

SPEED

The VIPA Journal

Company Newspaper of VIPA GmbH No. 4 | July 2012



NOT ONLY THE NEW
LOGO IS GREENER...

VIPA

Content



Sewage plant Detmold –
Higher energy efficiency



Profichip –
Good skiing and toboggan with PROFIBUS

- 2** Automation for the environment
- 11** New products
- 14** Profichip
- 18** VIPA Italia
- 20** VIPA Sporting
- 23** Touristy tips for Franconia

Automation for the environment

VIPA offers the suitable PLC technology

FORWARD

At VIPA things are happening, recognizable by the new appearance of this VIPA journal. We have given all the documents, the home page and our other publications worldwide a new uniform design and, with this, we want to express our position as an innovative PLC provider in the field of Automation even more so than in the past. After reading this journal we recommend a visit to our new website at www.vipa.com.

As the cover picture already indicates: this edition is dedicated to the environment. The core industries of the automation world, to which without doubt, the environmental industry belongs, have moved even more into focus. Renewable energy systems, environmentally friendly building automation and control systems in the water-wastewater sector are no longer feasible without modern automation technology. Several articles devote themselves to this subject in detail.

We researched the annals of VIPA and here we made a find about the beginnings of the VIPA chip-daughter profichip and the first European VIPA foreign representation in Italy; interesting facts about this in this issue.

For the sports section this time we have drawn, among other things, on the experiences of a VIPA business partner. With his support we have been able to put together a stunning article including great pictures about a Himalayan crossing by bicycle exclusively for this Journal.

As the summer travel season is soon imminent, we have this time included suggestions and tips for holiday and leisure activities in the region of Franconia. .

We hope you enjoy reading the journal and wish you lots of fun during your recreational activities in our region

Your Wolfgang Seel




The responsible use of resources does not end with automation technology. Environmental awareness plays a decisive role in more and more areas, regardless as to whether it is a question of energy, saving resources or increased protection of the environment. Not only are industrial producers required to establish an energy balance, but also every private consumer is compelled by various product reviews and recommendations to pay attention to the energy balance of electrical appliances, for example, when purchasing. Because of the, now, very strict guidelines, such as with energy consumption for lighting and heating, Germany is one of the pioneers of an environmentally friendly energy policy. VIPA already took this development into account in the past. Three areas come to the fore:



Water/wastewater

For many years, VIPA has worked together with Planning agencies, with manufacturers of control systems and with plant construction firms, who concentrate as specialists in the areas of water supply and wastewater management. On the one hand It is a question here of the new construction of corresponding plants, but also measures to modernize existing facilities. The legislature has again and again, reinforced the rules regarding the Wastewater Quality (Water Resources Act, WHG) for such facilities, so that for VIPA and their partners a wide field of activity opens up here, because the implementation of these regulations can be more easily realized by the integration of modern automation systems.

What potential for hardware manufacturers can be deduced from this? According to VDMA forecast for 2011, the sales volume of the industry water / wastewater in Germany is estimated at approximately € 1.45 billion, the export proportion accounts for € 850 million, or approximately 59%. 70% of this sales volume is distributed over 5 major consumer groups:

- Public and private supply and Disposal with approximately 30%
- Chemical, petrochemical and Pharmaceutical industry with about 14%
- F & B, including the beverage industry with about 12%
- Pulp and paper with about 7%
- Metal Products and Equipment with about 6%

If we proceed from an average of about 4% share of pure hardware costs (PLC plus accessories) to the entire Plant costs, results on the basis of the expected sales volume a sales potential of about €58 million for ICA tasks.

Many already successfully implemented projects show that VIPA can offer some of the best solutions for this market. Figure 1 shows that in many regions nationwide VIPA



systems are already in use. Through increased contacts with the planning agencies the gaps in the coverage are to be closed for the long term. Also the inclusion of other partners from the fields of plant and process control systems in the overall concept strongly supports this objective. Already completed modernization in Sewage treatment plants and new technologies in the municipal water treatment show that the use of modern control technology in the first place serves to reduce contamination of water through improved Quality of the wastewater. In addition the plant modernization brings with it cost savings due to the energy saved in the operation of the facilities and lower fees due to lower contamination.

