# SPEED

## The VIPA Journal

Company Newspaper of VIPA GmbH No. 5 | February 2013

SPEED7 Studio

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Hardware configuration

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## Important release of the management

### VIPA strengthens its market position with its integration into the Yaskawa Group


Dear ladies and gentlemen

Since 20th November 2012 the company Yaskawa Europe GmbH has held the majority share of VIPA Ltd. through the planned shareholder change. Yaskawa Europe GmbH is an independent subsidiary of the Japanese Yaskawa Electric AG, one of the leading global manufacturers of frequency converters, servo drives and industrial robots.

By the market entry with Yaskawa we fill an important gap in our product portfolio, which guarantees a sustainable growth in the future and will strengthen our market position as a system supplier. Yaskawa for its part completes its product portfolio by involving itself in the field of PLC technology and can build on existing distribution channels with a strong market position and a good image in the field of machinery and plant engineering.

We will continue to operate on the market as VIPA with our name, corporate identity, trademarks and products and to serve our customers and partners as usual. So your contact persons in sales and application will still be available.

The preservation of our independence, the durability of the commitment and the resulting synergies for us were crucial when choosing a partner. We are convinced that we have found this partner in the company Yaskawa.

In the future Yaskawa and VIPA will be working together on complete automation solutions, so we will be able to offer complete solutions starting whether PLCs, drives, or robots. I still will be CEO and shareholder at VIPA and Profichip to successfully continue the path of many years. The flexibility, speed and innovation power of a middle sized company combined with the security of a technological worldwide operating enterprise will remain unchanged.

I look forward to continuing our successful cooperation with you.

Your Wolfgang Seel
CEO VIPA GmbH

## SPEED7 Studio

***Detached via own software tool***

**VIPA has become big and popular as a hardware supplier who produces components and systems that are programmable and configurable with Step7 from Siemens. Now the company is launching its own automation framework.**

The existing philosophy can be expressed very easily: The focus of their own innovations was compatibility with Siemens systems regarding software and partly also the design. The first self-developed solutions were compact systems. In 2003 a completely new technology called SPEED7, the then fastest Hard-PLC in the industry, came onto the market.

The product developed quickly to a class of controllers of its own, which on the one hand was compatible with existing standards and on the other hand defined its own standard by the integrated SPEED7 technology in terms of speed, interfaces and memory.
At the same time it became clearer and clearer that the usage of the existing software tools from Siemens combined with the possibilities of VIPA hardware could only be used with limitations or very inconveniently:

- So the SPEED7 CPUs have more retentivity flags, additional organisation modules, integrated communication processors and Profinet or Ethercat master functionalities that require a configuration tool.
- The use of the Speed bus, besides the classical serial backplane bus, ensures a fast communication with the input and output modules and the communication processors. This is not available in any other systems and hence makes them cumbersome to configure.
- The new I/O system SLIO with the networking via Profinet, Ethercat and Profibus will soon have powerful SPEED7 CPUs which simply have to be configured and programmed.

So an engineering tool was required with which these components combine to a system on the one hand and on the other hand allow the technical possibilities of the VIPA controllers to be used without detours.

### The development goals

One of the targets of the development team was to filter the best out of the existing software worlds that are VIPA, Simatic, IEC and IT and fit them together to a new framework. Ultimately specifications arose with following development premises:

- The focus as a user is on the programmer.
- The user interface has to be intuitive, clear and up to date and has to have preinstalled elements from the library.
- The user interface must enable the immediate start into the configuration and programming without having to learn a software from basics.
- The syntax of S7 programming should be implemented.
- The editors STL, FBD and LAD and later SCL should be part of the framework.
- The existing and written code, for example of a Step7 CPU, should be imported and hence continue to be used.
- Editors and debug tools should simplify the finding and the diagnosis of bugs, already during the programming and later during installation.
- An integrated visualization with preinstalled elements from the library
- The software should be scalable, equipped with variable level that can be adapted to different skills of the programmers whether basic, standard or advanced level.

In terms of structure the following was required:

- Consistency: Homogeneous engineering whether hardware configuration, communication and programming, or visualization.
- Multiuser capability: Central data storage enables parallel working on a project.
- Scalability by easy plug in mechanism.
- Multilingual: Easy language switching in the middle of the programming process.

An engineering tool was created that consistently visualizes the entire automation process from hardware configuration via communication and programming up to visualization. Intuitive user interfaces enable immediate access into different modules – so additional tools from third-party suppliers for hardware configuration, networking of different field buses, programming or visualization and operation of the installations are not required anymore.

### Up to date technologies as a basis

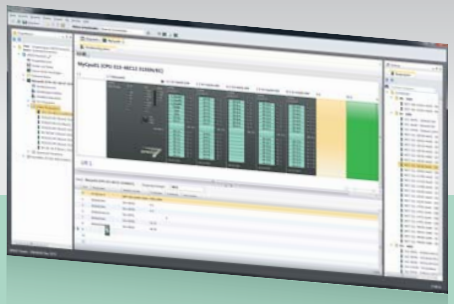
During the development of the engineering framework the newest technologies and tools such as .Net 4.0 and vector based UI visualization with Windows Presentation Foundation were applied. Hardware configuration, networking, programming and visualization use the central, SQL server based database. So, for example, it is possible to access the variables of the controller directly during the implementation of the visualization without the requirement of data synchronization between different tools. With the database approach SPEED7 studio is already prepared for the creation and management of multi-user projects and version management.

All graphics used are vector oriented and are used for example for the photo realistic display of the modules and so enables zooming without loss. All graphical user interfaces are multilingual – so with SPEED7 Studio it is also possible to switch the language of the surface and menus during programming to simplify working in an international environment. By using the latest software architectures it is possible - if required - to expand the range of functions of the engineering tools via plug-in mechanisms, or to adapt to new requirements.

## The program modules

### The hardware configuration

The hardware configuration itself was not reinvented. But now it is possible to configure VIPA controllers which have Speedbus, Profibus, Ehtercat or Profinet as well as Speed7 CPUs, communication processors or SLIO-I/Os with all VIPA-specific parameters without detours, whereby the required variables in the CPU are created automatically.
The users are supported by pre-defined devices templates during the configuration of the hardware that can be inserted in the appropriate space by Drag&Drop. The user maintains the overview by colored markings.
During the parameterization of the modules, values which do not correspond to the default values or are faulty are color-coded; the ToolTipp gives additional information about Min, Max or Default definitions.
As the display is based on vector oriented

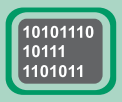


graphics, the photo realistic display of the modules contributes highly to the clarity – the user sees the hardware in front of him which enables very intuitive work.

### The networking

The configuration of the networking via Profibus, Profinet and Ethercat with VIPA's own tool does not require any fieldbus specific knowledge. Rather the SPEED7 Studio makes different device templates available that are used to configure the networking

graphically. With the devices templates it is possible to effect an executable configuration quickly or to implement changes.
The device templates include the VIPA 300S CPUs, the SLIO Profibus and Ethercat interface modules, the Eco panels, the Professional panels and the analog and digital 300S and SLIO I/Os.




