysis. Additionally the control room manager can categorize incoming alarm messages. For those alarms that are categorized as "major failures" there is a failure message generated in the SAP R/3 system where it triggers a work order for the elimination of the problem. Through the cat-



The Vertical Integration collects data in real time and makes it available company-wide.

ategorization of failure messages it is possible to assign them to specific people or work places.

**SPONTANEOUS FAILURE REGISTRATION-TIMED COLLECTION OF MEASURED VALUE.** The next step in development is an independent application that connects to the zenOn Runtime through a COM interface. This allows one to register alarms and to transfer them to the SAP R/3 system. Additionally it is possible to generate from current values of zenOn variables measurement records and meter readings in the SAP R/3 system. The collection of the measured values is controlled by various time schedules which can be freely configured on the surface of the application. © Rudolf Irran, Development

# Automatic Line Coloring

Easy animation of networks or processes in process technology? No problem: Thanks to the optional module Automatic Line Coloring such requirements can be realized quickly and easily.

The automatic line coloring allows easy dynamization of electrical lines and switches in process technology as well as in energy distribution. This can be used for everything from liquids to flows, networks and overview representations, etc.

This allows an easy and quick visual support of complex processes. The user can see at a glance the current status of his process technology. This makes the operation and administration of complex processes a lot easier.

Due to engineering in the process pictures the entire line structure with all its connected elements (switches, valves, generators, users, etc.) can be displayed as a model and the resulting media flow during runtime can be depicted.

The shown picture is a simple example of an energy supply. The line coloring happens automatically in the color of the active supply source.

The line coloring is always in accordance with the current condition of the displayed switch elements in the network. If a switch is opened, the elements behind it are not colored in the colors of the source.

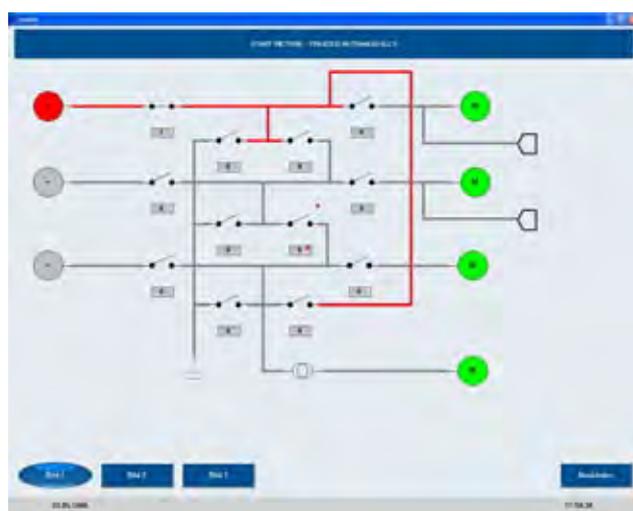
This model is not limited to individual pictures. As there is always a general model for the entire network, the color information can be adopted from picture to picture.

This allows the easy depiction of complex models in detailed pictures. This functionality also enables a great overview in the world picture and the overview pictures.

Within the system the functionality is available in the following elements:

- The Combi-Element: used for depiction of elements in the model (such as switches, sources, etc.). Additionally any desired symbols and graphics can be used. This allows an entirely individual graphical design of models.
- Lines, poly lines, pipes: used to depict the connections. These elements can automatically show the color of connected, active sources. ↻

Reinhard Mayr, Product Marketing



Automatic Line Coloring, included in zenOn standard since version 6.20 SP3.



Jürgen Resch, Product Manager for STRATON talks about the goals that have been reached in the development of STRATON and about coming challenges.

# The integrated world of COPA-DATA

With the introduction of zenOn's generation 6.0 in 2003 the integrated solution zenOn® including STRATON® was introduced. The title "Intelligent Integration" stood for the possibility to make STRATON variables visible and usable in zenOn by a mouse-click.