Renewable Energy

Here lies the focus of the VIPA activities in the area combined heat and power plants (CHP) in conjunction with biogas plants. This form of alternative and distributed generation of electrical energy is becoming increasingly important in Germany. According to the Professional Association of biogas about 1,200 biogas plants were produced in 2011. But there is no accurate forecast of the amount of new plants to be produced or details of plant capacity and output. Given an ever-increasing share of exports a forecast of 1,000 new plants per year appears to us to be realistic. The control requirement per plant lies between € 1500 and € 4000 depending on the configuration with / without HMI. The technologies required cannot manage without sophisticated automation technology, so a wide field opens up for VIPA here too. Our main focus is on cooperation with partners in the field of Biogas plants. There are some promising approaches from our

customer for VIPA control technology in such plants. Even in the generation of electricity from Hydropower VIPA control systems can be found. Currently, within the framework of water supply, a VIPA partner is involved in a project, in which the goal is, with the help of turbines, to use the spring water inflow for the supply of fresh water also for electricity.

Bavarian State Ministry of the Environment and Public Health:

<http://www.stmug.bayern.de/>

Renewable energies:

http://www.erneuerbare-energien.de/erneuerbare_energien/aktuell/4590.php

Federal Ministry for Environment:

<http://www.bmu.de/allgemein/aktuell/160.php>



Building Automation

Also building automation is meanwhile subject to strict regulations regarding energy saving and environmental protection. Here the legislature has in recent years passed more and more regulations regarding Building insulation and energy consumption. The very complex requirements can only be realized with elaborate automation technology. Modern control systems not only include air conditioning, heating and ventilation, but also lighting and light adaptation, access control and other areas, in some cases, connected with security. Many years ago VIPA sought here the collaboration with renowned building automators e.g. Frimat, Klingenberg, Hermus, and M + W Zander, who are among the major suppliers in Germany. Many new VIPA control modules, such as M-Bus-CP, CP EnOcean, have arisen under this collaboration. Further control modules are currently under development in order to meet all necessary preconditions for future-proof solutions also in the area of building automation. VIPA itself has also fully implemented the knowledge gleaned from practice in the company's own buildings. Several articles and publications, as also in Issue 2 of the VIPA journal „SPEED“, report about the numerous projects, which, together with our customers, we have successfully completed.

Technical Reports

In order to give you a comprehensive picture of our Activities in automation technology for the environment, we have included reports and articles of already successfully completed Projects for building automation, waste processing and water softening in the subsequent pages. ■