### Programming

For programming the programming languages STL, FBD and LAD can be used, the realization of SCL is

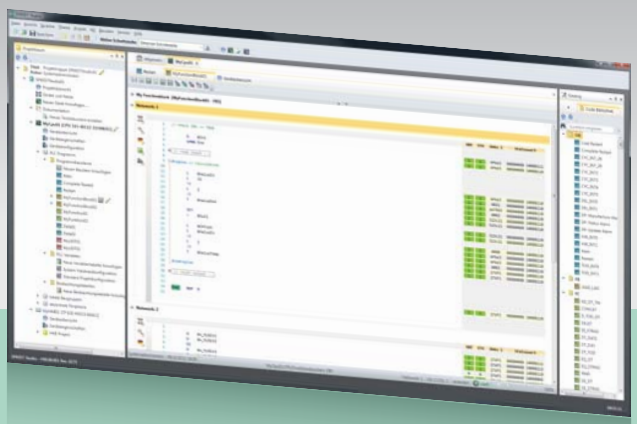


*Figure 3:*
*Programming the functional blocks: The programming by means of STL, FBD and LAD is realized, SCL will follow*

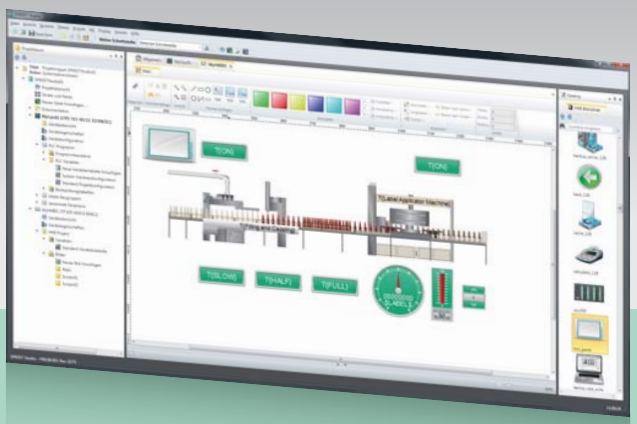


*Figure 4:*
*The visualization of a filling plant (cutout): pre-built elements simplify the design.*

under preparation.
As a structuring support in the textual programming through syntax highlighting, for example, comments, commands, symbols or jumps are distinguished by color. Additionally notes are stored in the code or „Regions“ are defined to allow a clearer display of the STL.

Different colors are used for various groups of modules in the graphic programming language simplifying the functional allocation.
The syntax check occurs “on the fly” already during the input of the program code. Thus the input is permanently checked and possible errors are immediately indicated to the user. For diagnosis the latest values can be seen online in the chip or in the monitoring chart.

Also a history and a trend graph are available here.

### The visualization

With SPEED7 Studio the user has the possibility to create a web-based visualization. For this the SVG graphic editor is available to create single pages. Pre-built elements from the library make the design particularly easy. The central data storage in the engineering tool also allows access to all variables of the controller.
The visualization created is not only accessible via a conventional touch panel, but additionally via all browser capable mobile terminal devices as Tablet PCs or Smartphones. Only a Java capable web browser is required.

Further features of the tool are the loss free, zoom capable SVG vector graphics, pre-configured dynamizations and objects, object-oriented parameterization and scripting on client side.

### The target group

On the one hand the target group are users, who completely deploy VIPA hardware and want to find themselves in the familiar S7 world.
But on the other hand the typical Simatic user, who already deploys VIPA and Siemens in mixed configurations, should also be addressed by the framework because for him the “mixed operation” makes things simpler. For this reason it is planned to put selected Siemens components into the hardware catalogue in the future.

The third target group is represented by VIPA‘s hardware brand label partners who are able to use the tool completely in their own design. They get a programming and configuration tool tailored to the hardware they use by means of the modular design and scalability.

### The prospect

With SPEED7 Studio, VIPA presents an engineering tool that consistently shows the entire automation process from the hardware configuration via the communication and programming up to the visualization. Here the framework is not intended to show or replace a TIA portal from Siemens, but to ideally deploy VIPA controllers and components as a small and fast tool, while retaining the familiar S7 syntax.

The framework is the “software backbone” for future VIPA developments. The planned portfolio expansion towards Safety Control and Motion can be supported effectively in terms of programming and configuration.
Especially the application level of the customer will be supported stronger in the future. The user will be able to develop modules for his plants or applications by ready-made application modules with which he can then configure his machine or system completely by Plug&Play.

VIPA also will provide pre-fabricated templates and technology libraries for various applications and solutions in the future that can be implemented directly into the project by the customer including configuration and programming. ■

*Authors:*
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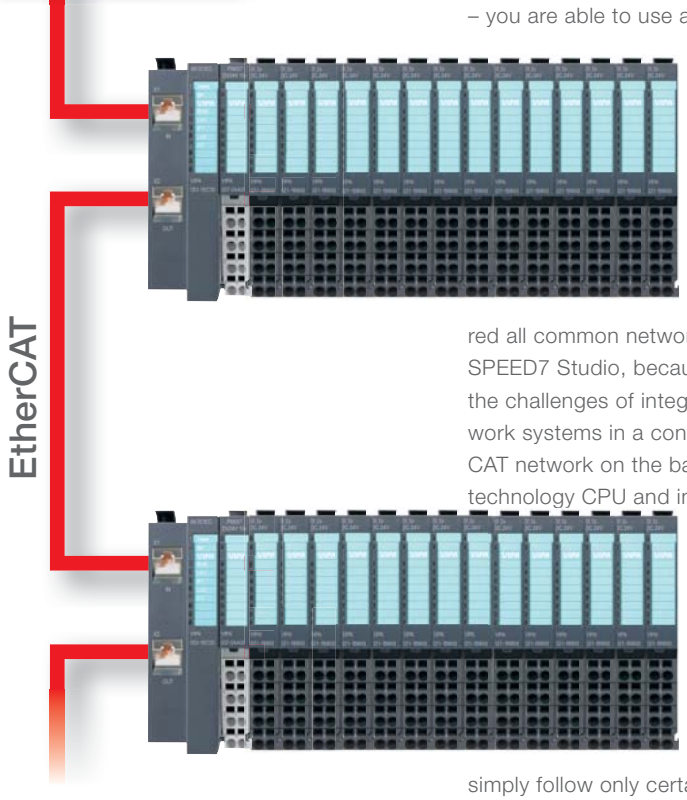
***Norbert Schlimm***

*Takeover of the editorial text of Nov. 2012 of the journal Computer&AUTOMATION, illustrations: VIPA GmbH*

# EtherCAT - 300S family still growing

***New CPUs for the entire integration of EtherCAT into the S7 world***


**VIPA always considers the interests of its customers and searches for solutions that didn't exist before. So VIPA lives up to its reputation as an innovative open-minded thinker of the automation world and advocate of open systems. With the new EtherCAT CPUs we build a bridge between the SIMATIC world and the EtherCAT network. It sounds easy, but it is not! This development was only possible due to the knowhow of many years in the world of automation. Of course, as a user you also use the performance benefits of the proven SPEED7 technology.**




## SPEED7 studio for the complete use of EtherCAT

When you deploy our new framework SPEED Studio – which we particularly recommend – you are able to use all advantages of the latest EtherCAT communication in the familiar S7 environment immediately, without delving into EtherCAT networking technology.

We have considered all common network technologies in the SPEED7 Studio, because we know exactly the challenges of integrating different network systems in a control system. An EtherCAT network on the basis of an embedded technology CPU and in the familiar look of S7-300 did not exist!

With this VIPA proves again, that we know what the market and our customers require and do not, as often maintained, simply follow only certain enterprises in terms of technology.

## Increasing importance of the EtherCAT technology

EtherCAT is an industrial Ethernet bus system for automation technology, starting from simple systems with few components up to large, distributed and modular systems with connection to the office world. The increasing importance of EtherCAT comes from the rapidly growing diversity of the EtherCAT components. Viewed worldwide, EtherCAT, measured by the number of registered members in the ETG (EtherCAT Technology Group) has already caught up with PI (PROFIBUS & PROFINET international, formerly PNO). VIPA is represented with products in both of these large areas of technology. The excellent technical features speak for EtherCAT, as well as the large available product range of various producers. The drive system is represented with a variety of solutions based on EtherCAT. According to ETG, EtherCAT is not recognized by many producers as an additional fieldbus system in the area of components, but is integrated directly as a system bus

EtherCAT is an open technology. Specifications, technical data and software tacks for slaves are available for all members. The distribution of EtherCAT in Asia is particularly widespread.

Enough reasons, therefore, for VIPA to be involved with this topic. After all, it was to use this technology in the proven S7-300 design. Ideally for an EtherCAT network, the VIPA CPUs 315EC/317EC is completed by the decentralized system SLIO with the already available VIPA EtherCAT slave coupler 053-1EC00. ■

EtherCAT®

# New PROFINET CPU

## 300S PROFINET CPU for a cost-effective start

**With the CPU 315SN/PN ECO VIPA expands its already large CPU range with SPEED7 technology by an additional version for an inexpensive access into the S7 world combined with a PROFINET network. Here the customer requirements of fitting the technical functions of the CPU to the real necessities were considered. The new CPU offers a low-priced addition to the already existing VIPA PROFINET CPUs.**

PROFINET®

Of course, the CPU 315-4PN33 is based on the proven SPEED7 technology like all other CPUs of our 300S family. The functionality of this ECO-CPU concentrates on PROFINET.
With the integrated work memory of 512kB this CPU joins seamlessly into the entire range of our CPUs from the 300S family. The performance is as good as the performance of other 300S CPUs:

- MPI and PtP interface
- High speed at the signal operation
- Less cycle times
- High number of realizable connections
- Proven S7-300 type

With the attractive price of this new CPU we want on the one hand to enable the low-priced access into the S7 world combined with PROFINET and on the other hand to round off the CPU range with an additional version.