**SINGLE-SOURCE.** The variable that is branded as O&M (operating and monitoring) in STRATON is transferred from the STRATON database into the SQL-database that is managed by zenOn. This way the O&M variable is visible in both systems. When there is a change in the O&M variable (name, data type) it is automatically and event-based changed in both systems. This clearly shows the advantage of a Single-Source such as the zenON SQL database.

With the introduction of zenOn 6.20 it has become possible to define O&M variables based on complex data types (structure).

The complex data types are just like the O&M variables administered by the zenOn SQL database and are therefore visible in both systems, zenOn and STRATON

**SPEED.** Integrated systems not only have to score with easy handling of O&M variables during engineering but also have to show advantages for the Runtime. The connecting link between zenOn and STRATON in the Runtime is the STRATON-driver integrated in zenOn. This TCP/IP based driver is automatically generated when a STRATON project is created. The driver is au-

tomatically configured with the communications parameters of the STRATON target system. This kind of comfort can only be provided by an integrated system.

During Runtime the STRATON Runtime communicates with zenOn Runtime only when the value of a variable is changed. A condition for this kind of spontaneous communication is the so-called Event Server in the STRATON runtime system. The Event Server checks in each cycle if the value of a O&M variable has changed. Of course it also takes into account any hysteresis that has been set in the zenOn variable properties. Compared with polling drivers the spontaneous operation allows a very quick and efficient communication.

**INSIGHT.** For a quick insight into the active STRATON SPS Code the so-called Online Diagnosis was developed. The animated SOS Code is shown in the zenOn window. This way stalled step sequences can be understood in order to find out why a certain transition was not interconnected.

Additionally variables can be forced, e.g. to establish a certain condition, to allow a transition to be interconnected. The forcing of variables can be totally blocked with a password.

These protection mechanisms can also be used for insight into programs.

**OBJECT-ORIENTED ENGINEERING.** The future of efficient engineering lies in giving the engineer the possibility to think in terms of facility components. Combining single components in logical units (e.g. PID-regulator) or technological units (e.g. engine, robot, conveyer belt, tank,...) for their description in the control or in the visualization makes engineering easier, safer and faster.

zenOn has long been offering the so called symbols. Starting with version 6.01 the symbols can comfortably be dynamized with structure variables. The property hierarchical names in connection with the object name of the symbol searches the zenOn variables list for structure variables that correspond with the object name (structure root) and the element name (structure element). With this functionality the symbol is dynamized within seconds.

The structure variable is the common denominator between zenOn and STRATON, as the structure variable exists in the variable lists of both zenOn and STRATON.

The equivalent of the zenOn symbol is the function component in STRATON which equals the functionality that is connected with the symbol. This shows another one of STRATON's fea-

tures: function components in STRATON can assume a complete structure – a big help to the engineer and another proof positive for the integrated solution.

**SHARED ENGINEERING.** An integrated system proves its efficiency by offering the possibility to generate HMI/SCADA-applications and SPS-applications with one single tool. In a simple integrated system the distribution of competences between HMI/SCADA engineers and PLC-programmers would result in a serial work process. zenOn solves this problem by offering shared engineering. zenOn projects can be defined as so-called multi-user projects. This way it is possible to work on STRATON projects on a different work place independently of the zenOn project. The cooperation between zenOn and STRATON goes so far as to show O&M variables that are blocked from adaptation in the zenOn project also as blocked in the PLC programming environment of STRATON.

**A LOOK AHEAD.** In order to meet future requirements of engineers the development of the integrated solution between zenOn and STRATON has to be carried further. There will have to be an even stronger coupling of zenOn and STRATON in regard to symbols and function components. It will be possible to generate only one of the two elements (e.g. just the symbol) manually in order to automatically generate the other one (e.g. the function component).

All this happens in the name of increasing the efficiency and the resulting minimization of time to market or time to customer.