Authors: Norbert Schlimm, Gerhard Preißinger

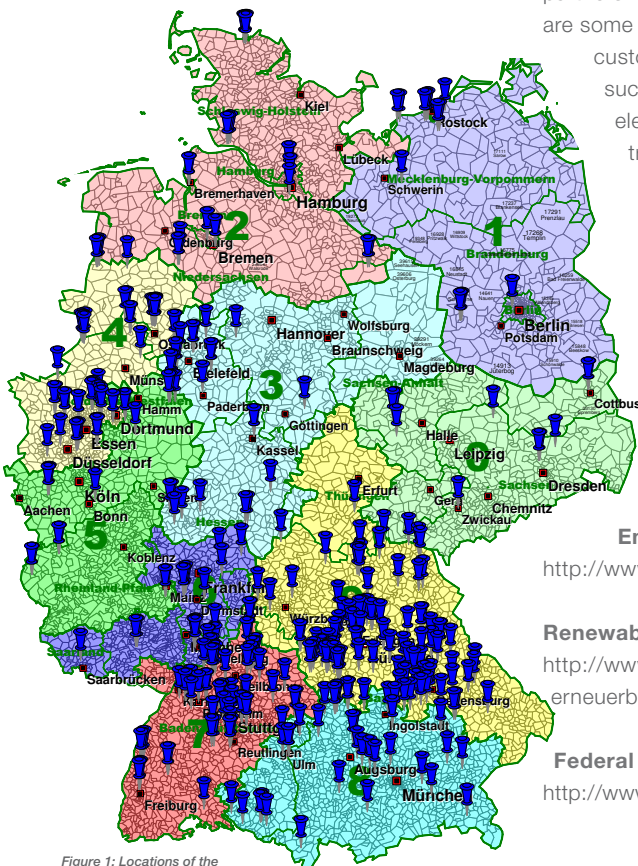


Figure 1: Locations of the facilities in Germany that are equipped with VIPA technology



Facility Detmold: rot tower

„The modernization in Detmold is like open heart surgery, „says planner Herbert Baumer. He is an expert in electronic measurement and control technology and has his office in Schloss Holte-Stukenbrock. He has earned a reputation in Westphalia as an expert in wastewater treatment and was therefore also consulted in the modernization of the central wastewater treatment plant in Detmold.

It had become necessary because the old S5-technology was out of date and could not perform many features that the operators wanted to implement. An upgrade to a contemporary control was to take place - and that during running operation, because of course the wastewater of at least 135,00 inhabitants must continue to be cleaned.

New Planning from Scratch

It was not just a question of merely exchanging the CPUs in the various process areas of the wastewater treatment plant. On the contrary, Detmold Wastewater Ltd. (DTA) wanted to take the opportunity to rethink and scrutinize all the processes anew. And it was also necessary because in the Past the individual plant parts had been gradually expanded and automated. Various companies and programmers with different philosophies were involved at that time, and so Herbert Baumer discovered during the first detailed review that there was no real overall system, but many different islands, whose interfaces were often not very carefully implemented.

The result: peak values were exceeded without need, emerging biogas was burned off, while at other times was lacking and engines were permanently operated in energy-consuming standby mode in order to be ready in an emergency - even though



High Energy Efficiency

by clever planning

The example of a sewage treatment plant proves that the investment in modern control solutions are more than just financially worthwhile. The modernization of the plant control system in the central wastewater treatment plant of Detmold not only saves energy - operating costs are considerably reduced by sophisticated load management and all Processes are now much safer and more transparent. A central component of the new system is the powerful VIPA SPEED7 CPU.



Figure facility Detmold, Photo: Sewage Detmold

this was very rarely necessary.

Exhaust every possibility – with VIPA no problem

„We wanted to remedy all that and therefore decided to start with the planning right from the beginning, „said Bernard Dowzanski, managing director of Detmold Wastewater Ltd and the driving force behind the modernization. The goal was to increase energy efficiency in all areas of the plant. Many details and decisions at that time were no longer understandable so the decision was made to take a very close look at all the processes and from that to develop the new design. Only then did they begin to implement everything phase by phase.

„Many owners shy away from this effort and leave the old structures untouched, in principle only exchanging the hardware and therefore not fully exploiting the potential that today's very modern controls offer, „Herbert Baumer said. For the modernization in Detmold, he chose components from VIPA. „The SPEED7 PLC is very flexible for our requirements because of their modular structure. We are able to use the same CPU in all areas and then depending on the task

expand by up to 32 modules with the diverse range of functions - no other Manufacturer is so efficient“, said Herbert Baumer underlining his decision.

Safety and service are paramount

In addition, they wanted as many of the necessary components as possible from a single manufacturer in order to have only one contact person and to be on the safe side with the Interfaces. „At VIPA we got everything - not only the PLC itself, but also the touch Panels, sensors and I / O modules for the connection of the many detecting elements that control the processes - simply a full-service provider“, he said enthusiastically.