**We connect your automation worlds with...**

....impressive clock rates
....high data throughput
....minimum cycle times
....easy installation
....flexible possibilities of expansion
....easiest connection of the entire automation world from the drive up to the sensor

**One producer - many languages.**
**We know your requirements** ■

## The new CPUs at a glance

| |  315SN/PN ECO |  315SN/PN |  317SN/PN |  315SN/EC |  317SN/EC |
|---|---|---|---|---|---|
| **Work memory from** | 512 kB | 1.024 kB | 2.048 kB | 1.024 kB | 2.048 kB |
| **Work memory up to** | 512 kB | 2.048 kB | 8.192 kB | 2.048 kB | 8.192 kB |
| **Loadmemory** | 512 kB | 2.048 kB | 8.192 kB | 2.048 kB | 8.192 kB |
| **SPEED-BUS** | - | - | • | - | • |
| **Ethernet PG/OP Interface** | • | • | • | • | • |
| **Integrated Ethernet-CP** | • | • | • | • | • |
| **PROFINET** | • | • | • | - | - |
| **PROFINET I/O Devices max.** | 128 | 128 | 128 | - | - |
| **PROFINET Realtime Class** | 2 (RT) | 2 (RT) | 2 (RT) | - | - |
| **PROFINET Shared Device Control** | • | • | • | - | - |
| **PROFINET Cycletime min.** | 1 ms | 1 ms | 1 ms | - | - |
| **EtherCAT** | - | - | - | • | • |
| **EtherCAT Slaves max.** | - | - | - | 128 | 512 |
| **EtherCAT Distributed Clocks** | - | - | - | • | • |
| **EtherCAT Hotplug** | - | - | - | • | • |
| **EtherCAT bus cycle time min.** | - | - | - | 500 µs | 500 µs |
| **Interface 1** | MPI | MPI | MPI | MPI | MPI |
| **Interface 2** | PtP | DP Master, DP Slave, PtP | DP Master, DP Slave, PtP | DP Master, DP Slave, PtP | DP Master, DP Slave, PtP |
| **DI / DO / DIOs** | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - |
| **AI / AO / Pt100** | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - |
| **Counter / PWM / Frequency measurement** | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - |

# TM-C Router

## Teleservice line from VIPA continues to expand

**Besides the devices of the TM-E and TM-H series we have focused on serving customers who may not always need all features of the standard devices.**

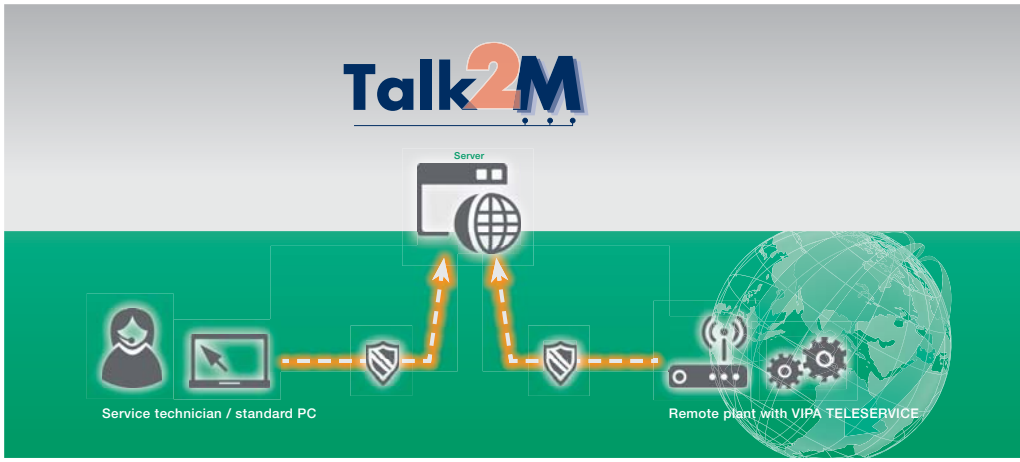
In many conversations with our customers we found out that in many cases a simple remote maintenance is sufficient. The access to the controllers and panels via Ethernet, MPI and PROFIBUS is standard in all our teleservice modules. Tag polling, alarm management, customized webpages are additional features that are used by our customers extensively, but these features are not always required.

The new **TM-C router** mainly distinguishes itself by its lean web interface. “Less is often more”. From this point of view it was important, to keep the web interface for configuring the device as lean and user-friendly as possible. With only a few clicks the configuration for communicating with your controllers is done and the remote access is ready.

The access itself occurs via a LAN/ADSL connection, which in combination with the cost free Talk2M service is an unbeatable solution. Here we give our customers the possibility to access the secure broadband remote maintenance without having to worry about safety certificates or other safety critical points.

The TM-C router is fundamentally different from other devices of the series TM-E and TM-H. It has a lean web interface for easy configuration, in order to concentrate on the real remote access and to effect communication only via a LSN/ADSL-Talk2M connection. Users, who want to equip their machines and systems with intelligent broadband remote maintenance are absolutely on the right track with the TM-C router. And if more is indeed required the devices of the TM-E and TM-H series are available.

**M2Web** - cost free access on your machine via smart phone & tablet PC. After the presentation of the new and smart SMS and Email functionality in July 2012 VIPA went a step further: Access to your system data via smart phone and tablet PC.




From now on this new feature is available for every user of the VIPA Teleservice modules in combination with the Talk2M service – and it is cost free.

Already since the launching of the VIPA Teleservice modules (TM-E and TM-H) in 2009 it has been known that users are able to create their own HTML pages and store them on the VIPA teleservice modules. For VIPA Teleservice modules it is easy to read data such as Inputs and outputs, flags, counters, timers, DB, etc. via MPI / PROFIBUS or ISOTCP & MODBUS TCP directly from the connected controller and to display them on a website via any standard browser.

The access to this data was not possible without additional software until now. M2Web is the magic word. The login with user name and password occurs via a standard browser and now enables you and your customers to monitor your plants and applications simply and easily. Plant instructors can offer their customers mobile access to their machinery and industrial facilities without additional costs. Here VIPA again proves that it always tries to cover the needs and requirements of its customers. Meanwhile manufacturers of remote control products are common place. The difference for the customer especially is in the service & support and in the offered features that simplify the daily tasks of our customers. We do not want our customers to be more occupied with the commissioning of a teleservice solution than with setting up their entire system. Sometimes such a feature is only a “nice-to-have”, but is specifically crucial for the decision in favor of the VIPA Teleservice modules

The M2Web functionality is available from now on for the devices of the series TM-E and TM-H. ■

# The smart heads behind it...

## SPEED7 Studio team of developers

**For several years VIPA has been thinking about developing an engineering tool exactly tailored to the possibilities of its own hardware and to make this tool available for its customers. About two years ago the decision was made to provide resources and manpower for this project which was launched under the name SPEED7 Studio. Therefore since 2011 a complete team has existed that is responsible for the immediate implementation of the requirements. The results of their work were presented in November 2012 for the first time on the SPS/IPC/Drives in Nuremberg to an interested public.**

### The VIPA software development

The entire VIPA department of software development is divided into several groups of developers:

- Embedded Software
  - Development and maintenance of CP firmware
  - Development and maintenance of CPU firmware
- PC software
  - Further development and maintenance of the developers` database (EDB)
  - Development of SPEED7 Studio

### The SPEED7 Studio team of developers

The core tasks of the engineering tool such as hardware configuration, programming, networking and visualization are reflected in the structure of the individual groups of developers. The members of this team are experts in the fields of informatics and automation and are thus able to develop an ideal product. A further component of the daily tasks is the cooperation with external partner companies.