 Jürgen Resch, Produktmarketing

# Who is who?

## CHRISTIAN HÜBNER



**Responsibilities at COPA-DATA:** Since September 1<sup>st</sup>, 2006 I have been a test engineer at COPA-DATA in Ottobrunn, Germany, where one of my responsibilities is the support of customers and system partners. **Born:** I was born on February 2<sup>nd</sup> 1977 in Wippra im Harz, Germany, in the most beautiful mountain area of Germany. I grew up in Hettstedt and have been living in Munich since May 2003. **Career:**

After school I learned to be an energy electrician and worked for a few different companies. Before I started at COPA-DATA, I went to the Technical College in Munich focusing on Energy and Automation Technology. **Hobbies:** Biking, skiing and my motorbike **Books:** I know those things, they are at home on the book shelf. **Music:** A little bit of everything, but it has to be listenable. **Motto:** Carpe diem!

## ROBERTO DE ECCHER



### **Responsibilities at COPA-DATA:**

Since 2002 I am responsible for COPA-DATA Italy's Technical Support, as well as for on-site training and support right at our customers.

**Born:** April 14<sup>th</sup>, 1981 in Eichholz, Trient, Italy. Still living in Eichholz.

**Sign:** Aries

**Career:** In a one-year SCADA-course I learned about programming systems such as Visual Basic and Visual C and some SCADA systems such as MOVICON by Progea, FACTORY LINK

by US Data, RS-VIEW by Rockwell, CX-SUPERVISOR by Omron, TeMIP by Compaq and of course zenOn. Before I joined COPA-DATA I had worked for a year as an electrician for a small company. This gave me a chance to gain some practice in the world of automation. Then I joined the support team for Hotline support and training at COPA-DATA Italy.

**Hobbies:** All kinds of sports: Biking, Soccer, Body Building and everything that has to do with cars and engines. And lots of beer and wines! :-)

**Books:** What is that? Well,... I have only read Mickey Mouse!

**Music:** Everything...well..Techno, Disco, Pop & Rock!

...the  
international  
support-axis

## TOBIAS SEDLMEIER



### **Responsibilities at COPA-DATA:**

I have been with COPA-DATA GmbH in Ottobrunn, Germany since April 3<sup>rd</sup> 2006. As a test engineer I support customers and system partners.

**Born:** I was born in the Bavarian capital Munich on May 15<sup>th</sup> 1980 and grew up in Pfaffenhofen on the Ilm.

**Career:** I graduated from the Technical College in Biberach in Building Automation / Clima Technology. During the last two semesters I specialized in building automation. I wrote my

thesis while at the Munich Airport about "Integration of open DDC devices into the Munich Airport's proprietary GLT (building control system) system."

**Hobbies:** Sports (Ice Hockey, Inline Hockey, Biking,...), Oldtimers.

**Books:** Good Crime Stories

**Music:** Reggae, but also good Rock music.

**Motto:** Keep smiling

**MATTEO LISSA****Responsibilities at COPA-DATA:**

Since February 2006 in COPA-DATA Italy's Technical Support.

**Born:** April 31<sup>st</sup> 1981 in Bozen, Italy. Living in Leifers (BZ).

**Career:** Before I joined COPA-DATA I worked at A.S.C. as an ANSI C programmer and at Progea as a Visual Basic programmer and SCADA supporter.

**Hobbies:** All kinds of sports, especially Basketball and Biking. I love to watch movies and sometimes make

my own furniture for my house.

**Books:** I like Fantasy and historical Novels.

**Music:** Everything, especially Rock, Heavy Metal and Punk, but I also like to listen to classical music!

**Motto:** Nessun lungo viaggio puo essere concluso senza l'ultimo passo. Se ti accorgi di aver fatto uno sbaglio, fai un passo indietro. (No long journey can be ended without the last step. If you find you made a mistake, take a step back.)

**AXEL NETUSCHIL****Responsibilities at COPA-DATA:**

Product manager and contact for technical questions in Northern Germany.

**Born:** March, 2<sup>nd</sup>, 1978 in Goslar am Harz. Grew up there as well.

**Career:** During my studies at the college in Braunschweig/Wolfenbüttel I got in touch with zenOn for the first time at Volkswagen when I wrote my thesis. My topic was the creation of a system to collect information on energy flows and failure messages in

the VW plant in Salzgitter. I've been working at COPA-DATA since February 1<sup>st</sup> 2005. After a one-year training at the site in Ottobrunn, I've been working at a new site in Cologne since April 1<sup>st</sup>, 2006.