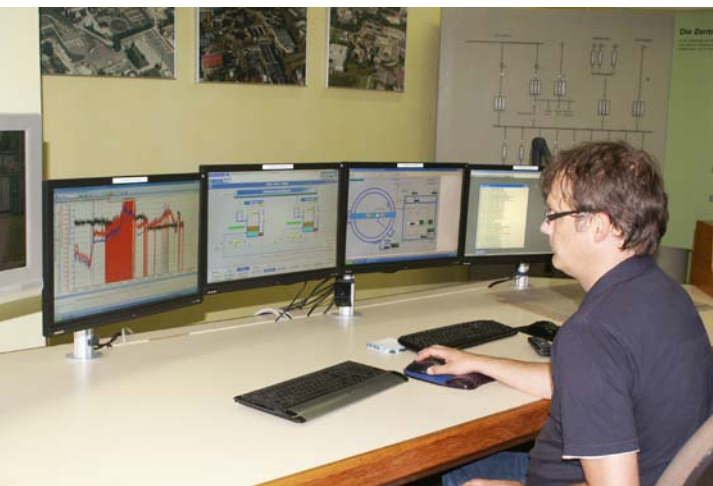
Particularly important is the permanent control of all parameters of the plant - after all, you cannot simply switch it off. Wastewater runs continuously and only with known parameters - such the oxygen content and the nitrogen values, does the process run optimally.

If not the whole plant does not run correctly, it can have fatal consequences. In an extreme case unpurified water would have to be fed into the outlet channel. The

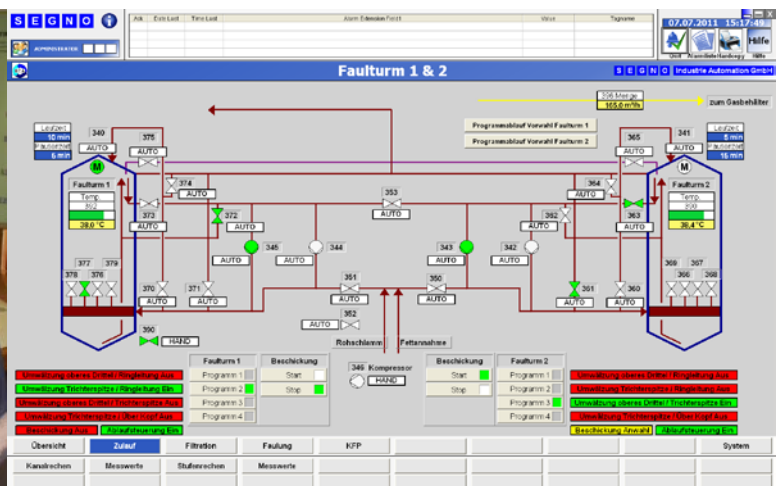
discharge of inadequately treated wastewater, however, constitutes a violation of government regulations such as the „discharge decree“ and can have both legal and financial consequences for the DTA - a situation that must be avoided at all costs. Thus, many values are not only recorded, but also logged, documented and reported

are realized: the result can be seen now. The energy consumption of a one family home is saved by the intelligent early warning system alone in only one section. Where a particular rake for the canal before was operated permanently in stand-by mode, it is today only put on standby when sensors report that certain values rise. It's not just about the

controlled intelligently. „The goal is that no gas is torched but rather all is used for electricity and heat generation,“ said Baumer, explaining the issue of energy efficiency. For this purpose all measurement data is now constantly evaluated from the digesters to ensure that the plant's own electricity generation is 100% available



Control station



Process figure rot tower

to the supervisory authorities. For this reason VIPA also integrated data logging, a well thought-out alarm management and the possibility of remote maintenance into the new system.

Likewise for safety reasons, two redundant fiber optic networks, that connect all controls on the site together, were constructed. „With VIPA CPUs this was not a problem, because they have as standard two connection options“, the planer explained.

Compact design very important

Another important factor for him was the space. Many old control cabinets were bursting at the seams before and it was not always clear where the individual lines led. Now everything seems clear and tidy. „The compact design of the VIPA components was all important for us, because as the conversion was being completed during operation, we had to run the old and new control system for a certain time in parallel. Here every Centimeter counted on the rail“, he said, speaking of the special challenges in Detmold.