### Task allocation of the team of developers:

**Department manager:**
Stefan Koch

**Programming environment:**
René Fritsch, Sven Günthner

**Communication connection:**
Sebastian Pohle

**Visualization:**
Andrea Heidenreich, Sebastian Grimm

**Hardware / Fieldbus configuration:**
David Nabraczky, Sascha Reiter

**S7 library:**
Nils Gotha

**Test:**
Andreas Geier, Norbert Fesús (Gruppe Systemtest)

The work of the team is not finished with the trade fair preview. The next steps are system tests, accompanying field tests, product releases and the planning of future features and expansions. The entire team is proud to have achieved an important first step with the presentation of the SPEED7 Studio at the trade fair.


**IMPRINT**

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# Modernisation in next to no time

## Compact control systems from VIPA perfect for upgrade

**Have you heard of them? SPAX. Everybody has used them – if not himself, then they are definitely being used somewhere in the living room. Up to 50 million of these essential pieces are produced at SPAX International in Germany per day. Under this permanently continuous operation of the machinery regular maintenance and reconditioning of the plants are necessary. Step by step the conventional contactor is replaced by intelligent control solutions. Here SPAX relies on the long-time experiences and solutions of VIPA.**

SPAX International stands for innovation and quality in screw manufacturing for decades. This success story started as early as 1823 – then under the name Altenloh, Brinck & Co., the first company in Germany to risk industrial production of screws.

Since then SPAX is not only a successful trademark, but has become an epitome of the most modern screws for producers and craftsmen. The current highlight of the continuous development is the launch of the new SPAX, which is a leap forward in development in screw production. Innovations like the multi-head, the patented wave profile and the 4CUT tip will ensure the top position of the company in the screw market in the future.

### Their own tool construction as competitive advantage

50 million SPAX are produces daily within ABC consortium with 1500 employees. Subsidiaries and distributors in Europe and overseas guarantee trouble free marketing worldwide.
Key points of the company`s philosophy and guarantee of success are the uncompromising quality and general customer orientation. This starts with the fact that the innovative machineries and the complex plants for the screw production are developed by the ABC consortium itself. Due to many years of experience the ABC consortium has a competitive advantage against competitors and imitators.

### The latest PLC solutions instead of conventional contactor

Many various machineries have been applied through the last decade. Each of these machineries were state of the art at the time of their construction, but now some of them are due for modernization. After all, today´s safety standards have to be maintained and the production process has to run trouble free. „We place the highest demands on quality and durability in all production areas", says Michael Naumann, head of electrical engineering at the location Ennepetal/Germany. "Some of the machineries have been in use for many years. Although they are still mechanically perfect, they are controlled by old conventional conductors and relays.", Michael Naumann says.

### There are many compact CPUs, but only VIPA offers compact and versatile solutions

All these machineries were converted to modern and innovative control systems step by step, which was not always easy. "Often the control cubicle is in the center of the machine, where there is less space and no possibility for expansion", explains Michael Naumann about the special challenges of conversion. "Without these small CPUs from VIPA we could not do anything in here", he explains and proudly holds one of these compact CPUs from VIPA in his hand.

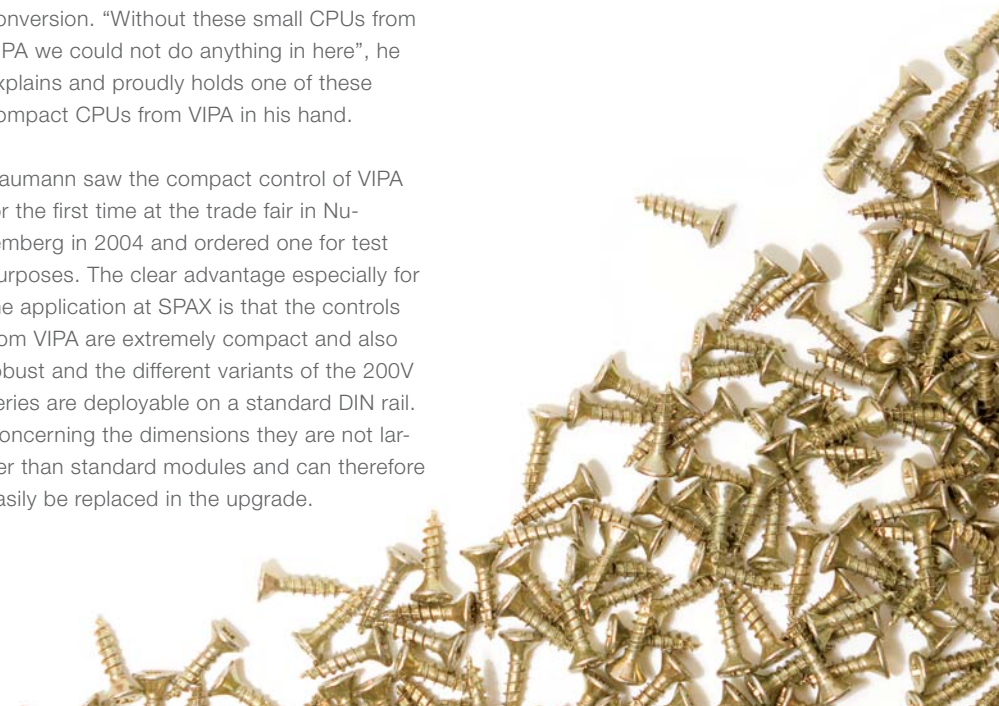
Naumann saw the compact control of VIPA for the first time at the trade fair in Nuremberg in 2004 and ordered one for test purposes. The clear advantage especially for the application at SPAX is that the controls from VIPA are extremely compact and also robust and the different variants of the 200V series are deployable on a standard DIN rail. Concerning the dimensions they are not larger than standard modules and can therefore easily be replaced in the upgrade.

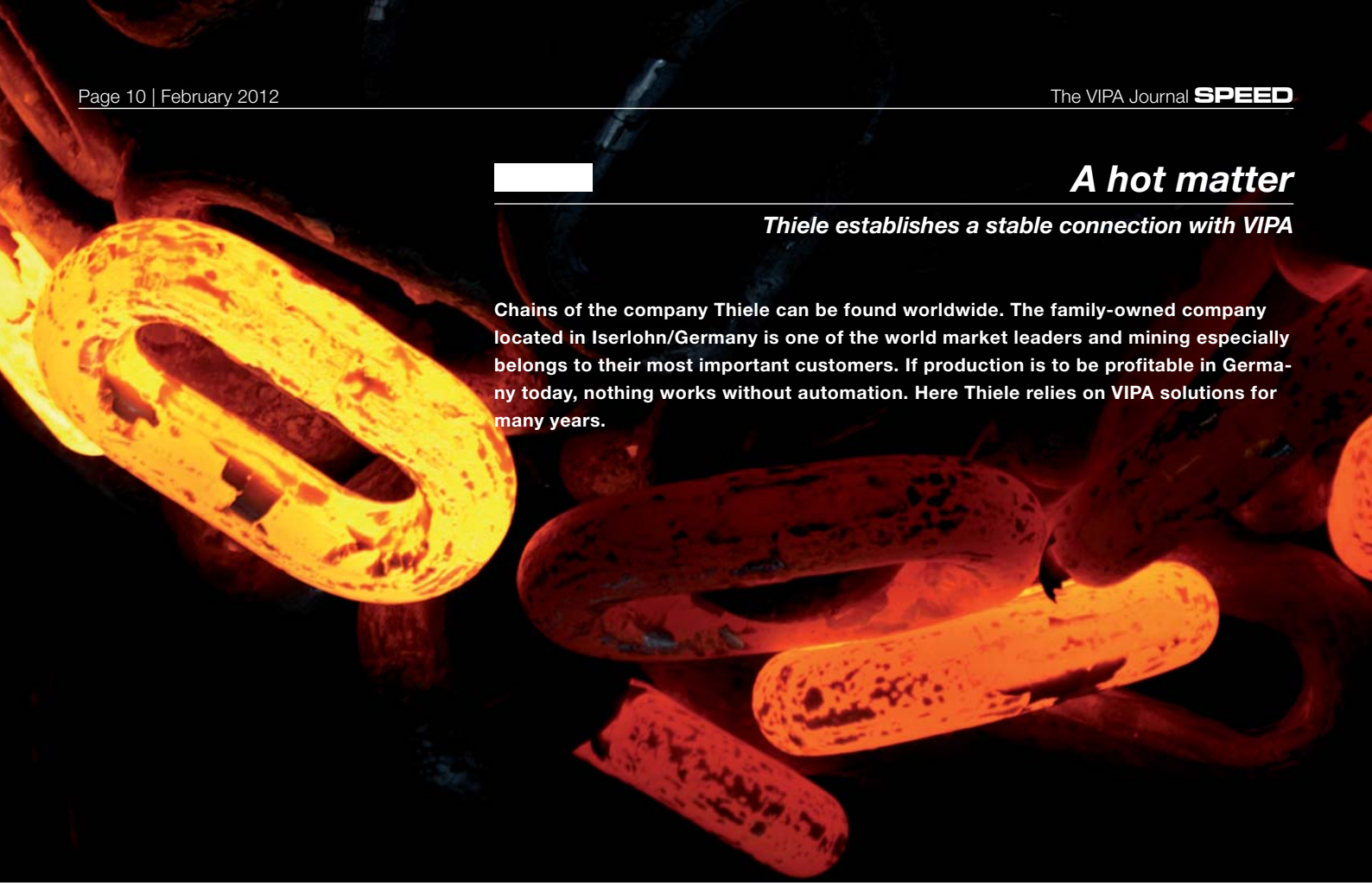
### Programmable with Step 7 – It comes down to the combination