**Hobbies:** A lot of jogging, swimming, biking

**Books:** no particular favourites

**Music:** Everything good...it can be quite rocky!!!



*We are happy about our  
colleagues' new babies: Jakob  
Helbok (born May 29<sup>th</sup>, 2006) and Alina  
Wintersteller (born March 25<sup>th</sup>, 2006).*

# COPA-DATA universality online with its new website

With the release of the new website in May 2006 COPA-DATA sets new standards even in the Internet by presenting global information in a brand-new and user-friendly design.

After almost a year of preparations the new COPA-DATA website finally went online in May 2006. The most noticeable difference clearly is the new design, but the new website also offers more functionality to the user.

Work on the new website started in spring 2005 – with a long list of requirements: It was supposed to be an international site that adequately presents COPA-DATA as a company as well as its products zenOn and STRATON. It was important to follow the company's values such as openness, independence, flexibility, innovation and quality also in the Internet appearance. A brainstorming within the company ended with several square meters of huge mind maps. Additionally many of our customers and partners participated in an online-survey and gave us important input regarding their expectations in a new website. With the help of external web specialists Intervis a model on how to proceed was developed and in several iterations the concept for a new website was developed.

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*“The new website is the most important sign of a change in paradigm at COPA-DATA.”*

*Markus Stangl, Brand Manager*

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**PROFESSIONELLE WEBSITE.** Clear structures, lively design, no commercial banners, etc.

**IMAGE AND INFORMATION.** The page meets rational as well as emotional expectations. Special focus is put on very detailed information – a fact that moves the image more into the background.

**SIMPLE AND INTUITIVE.** The navigation offers a static frame that is easy to remember and modern navigation elements such as Textual Separators. Teaser elements additionally support the user in his/her navigation.

**FLEXIBLE NEWS AND TOPICS.** Offers context specific information such as success stories relating to the individual product information.

**MEMBER-AREA.** Offers a highly dynamic content such as downloads, the forum and much more.

**YOU CAN'T TIE A KNOT WITH JUST ONE HAND.** In order to allow several editors worldwide to work on and maintain the content of the new website we decided to use a Content Management System (CMS). We chose the open source system Type 3, as it is considered one of the best currently available systems and offered us the freedom in design and function that we needed.

**STRUCTURED DESIGN, BASED ON THE CONCEPT.** COPA-DATA's first and best address for good design, Eva Plainier, developed the draft-concept, an appealing design. This con-



Home, Clarks Success Story



Home, Allianz Arena Success Story

cept was then worked out in more detail and finally optimized by usability experts. Also the search engine marketing was adapted with some external help. Then, in May 2006 the German and the English website went online.

THE WEBSITE IS DIVIDED INTO 5 MAIN SECTIONS **COMPANY.** Under the titles Who we are, What we do and Where we go you will find all kinds of information on the values and competence of our company and information on our partners, as well as references, contact addresses and the company history. **PRODUCTS AND SOLUTIONS.** This sections gives insight into our product philosophy and a detailed description of our products zenOn and STRATON including a list of all zenOn control connections. **INDUSTRIES.** A selection of the various industries that use zenOn and examples of how zenOn and STRATON perfectly fulfil the requirements of the individual industries. **SERVICES.** With the Information Services COPA-DATA offers an overview of news, dates and success stories. The individual issues of Information Unlimited can be found here as well. The Implementation Services supports the user in his work with zenOn by offering a manual, tutorials, training and videos. The Client Services offers a direct connection to our technical support specialists. **MEMBER AREA.** Registered users can log into the interactive world of the Member Arena where they can – depending on their authorization level – find manuals, tutorials, driver documentation, product updates and much more.