Even though not all phases of construction

crossing of threshold values, but rather trends are automatically evaluated by the controller. Only when it registers a permanent increase is the plant technology awakened from its „Deep sleep“ as a precaution - if it is only a matter of single peaks exceeding the values nothing happens and it will return to the „Deep sleep“ state. Other plant components such as a retention soil filter will follow in further building phases.

Focus on energy efficiency

Also similarly intelligent is the load management: Previously it could happen that many Pumps, blowers, or presses activated simultaneously in an uncoordinated way and thus the peak load, agreed with the utility, was exceeded. This then generated losses of up to five figure amounts. Now every individual consumer logs on to a PLC, which controls the load management, and according to a defined priority list they may then connect. „For the Mud, it is not so important whether it is pressed now or in five minutes - but as for the peak load it can have very costly consequences,“ Herbert Baumer explained.

Methane gas develops in the digesters. The use of this gas for the gas turbines is now

during the high tariff period. „If necessary, we then throttle the gas turbines in the low-peak time, and purchase power in order to ensure that the gas storage contains enough gas for the next high-priced over time. „Additional Factor: Due to the continuous operation - a single turbine used to be completely shut down when its own gas supply began to run out - the equipment does not wear so fast.

Bernhard Dowzanski of the DTA is happy that he decided for the longer but more effective way of modernization. „For us the investment has already paid for itself - not only in the form of lower energy costs, but also in more transparency, more efficient use of resources and higher Process safety.“ ■



Author: Harald Wylitek



Due to the geological circumstances conditions with shell limestone soil around the town Osterburken in Neckar-Odenwald / Germany only extremely chalky well water can be gained is available for the water supply. Chalk was used to be removed chemically in order to protect household appliances and pipings – many private households had their own decentral water softening installations.

All this is now in the past since in October 2010 the most modern feedwater softening plant of in Germany has been put in went into operation.

Nanotechnology replaces chemicals

The company Kuhn Ltd. Technical Plants from Höpfingen is responsible for the equipment of the plant. The company has been dealing with the recycling of drinking and waste water for three generations and supplies his plants into the whole all over the world. The scope of delivery not only contains the pipeline construction and the technical equipment, but also the complete electrical and control engineering. Project manager Thomas Schäfer says: "The applied technology in Osterburken works completely without chemical additives in the drinking water. During nano-filtration which we use here, dissolved materials that make water hard are removed by an osmotic filtration. The water flows through a long cylinder in which containing the filter is in the form of a coiled membrane that is only permeable only in one direction and which holds retains the solutes, while the water molecules can pass unhindered." The well water will be is prepared in different stages until the required water quality is achieved, which can then be fed into the local drinking water network.

Everything clear

Extremely chalky water is converted into drinking water

To ensure always and everywhere sufficient drinking water always and everywhere, a powerful infrastructure is required. Fountains, pumps, pipelines and storage possibilities ensure the continuous supply with this valuable property commodity. But it does not depend only on the transportation transportation isn't everything: only procedural processes convert simple well water into a beverage of highest quality. Automation and control solutions from VIPA guarantee optimal and save safe processes.

Wasserversorgungsbauwerk „Talbrunnen“ mit Trinkwasseraufbereitungsanlage

Erbaut durch die Stadt Osterburken im Rahmen ihrer Konzeption Gesamtwasserversorgung mit Unterstützung des Landes.

Projektinformationen:
 Aufbereitungsbauwerk mit Rohwasserkammer (l=70m³) und zwei Reinwasserkammern (l=2x56 m³) als Betriebsgebäude mit Trinkwasseraufbereitungsanlage und Pumpenanlage zur Trinkwasserenthärtung von 26° d.H. auf 11-13° d.H. (neue Härtebezeichnung: mittel, 1,5-2,5 mmol/l), Aufbereitungsleistung Reinwasserkapazität 237.250 m³/Jahr.