The Step7 programming of the VIPA components was also important: "For us it was crucial, that we never left the Step7 world within all in-house control solutions", says Naumann. "Here the staff knows all details and is appropriately trained", he says. Initially different producers and systems were tested, but he was not satisfied with the solutions and finally the fundamental decision to use VIPA in combination with programming via Step7 was made.

### Direct contact into the factory – Not only helpful in screw production

Meanwhile more than 80 VIPA CPUs are used in Ennepetal and Michael Naumann is very satisfied with his decision – not only about the quality, but also about the service: "Precisely when a product is used for the first time, many questions arise." ■





# A hot matter

## *Thiele establishes a stable connection with VIPA*

**Chains of the company Thiele can be found worldwide. The family-owned company located in Iserlohn/Germany is one of the world market leaders and mining especially belongs to their most important customers. If production is to be profitable in Germany today, nothing works without automation. Here Thiele relies on VIPA solutions for many years.**

You can find them in Australian mines, on the high seas or in skiing areas – chains of Thiele from Iserlohn between Ruhr and Sauerland. The treasure trove of experience of the family-owned company, which was founded in 1935 on the current location, reaches from filigree snow chains up to huge anchor cables that keep oil platforms in place. It is no longer just about the mere combination of chain links. Together with research institutes the company develops intelligent chains that are equipped with strain gauge strips and a small chip as well as complete conveying systems for the mining industry.

Despite the gigantic size of the chain links, highest precision is required in this field too. The smallest tilts of the drag chain conveyors, which are moved through a pair of chains, could result in considerable abrasion which could lead to wear or even a stoppage of the plant. For this reason quality control is very important for Thiele and all processes are permanently monitored and optimized regularly.

### STEP7 solutions are preferred

Andreas Kemper, responsible for the electrical engineering at Thiele, ensures that the down times of the machines, which are in non-stop operation on the 40,000 m² of production area, are reduced to a minimum. "If a fault appears somewhere each of the 10 employees of the electrical workshop has to be able to repair it, so that production can continue without interruption", he said. After all the company with a long-standing tradition has full order books and works in a three-shift operation – so maintenance and repairs have to be done as fast as possible. For this reason Thiele decided to consistently rely on STEP7 programmable solutions that are familiar to all.

As a supplier VIPA was chosen by Andreas Kemper more than 10 years ago. Primarily because of the compact design of the VIPA 200V series with which he was able to modernize old S5 controllers without the need of rebuilding the complete control cabinet.

Further advantages are the easy installation via connectors and the possibility firstly to only change the hardware, so that the old S5 program is still in operation and then later to convert to an identical S7 CPU. "In this way I am able to replace the old defective hardware and still keep the system in operation", he says. "I can calmly take care of the rest".

### One supplier for all applications

Today components from VIPA can be found everywhere in the factory – besides the industrial applications, also the access control at the entrance as well as the pump stations for water cooling are realized with products of VIPA: "Thus I am able to optimize my stockkeeping, as I require only few components as spare parts and every employee is able to handle installation and programming", says Andreas Kemper, explaining why he exclusively relies on a single manufacturer.

A further important factor is that all VIPA SPEED7 CPUs have had Ethernet interfaces as a standard for years. "And here we require this for the machine data logging", says the electrical engineering technician. Thus, all production data at Thiele, such as cycle times or quantities, are logged, which is later used for the calculation of task wages.

If the machine stops, the employee responsible has to enter the reason – a modification could be necessary, for example, or material could be missing. Thus, the reasons for down times can be analyzed and so material flow and production processes can constantly be improved. Andreas Kemper has also implemented load management, so that the peak load, which has been agreed with the power company and currently stands at 9 MW can be met. "All consumption values are monitored and according to defined priorities single plant parts are cut back or shut down", says Andreas Kemper.

## Extremly fast CPU for the drop forges

The high speed of the VIPA SPEED7 CPUs is particularly important for an application at Thiele: thus, there is a huge hammer in the drop forge where the guidance elements for the drag chain conveyor are forged. The giant air hammer, the vibrations of which can be felt meters away, was delivered 25 years ago with a Klöckner-Möller Suco control. There was a 19-inch rack using special switching time cards, through which the valve timing of the air hammer was controlled. The problem was only that after such a long time there were no replacement cards available and because of a failure the complete control had to be repaired at the factory of Klöckner-Möller. It was therefore obviously necessary to modernize the control and to bring it up to the STEP7 standard which is already applied at Thiele.

"The synchronization control was a real challenge", says Andreas Kemper. The reason was the air cushioning of the gigantic hammer. Here, with 300 kW, a compressor creates an air cushion on which the hammer swings up and down very slightly.

The impact force of the hammer, which can be selected via foot pedals, is regulated by the switch-on times of the valves. To ensure the smooth function of this regulation, two synchronization switches determine if the hammer is moving up or down and allow the hammer to fall freely only in the downward swing. All these single steps have to be completed within 20 ms – with smaller strokes within 5 ms even.

*"So we need a CPU that is able to guarantee extremely short reaction times"*

say Andreas Kemper. And here also VIPA products met the high requirements. "The hammer has been working trouble-free for one year with the new VIPA 315 SB/DPM", the electrical engineering technician said. "We were able to reduce the down times of the machines from 30% to less than 5% compared to the old solution. This results in a noticeably higher profit". ■



*Drop forges*

*Chain store at Thiele*

*Thiele factory Iserlohn © Thiele*

# Maneuvering made easy

## VIPA controls new-style rail brakes

**The arrangement of freight trains is done on special marshaling yards. To avoid the wagons crashing uncontrolledly they have to be slowed down. To do this the company FEW Blankenburg GmbH has developed a particularly low-maintenance technology. Here, VIPA components guarantee accurate controlling, regulating and monitoring of status messages.**

*Dynamometric rail brakes in the railway*

Freight trains are often a colorful mixture of wagons of all kinds. Here containers alternate with tank and refrigerator wagons and other wagons transport cars and wood. Of course, this train-mix has different dispatchers and has to be individually put together, ordered by stations of destination.

This arrangement is done in special marshaling yards. Here the procedure is always the same: the wagons arrive there, roll down a shunting hump and reach each required target track via railway switches until the new train-mix is completed. Of course, the wagons are not allowed to roll down uncontrolled – after all many goods are sensitive. A cargo of valuable new cars would certainly not survive such a severe impact with the wagon already standing there without injuries.