#### A LOOK AHEAD

We will keep on working on further extending the services. An extensive user forum is planned, as well as a knowledge database, online training, and several additional languages such as French, Italian, Chinese, with many more in preparation. Please visit us at [www.copadata.com](http://www.copadata.com) – Welcome! ☺

*Markus Stangl, Strategic Marketing*

“For us it was very important to find a CMS which would offer the most in functionality and allows a simple maintenance of the contents at the same time.”

*Philipp Struchtrupp, Webadministrator*

Football's dream team for 2006:

# zenOn and the Munich Allianz Arena



The ultra-modern Munich Allianz Arena stadium is a perfect example of how to manage and experience football events in the 21st century. In the stadium, fans experience the beautiful game in a bristling atmosphere with great comfort, supported and informed by the latest in high-tech building automation coordinated by the zenOn HMI/SCADA system.

In 2006, the Munich Allianz Arena is hosting the most significant event in the football calendar. Over 60,000 guests have already experienced how well prepared it is for this job during the opening on May 31 and June 1, 2005 – since then hundreds of thousands more fans have visited.

The ultra-modern stadium is enclosed by 6,500 sq. m of food and beverage and adventure areas, including a Lego-club for children and conference rooms fed from Europe's largest interconnected parking facility with approximately 9,800 parking spaces. From the entrance and admission facilities and the multi-color moving acrylic roof to the complex building control system, the Allianz Arena shows how a diverse, complex modern stadium can be simple to operate with the right technology. A team of high-tech companies ensures that everything works perfectly.

Besides the “automation unlimited” from COPA-DATA GmbH, other companies contributing to the dream team included:

- VA Tech Elin EBG who provided the entire lighting and a large portion of the building control technology.
- SKIDATA developed an admission system with 169 stationary card readers and over 70 handhelds that can guide up to 65,000 visitors to the right seats.
- btd Telekommunikation realized a high-performance data processing center with roughly 6,000 ports for the numerous needs of the Allianz Arena.
- covertex was responsible for the manufacture and installation of the nearly 3000 air cushions for the acrylic roof which can also illuminate in multiple colors.
- zenOn provided the centralized control and visualization to integrate the suppliers as a team.

#### **COACH: ZENON**

zenOn® software was selected to visualize and control the entire project. zenOn is a Windows platform independent, open control system with over 250 connections to diverse SPS and hardware components developed in-house. Good communications proved an enormous advantage for the construction and operation of such a large network with so many sensitive tasks in the Allianz Arena.

Regardless of which hardware cooperates with what, which message arrives where, and which actions are repeated across the whole network, zenOn controls and coordinates. The main task for zenOn in the Allianz Arena was to centralize all of the

substations and connections between the other named suppliers in a zenOn integration project. Seamless organizational operations for a game are easily pre-programmed on a single PC. The operator simply enters the time and date into a wizard, and all the required automations are implemented. For the Allianz Arena this means thousands upon thousands of data points, VBA macros, controls, bus terminals and much more are controlled, combined and monitored. Actions and alerts for operators are also created by the project level wizard.

#### **WHAT IS A MATCH DAY FOR ZENON LIKE IN PRACTICE?**

Starting a few hours before the beginning of the game, the ventilation systems in the esplanades, the parking and the HVACR (Heating, Ventilation, Air Conditioning and Refrigeration) systems are automatically activated and regulated. Once the visitors drive into the parking garage, the entering and exiting vehicles are counted and when one level is full they are automatically directed the next level, elegantly avoiding traffic jams. Running parallel to this, admission control logs how many people enter at each gate and how many guests have left again. Not only does this largely avoid bottlenecks during admittance, the visitor statistics as calculated seamlessly.

Naturally, the monitoring of power supply, ventilation, the smoke alarms and many of the activities in the large network are part of the building control system. Should a malfunction occur anywhere in the Allianz Arena, an alert is automatically generated and reported to the relevant modules. This allows the technicians to react quickly and precisely to any warnings so that operation is smooth and visitors are never aware of what is happening behind the scenes.