Eine Investition in Ihre Zukunft!	Bauherr: Stadt Osterburken Am Marktplatz 3 74706 Osterburken	
Mit Förderung durch das Ministerium für Umwelt, Naturschutz und Verkehr Baden-Württemberg	Zuständige Behörden: Baden-Württemberg	Regierungspräsidium Karlsruhe 76247 Karlsruhe Landratsamt Neckar-Odenwald-Kreis Renzstraße 10 · 74821 Mosbach
	Planung, Bauleitung: WALTER+PARTNER GbR BERATENDE INGENIEURE VBI	Ing.-Büro WALTER+PARTNER GbR Beratende Ingenieure VBI Marktstraße 19 · 74740 Adelsheim
Technische Bauwerksausrüstung: KUHN <small>water experts - world wide</small>	KUHN GmbH Franz-Kuhn-Straße 1-3 74746 Höpfingen	
Baufirmen: BRANDEL-BAU GmbH Stambergweg 4 97941 Tauberbischofsheim	Holzbau Kuhn Der Partner vor Ort Schlierstädter Str. 24 74706 Osterburken	

Process flow

1. Step: By means of frequency-controlled submerged pumps raw untreated water is removed from the fountain into the raw untreated water chamber with 70 cubic meters capacity in the processing plant;
2. Step: The nanofiltration plant is equipped with additional pumps which have to create a system pressure exactly defined for a trouble free function of the plant;
3. Step: Pre-filtration, membrane filtration, trickling degasification and collecting the prepared water in pure water chambers with 56 cubic meters capacity;
4. Step: Decontamination of the water by UV light after the pure water chambers;
5. Step: Further pumping of clean water that has now reached drinking water quality, in the local high containers.

The treatment capacity of the plant is 650 cubic meters in 14 hours – this is the average daily requirement of the city Osterburken. So the degree of water hardness decreases from 26 to 11-13° dH. For safety reasons many components are deployed redundantly, this means, for example, for each pump an additional pump is available. The plant records all fill-levels, pressures, flow rates and even the pH value and the cloudiness of the water and displays the values on the operator panel in the control cubicle. Deviations in the conductivity show early on whether the salinity of the water has changed. This could indicate a defective membrane.

A special feature of the plant is that the hardness degree can be changed into a variable set point later, if required. The really outstanding feature of this nanofiltration however is the fact that by a dynamic drinking water reservoir management and a variable throughput control of the softening process, an optimized operation with a switching cycle of 1/d is possible.

Control set up:

1 x 314-6CG03	SPEED7 CPU
1 x 612-3B2I0-BMB	Touch Panel
3 x 053-1DP00	SLIO Profibus slave
12 x 021-1BF00	8xDI
3 x 022-1BF00	8xDO 0,5A
7 x 031-1BD40	4xAI current
5 x 032-1BD40	4xAO current



Nanofiltration

As a central control a CPU 314-6CG03 with SPEED7 technology is deployed as a central control, including a Profibus and an Ethernet interface for panel coupling and programming. Thus saving of the need for expensive communication processors that would need have to be directly connected to the CPU is possible.

The SPEED7 technology is integrated into one of the fastest control systems worldwide programmable with Step7 from Siemens. In this way the large number of program modules and many programmed software controllers can easily be handled on the compact CPU within cycle times of 2 milliseconds. Additionally the CPU has integrated inputs and outputs. A further 8 channels can be used as DI/Os if necessary. The operation of the CPU without an additional external memory card is possible.

The rest of the sensor and actuator level are connected via Profibus to the controller. The small, compact SLIO modules that enable the connection to the controller require only a small space in the control cubicle and are available in many different versions. In this project Kuhn arranged



three decentralized stations with IOs: one in the central control cubicle, one directly on the nano-filtration and the third in a mobile cleaning plant. The last one is connected via PROFIBUS if required.