### Special rail brakes

Ensure that the wagons slow down before they arrive at the destination. There is only one catch: each wagon is different. Different cargos have different weights. The length and the axial distance vary as well as the running characteristics of the respective wagons. Also wind direction and wind force have an effect on the speed of the freight wagon. Different parameters have to be measured on the top of the shunting hump, from which the braking force required for each car is then calculated. Radar equipment measures, for example, the speed. The weight, axial distance or the wind force are determined via sensors. Based on this, the brakes slow down the speed of each wagon, so that the wagon softly runs to the wagon already waiting on the destination rail.

*Radar measurement device for measuring the speed*

Most of these systems are hydraulic. But these have some disadvantages. So the entire track has to be controlled and maintained regularly due to the danger of leaking oil. Outdoor use causes additional problems - such as the possibility of freezing. FEW GmbH in Blankenburg have found another solution for this problem. They have developed a dynamometric rail brake that requires extremely little maintenance. The brake system dispenses with hydraulics and pneumatics that are prone to abrasion and relies instead on electricity.

The dynamometric railway brake that is integrated on both sides into the rails, works like a large magnet. Through of an inner and outer coil magnetic field generated in the main body and the backing plates are pressed to the wheel in the center. The stronger the brake power required the greater are braking current and magnetic field. Here the rail itself lies in a magnetic neutral area.

The braking current required can amount to 600 A at 750 V DC. Nevertheless, supplying these high currents is not a problem because the FEW GmbH uses this high-performance energy storage with Boost Cap modules - these are capacitors that are continuously charged and provide the necessary braking power. This technology also comes from Blankenburg. The great advantage is that the peak load can be reduced considerably. The energy storage device is dimensioned so that a UPS is not necessary. This results in maximum security and considerable cost reduction in energy supply.

Important for all controlling and regulation processes, from the charging process up to the precise braking current, is a powerful CPU that process all measured values quickly and safely – after all, more than 700 variables are of importance for the status messages that are collected in the signal box. For this reason the persons responsible in Blankenburg rely on VIPA. The speed of the SPEED7 PLC from Herzogenaurach was not the only reason.

*"Here we are working with many controllers that communicate with each other. The main part of the communication takes place via the MPI interface. The MPI interface had to be adapted to our requirements. Here VIPA was able to help us and realized our requirements quickly and competently", FEW said.*

As one of the first projects in cooperation with VIPA the railway yard Seddin near Berlin was modified in 2006 and has been running trouble free since then. The analog values are gathered here via VIPA modules. Besides this there is a 10" Touch Panel from VIPA in the technical room that monitors the status or that can be switched to a maintenance module. The visualization was created by means of Movicon software that is particularly easy to use but nevertheless offers many features including a sophisticated alarm management. ■

Figure 1:
In recent decades a considerable ash cement mountain has accumulated, which is now being recycled.

# Excavate treasures of past days

## VIPA controller ensures trouble free recycling procedure

**At the disposal site Rautenweg in the east of Vienna, the largest disposal site in Austria, completely new ways of recycling waste materials have been going on recently. As even in waste materials like ashes and cinder from incinerators there are still large amounts of recycling materials especially metal. Precisely the raw material scarcity of the past few years was the impetus for thinking about recycling waste materials.**

### Recycling plant

For this undertaking, the support of an experienced recycling company was required at the disposal site and the company Deponieeinrichtungs- und Betriebs GmbH in Hainfeld (Austria) was the right partner for this.
A mobile plant was developed to filter all kinds of metal from the mixture of waste materials and cement. The crushing unit from an existing asphalt and concrete recycling plant was used to break the cement residue mixture. In several stages depending on the particle size of the ash-cement mixture the separating of the metal parts can be performed automatically by magnets or the eddy current method. Finally, large metal parts are picked out via a manual sorting plant.

### Technical realization

"The power consumption is not the problem. The problems are only caused by the material. During the operation of the plant extremely fine particles of ash fly around – so even the air is conductive. This is a catastrophe for the electronics and the circuit elements", said Hubert Weyrer, who is responsible for the automation technology and project planning at the company Deponieeinrichtungs- und Betriebs GmbH.

"At first you don`t see any impurities in the control cubicle, nevertheless flashovers happen. Therefore we could not use conventional installation plates in the control cubicles, but had to mount the components on insulating plates", Weyrer continued.

The complete recycling plant is coordinated with a VIPA controller and the additional decentralized periphery SLIO. The bus system has been built primarily based on PROFIBUS. The VIPA controller CPU 313 is network and PROFIBUS capable. The cycle times are between 5 and 8 ms.
The speed of each drive in the recycling plant is monitored. This is done by sensors detecting the pulses of the drive, as speed monitors in this large number would be much too expensive. This speed monitoring also runs with VIPA controllers and can be processed in a corresponding speed. The program for this comes from their own development.

Figure 2:
The VIPA controller with the CPU 313 is a single point of contact for all data of the recycling plant.
Figure 3:
The VIPA SLIO modules represent the data interface as a decentralized periphery in each mobile unit of the recycling plant.

VIPA SLIO modules are deployed as decentralized periphery. These modules guarantee trouble free and impeccable interfaces between the controller and the mobile units of the recycling plant. Precisely because of the mobility it is necessary to use as few cables for communication and supply purposes as possible
Despite PROFIBUS the network topography was mainly realized radially. The entire recycling plant can be controlled and monitored via WLAN and a portable tablet PC.

The fact that already orders for further plants for metal recovery from incinerator residues were placed at the company Deponieeinrichtungs- und Betriebs GmbH shows that it is apparently a lucrative business to recycle metal. All in all, a successful and highly efficient way of gaining finished metal. ■

Figure 4:
M. Zöchling and H. Weyrer in front of a recycling plant at the landfill in Vienna Rautenweg

A summary of the solution report in the Austrian journal AUTlook No. 7-8/12,
Author: Ing. Martin Zöchling,
CEO VIPA Elektronik-Systeme GmbH.

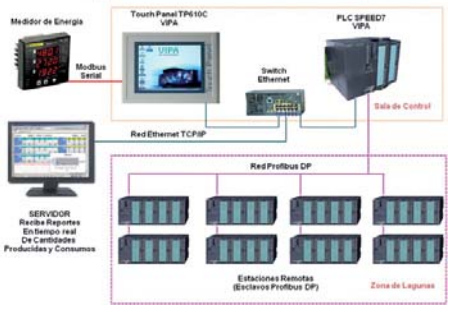
# Biogas plant in Peru

*Biogas plant in Peru uses waste materials from palm oil extraction*

**Industrias del Espino, a producer of palm oil products in Peru, processes around 280,000 tons of the palm oil fruit per year. Waste water resulting from the production was previously collected in open basins. The released gases were released without filtering into the environment and thus contributed to the pollution. By means of VIPA automation engineering the production plants were upgraded with a biogas plant and a biological sewage treatment facility. Now the high-energy gases are converted into usable energy and this leads to a reduction of greenhouse gases.**

For this the previously open basins were covered with plastic foils which collect the biogas. At the same time a biological wastewater treatment treats the sewage. The main purpose of the system is the replacement of fossil fuels that are used for the operation of the old Diesel boiler plants. These boilers were adapted so that they could be operated using the self-produced biogas. This automation technology in the plants is deployed in the control of biogas production as well as in the wastewater treatment.

## SPEED7 technology takes over complete control




As the basins of the different process stages are spread over the entire area of the company a PROFIBUS network consisting of eight outstations was implemented for the control and monitoring. The entire length of the PROFIBUS network is around 1.2 km. In each outstation there is an IM353DP interface module that collects the data of up to 32 I/O modules and transfers them to the central CPU 315SN/NET. The driver software for the manual and automatic operation of the pumps, blower and valves, also the measurement of temperatures, flow rates, the energy and gas composition (methane, oxygen, hydrogen sulfide etc.) are in this CPU. In addition the values of the produced gas and the total consumption of the gas in different parts of the plant are recorded.

The interfaces, integrated in the CPU as standard, are used as follows:

**PROFIBUS DP master** for the communication with the PROFIBUS remote stations installed at the perimeters of the basins.
**MPI** (Multi Point Interface) for programming the PLC.
**Ethernet TCP/IP interface** to communicate with the VIPA TP610C Touch Panel that allows monitoring and control of the whole process. The interface can also be used for programming the PLC.