#### **ZENON AT WORK**

All these messages, commands and controls along with a few thousand data points are fed into the network, prepared and archived into readable files, creating a seamlessly controlled and trouble-free operation as possible. Modules such as the Enhanced Trend Module (ETM), Archiving, Alarms, Scheduler are used in addition to standard SNMP drivers and Beckhoff integration drivers. VBA macros and many other built in features of the zenOn open control system have contributed to the project's success. The Allianz Arena is ready for the teams and their fans! 



## Who doesn't already know them, problems with a small cause and a huge effect...

The zenOn Runtime is running, project changes are loaded, a project is updated and then, out of the blue, an error message.... "Runtime error 91, object variable or with block variable not defined." How can you avoid such a problem or get a grip on it? The object "Online Variable" is required in order to monitor and react to value changes of variables.

If a project is updated and a user form is newly opened, the above error message occurs if an "Online Variable" with the used name already exists

Example (UserForm):

```
'DECLARATION OF THE CONTAINER OBJECT
Dim WithEvents zOLV As OnlineVariable

Private Sub UserForm_Initialize()
'CREATE, START
    Set zOLV = thisProject.OnlineVariables.CreateOnlineVariables(„TEST“)
    zOLV.Add „Internal _ UINT _ 001“
    zOLV.Add „Internal _ UINT _ 002“
    zOLV.Add „Internal _ UINT _ 003“
    ....
    zOLV.Define
End Sub

Private Sub zOLV_ VariableChange(ByVal obVar As IVariable)
    ,Ausgabe: „Variablennname = 123“
    Debug.Print obVar.Name & „ = „ & obVar.Value
End Sub
```

In order to get a grip on the problem, there are several solutions

**1. Making sure that the Online Variable is always deleted and the object is always released.**

```
Example (UserForm):
Private Sub UserForm_ Terminate()
'STOP, DELETE, RELEASE OBJECT
    zOLV.Undefine
    thisProject.OnlineVariables.DeleteOnlineVariables („TEST“)
    Set zOLV = Nothing
End Sub
```

## 2. In case the Online Variable already exists, delete it and regenerate it.

```
Private Sub UserForm_Initialize()
'CREATE, START

'DELETE, if OnlineVariable exists...
For i = 0 To thisProject.OnlineVariables.Count - 1
    If thisProject.OnlineVariables.Item(i).Name = „TEST“ Then
        thisProject.OnlineVariables.DeleteOnlineVariables („TEST“)
        Set zOLV = Nothing
        Exit For
    End If
Next i
'CREATE NEW
Set zOLV = thisProject.OnlineVariables.CreateOnlineVariables(„TEST“)
zOLV.Add „Internal _ UINT _ 001“
zOLV.Add „Internal _ UINT _ 002“
zOLV.Add „Internal _ UINT _ 003“
'...
'START
zOLV.Define
End Sub
```

## 3. Another option is to reuse an already existing Online Variable

```
Example (UserForm):
Private Sub UserForm_Initialize()
'CREATE, START
Set zOLV = Nothing
'if OnlineVariable exists, then reuse...
For i = 0 To thisProject.OnlineVariables.Count - 1
    If thisProject.OnlineVariables.Item(i).Name = „TEST“ Then
        Set zOLV = thisProject.OnlineVariables.Item(i)
    End If
Next i
'Create new if not exists
If zOLV Is Nothing Then
    Set zOLV = thisProject.OnlineVariables.CreateOnlineVariables(„TEST“)
    zOLV.Add „Internal _ UINT _ 001“
    zOLV.Add „Internal _ UINT _ 002“
    zOLV.Add „Internal _ UINT _ 003“
    '...
End If
'RESTART
zOLV.Undefine
zOLV.Define
End Sub
```

Of course the examples are only useful if one understands the VBA Code. It is important to recognize the problem in time; otherwise the zenOn Runtime can be influenced by the VBA error. This is not meant to deter you from using the Online Variables! This technology works much more effective than all others as it is event-controlled.  *Robert Ficker, VBA Specialist*