## Operating the plants via Touch Panel

The VIPA Touch Panels TP610C allow the operator to monitor and control the plant, visualize trend curves of the most important signals and access alarm reports. For this project it is important to generate automatic reports about the total amount of gas produced in different parts of the plant. Every 30 seconds the measurements are recorded to avoid manual intervention in the data flow. As additional security the reports generated on the Touch Panels are not stored on the PCs, but are sent directly via Ethernet to the network server of the company.

## United Nations approval for the project

The complete project is under the control of the United Nations as it is part of the Clean Development Mechanism CDM, also known as carbon credits. In 2007, the recognition of the United Nations for the issue of emission rights was granted. The operator of the Biogas plant sees this as confirmation for the safety and reliability of his plant equipped with VIPA technology. ■

# VIPA USA

## More proximity to customers by means of strategic alliances

*From left to right:*
*Angie Bralick, Simon Cole, Michele Restall, Thomas Kosse, Kerri Kosse*

With the second half of the year 2012, after more than 10 years as a continental company, VIPA USA took over the entire responsibility for the North American market. Beside the USA this also includes Canada and Mexico as further sales areas.
VIPA USA is a central contact in North America with a team of 5 co-workers and besides a unified sales and marketing strategy also takes responsibility for service and technical support. An all-encompassing network of distributors and system integrators in each country guarantees complete coverage of the entire market.
In line with the strategic realignment is also a logistic restructuring. Central warehousing and the entire coordination of procurement create crucial time, economic and administrative advantages in delivery and the supply of spare parts to the whole continent.
“The establishment of this competence center is a big step in the right direction for more proximity to customers and faster reaction times in the future and a sustainable growth in North America”, said Thomas Kosse, CEO, describing the company´s new direction.

You can contact VIPA USA under following address:

**VIPA USA Inc.**
12600 Deerfield Pkwy #100
30004 ALPHARETTA GA
Tel: 001 678 880 6910

# VIPA Austria

## VIPA Elektronik-Systeme Austria celebrates its 15th anniversary

In August 2012, VIPA Austria celebrated its 15th anniversary with a ceremony. Together with the co-workers, suppliers and partners the present success story was honored.

Martin Zöchling, CEO, said that the alignment as a full-range supplier of automation technology is the basis of sustainable development. This allows customers to draw on a wide range of controllers and visualization systems, which are constantly being developed by the ongoing innovations of the respective suppliers.

Building on this, the capability of prompt delivery adds a further pillar. A comprehensive central warehouse guarantees the delivery on the day of order for the sales areas Austria, Hungary, Slovenia, Croatia, Serbia and Macedonia. Competent and highly motivated co-workers guarantee a professional customer service under the motto SUCCESSFUL AUTOMATION.
“With this concept we are also in a good position for future requirements”, said Martin Zöchling.

*We offer our congratulations for this business success!!*

# Sports club Gloria Weilersbach

***VIPA sponsors jerseys to a football club***


**Once again, we can report about a sporting event where the youngest participants of a children's football tournament proudly presented their VIPA jerseys.**

It is the G-youth team of the sports club Gloria Weilersbach near the Frankonian city of Forchheim. The boys and girls proudly presented their new VIPA jerseys together with coach Arno Amon und team minder Clemens Amon.
We are pleased to promote youth sports in our region with the slogan:

*"The combination of technology and sports doesn't only have a tradition in Herzogenaurach, but also at VIPA!"*



# Wolfsman Run&Rock

***A great challenge***

**The latest adventure for the VIPA SPEED7 Racing Team was not for sissies. The team took part in a very special event for the first time: the Wolfman Run&Rock 2012.**

*One of many obstacles*

Anyone who overcomes all 41 obstacles on this run can call himself Wolfman. Many obscure barriers were available or rather stood in the way here. Whether a tank that had to be climbed over or crawled under, or the cold stream Bibert that had to be waded through, several scaffolds and a mountain of bale of straw that had to be crossed over. The obstacles did not spoil the good mood of the participants whether they were climbing through pipes, over old cars or a garbage truck on a hill.

One circuit was over 10 km, but the very tough guys were able to do the same obstacle course twice. Special highlights were the two mud pools which the participants had to wade through. So most of them were pretty muddy when they arrived at the finishing line.

The opinion of the VIPA and profichip participants was overwhelmingly positive. In any case, it was really fun!
The event enjoys increasing popularity not only in Franconia but more and more in the rest of Bavaria. After all, the Bavarian Television devoted a program of its own about this event.

*The infamous mud pool*

*Not anything arrived at the finish line in one piece!*

# Two cycling races and a triathlon

## *Tour Transalp - Maratona dles Dolomites - Roth Challenge*

**The sports men of VIPA took part on three sports events last summer. First for CEO Wolfgang Seel and hardware developer Roland Thamm the tour Transalps was on the program, followed by the traditional Maratone dles Dolomites and finally five relays took part at the challenge in Roth/Germany.**


### Tour Transalp

Now almost a tradition for VIPA CEO Wolfgang Seel to take part in two cycling events in the last week of June every year. More precisely, Wolfgang Seel and hardware developer Roland Thamm took part together in the tenth Tour Transalp, which went from Mittenwald to Arco at Lake Garda and via delightful passes such as Timmelsjoch, Würzjoch, Grödnerjoch, Sellajoch and Passo Fedaia. Additionally there were several new passes on the program for example Monte Grappa, a mountain above the Po valley with a famous panorama. After 808.18 km and a total of 18,877 meters in altitude both cyclists finished the distance after 37 hours, 20 minutes and 37.2 seconds. They came 58th in the category Grandmasters (the sum of the ages of both participants has to be more than 100 years or older). ■

### 26 participants at the Maratona dles Dolomites

Directly after his participation in the Tour Transalps, Roland Thamm took part together with 25 colleagues in the 26th Maratona dles Dolomites, one of the most famous cycle races for amateurs around the wonderful Sella alpenstock. There were 26 racers in the VIPA Speed7 Racing Team at the start, who cycled 2355km in total. With this they came 35th out of 68 at the team scoring. ■

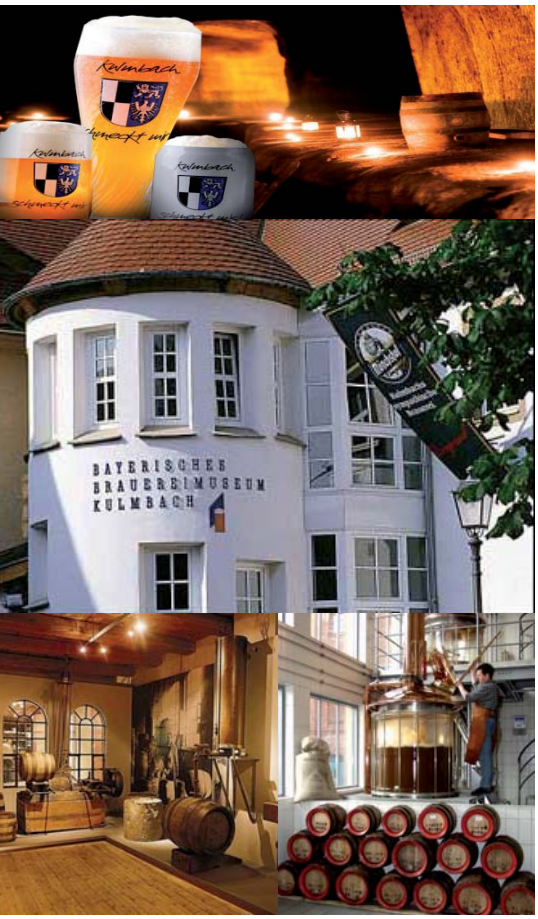
### Five relays in Roth Challenge

The next highlight on the schedule was one week later. Five relays took part in the Challenge in Roth and above all the VIPA SPEED7 Racing Team 2 was very convincing by nearly breaking the nine-hour barrier - including the day´s best time within the participating VIPA SPEED7 Racing teams.
The fastest relay, with 3.8km swimming, 180km cycling and 42.5km marathon run, achieved an outstanding 17th place in the overall ranking. Also the other teams, including the relay team of VIPA subsidiary, Profichip, who took part for the first time, finished the distance and delivered a remarkable performance. ■

# Museums in Franconia

## The Bavarian Brewery Museum Kulmbach

**In the last edition of the SPEED Magazine we announced that more reports on special Franconian museums would follow. Now in this issue more about the Brewery Museum in Kulmbach. In this museum you will learn about the history of Bavarian brewing tradition dating back to the time of the Sumerians. At the end of the visit you will be rewarded with a sample of the museum beer produced in the glass Museum Brewery.**




In its four sections the museum shows **„The art of brewing“, „Beer Culture over the course of changing times“, „Beer and brewery advertising“** and **„brewery architecture“** everything about Beer and breweries.
As a matter of interest the region of Franconia has the highest density of breweries in the whole World, and here Upper Franconia together with Bamberg is at the forefront. About 1000 different beers are brewed in Upper Franconia. It is not surprising that the Bavarian Brewery Museum in Kulmbach is also located in the middle of this region.

The tour of the museum will show you the changes in brewing techniques over various periods up to the technology of today‘s large breweries. You will learn a lot about the raw materials, which are necessary for brewing beer, where they come from and how they determine the taste of the of the beer. The development of the beer bottle is likewise clearly presented, as well as the various forms of Beer-mugs with some over 100 years old Exhibits, and also what beer mats were formerly called. Another part of the exhibition is dedicated to the change in beer advertising from the first sheet metal and enamel signs up to today‘s modern advertising.
The highlight of the museum visit is a visit to the Crystal Brewery, where You can look over your shoulder of a real master brewer as he carries out his Craft. Of course at the end of the visit you can sample the beer brewed here in the museum.

The museum is open the whole year, Tuesday through Sunday from 10:00 a.m. to 5:00 p.m. and your visit can also be combined with a visit to the Bavarian bakery museum located at the same place. ■

The address is:
**Bayerisches Brauerei- und Bäckereimuseum**
Kulmbach e.V.
Hofer Straße 20
95326 Kulmbach
Web: *www.kulmbacher-moenchshof.de*

## A small digression to Franconian beers:

- **Rauchbier (smoke beer):** the characteristic smoky flavour comes from the use of smoked malt.
- **Schwarzbier (Black beer):** this brew gets its intense dark color from the roasted malt; this beer appears under various names depending on the different regions: „Altbier“ (Old beer) in the Lower Rhine region and in Düsseldorf, „Schwarzbier“ (Black beer) in Thuringia and Saxony, „Dunkel“ (dark) or also as „dunkles Hefeweizen“ (dark wheat beer) in Bavaria.
- **Weißbier (white beer):** top-fermented beer from barely and wheat leads the statistics of the Bavarian brews, also very popular in Bavaria as wheat beer with natural cloudiness from fermentation in the bottle.
- **Rotbier (red beer):** bottom-fermented beer exclusively brewed with barely, which gives the beer its particular color. Today, Rotbier is brewed, among other places, in the Nuremberg brewery Altstadthof.
- **Starkbiere (Strong beers):** also often known as bock beers or Doppelbock, have a significantly higher original gravity of between 18% and 28%, the alcohol content lies at around 7,5% to 11%. In Bavaria these beers are traditionally drunk during lent.
- **Kellerbier (Cellar beer):** a lager, mostly unfiltered and slightly yeast-clouded beer (Vollbier), which is served especially in the Franconian beer cellars.

# Touring around Franconia

## *Altmühltal panorama path*

**Awarded „Germany's most beautiful hiking trail" in 2012, the Altmühltal Panoramaweg has for a long time been one of the most popular hiking trails in Germany. At around 200km total length it crosses the Altmühltal nature park from Gunzenhausen to Kelheim, where the Altmühl opens into the Danube as the Main-Donau-Kanal (Main-Danube canal).**



The hiking suggestion described here in detail divides the route into 15 individual stages, beginning in the Franconia Seenland (lake district) at the Altmühlsee (Altmühl Lake) in Gunzenhausen. The individual stages do not always obstinately follow the river valley, but also touch many interesting castles and fortresses and interesting natural phenomena such as the „Steinerne Rinne" (stone gully) on the second stage from Spielberg to Treuchtlingen.

Further interesting intermediate stages lead to solnhofen, which on the one hand is known for the „12 Apostles", particularly striking limestone cliffs directly on the slopes above the Altmühltal (Altmühl valley) and on the other hand for the Sohnhofen Plattenkalk (Sohnhofen limestone slabs) with the fossilizations from a prehistoric Jurassic sea. The next stage but one leads to the baroque university and cathedral town of Eichstätt. Here in the Jurassic Museum on the impressive Willibaldsburg you can find out about the many petrified fossils to be found here, described vividly and in great detail.

The last four stages then lead along the Main-Donau-Kanal (Main Danube canal), which is united with the Altmühl in the vicinity of Beilngries. In addition to many attractions on the last stages the 200 meter long wooden bridge near Essing over the Main-Donau-Kanal is particularly worth mentioning.

To describe every detail of this wonderful hiking trail would be well beyond the scope of this article. You can find an exact plan of the stages with additional tips for accommodation and where to eat, and all attractions along the edge of the trail, on the Altmühltal Nature park registered association website under

**http://www.naturpark-altmuehltal.de/routen/altmuehltal-panoramaweg**.

All sections of the hiking trail are also easily accessible by train, so that individual stages of the tour can also be explored on foot; Tips hereto also on the above-mentioned website.

If you want to explore the Altmühltal by bicycle, there is a tour along the 167 km long Altmühltal cycle track, which is very family-friendly, well signposted, and likewise leads from Gunzenhausen to Kelheim. More under http://www.naturpark-altmuehltal.de/altmuehltal-radweg/abschnitte/.

**Get to know Germany from its most beautiful side!** ■

# Touring around Franconia

## *In Franconia's „Farther Indian" corner*

**While others spend the autumnal days at home, The 37 year old Kulmbacher media designer from Kulmbach, Heiko Hartmann, is out in the countryside, on the road – armed with his digital camera. There he discovers and tries out new tours for his hiking and excursions website, www.hinterindien.de (literally „www.fartherindia.de"). He then writes up and illustrates the respective tours and presents them to a wide audience.**

© Foto: www.hinterindien.de

### In the remotest corners

The unusual name of the internet portal is based on the one hand on Heiko Hartmann's rather spontaneous sentence: „This is probably the farthest Indian corner of Franconia.." which came to him on a trip with friends to the river dam Mauthaus in the year 2000. On the other hand he thought of a scene from his favorite film „Around the World in 80 Days", in which the main actor was believed to have disappeared in remotest Farther India. It clicked and from „The remotest corner of Franconia" and „remotest Farther India" the idea evolved: Is it not finally the time also to present the „Farther Indian corner of Franconia" to a wider public – the corner of a region, which is every bit as beautiful as the established German holiday destinations?

### Up to 13.000 visitors

Again and again for about a decade now he has described selected hikes, which he portrays in every detail on the internet and illustrates them with many expressive pictures. And this is catching on: At its peak he gets up to 13,000 visitors per month on his website. Thus Hinterindien.de, true to his desire, has developed into a central starting point for hiking in Franconia.

© Foto: www.hinterindien.de

### Tour No. 81 out of more than 100 tours through Franconia

With Heiko Hartmann's support we decided on a tour in the district Forchheim: the „Waldränder-Tour bei Großenbuch" (forest edge tour near Großenbuch). The place is conveniently located on the southwestern edge of the Franconia Alb. Here the sun still warms the slopes even in autumn and promises abundant plum harvests. For hikers it offers a lot of variety. You pass by old farm buildings and beautiful orchard meadows. And the highlight of the tour - including a wonderful panorama, by the way - awaits the hiker near the end of Tour: a forest chapel completely built of wood which is unparalleled anywhere. The Holy figures, the benches, the roof - everything is made of wood. A little gem, therefore, that you can discover here in this „Farther Indian corner" of Franconia.

© Foto: www.hinterindien.de

*This wonderful old half-timbered barn in Unterstöckach has unfortunately almost fallen into dilapidation. Tour 81 takes the hiker past this.*

You will find a very precise and well illustrated Tour description under Tour Nr. 81 on www.hinterindien.de. ■

*This website is highly recommended to all Franconian hikers!*