The cage clamp terminals enable a fast and easy wiring. Labeling strips and diagnosis LEDs with direct allocation to the signal channels ensure a good overview in case of trouble at all times. Due to the decentralized installation the efforts required for cabling are reduced to a minimum

The appropriate 12" Touch panel from VIPA is supplied with the preinstalled operating system Windows CE 5.0 Pro and the preinstalled Runtime Movicon 11. Movicon 11 permits as many tags as the memory capacity of the Touch panel allows to be installed. With the integrated 128 MB work memory and the 2 GB user memory, there are sufficient resources available for this. The panel is connected to the PLC via Ethernet. Besides the on-site display and the on-site operation the panel enables the storage of data in the integrated ring memory. Additionally, the panel has an competent alarm management, which is activated when limit values are exceeded or fault messages are sent. Of course there are also miscellaneous plant images that are provided with parameters. The Touch panel has various trend graphics that enables the observation of different objects over a long period of time..

All required components starting with PLC up to operator panels are provided by VIPA. "That makes the work for us as a plant constructor much easier. We get everything from one source", says Thomas Schäfer.

Alarm management for maximum safety via Touch Panels

All irregularities are forwarded by the plant directly to the control point, where data is consolidated from 5 communities and around 40 stations, from the well house up to the reservoir. The connection is established by a GPRS modem, which is also placed in the control cubicle. Depending on the message a technician can be sent to the plant or he can access the plant directly by remote control. So, for example, sliders can be closed by remote control or pumps can be switched on and off if required. The system updates the measured values periodically every 15 minutes – besides this a general checkback is possible at any time, then all current data is displayed immediately. All plant parameters can also be seen via internet. This allows the technician who is on-call at the weekend, firstly to see what is happening at that moment on site from his own

PC or from his smartphone and then immediately take the appropriate tools or spare parts with him. Additionally the data is logged in the ring memory of the VIPA Touch panel, so all parameters of the past 24 hours are available at any time. This is important to find out the reasons for malfunctions. ■



Author: Mark Kohl

Thomas Schäfer

Conclusion

There are many processes, starting with the pumps in the well house up to the feed-in into the drinking water network, which must run reliably to ensure the availability of drinking water at all times. So the CPUs run extremely fast and have serially a large memory and a flexible memory management that can be easily extended by means of additional memory cards. The integrated Ethernet interface facilitates the programming. The periphery is connected decentralized via the SLIO system. The visualization of the 12" panel completes the system. We have been deploying VIPA systems in our plants for years," says project manager Thomas Schäfer. "All our co-workers are able to work with the Step7 programming. Besides this the personal attention of the VIPA team is highly commendable. Even on Friday night we can contact the VIPA sales engineer, Mr. Mark Kohl, or an expert on the application by phone. „

Operator: Water supply Bauland Ltd.

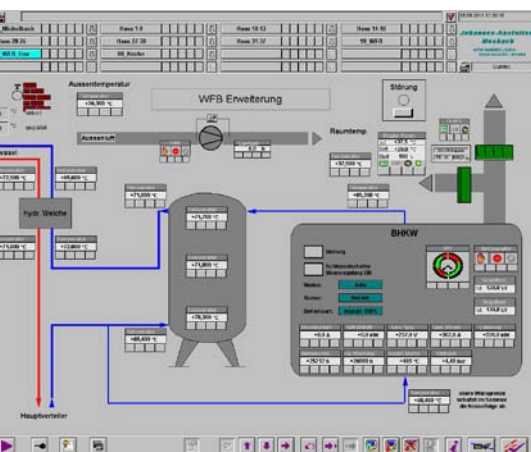
Construction management: Agency Walter and Partner, Adelsheim

Plant construction: KUHN Ltd. Technical plants Höpfingen, www.kuhn-gmbh.de

System partner: VIPA (PLC), Fa. Grünbeck (filtration modules)



Map of the facility



Controller of the heating in the old building



Distribution hot water and steam

Integration at all levels

Building management technology with VIPA control systems

3,200 disabled people are cared for in the facilities of the Johannes deaconry in Mosbach/Germany. The roomy areas, including workshops, tenements and therapy facilities, have their own drinking water fountain and generate their own central heating. The building management system with VIPA guarantees trouble free procedures everywhere and efficient use of energy.

The Johannes deaconry was founded in 1880 and is one of the oldest institutions for disabled people and people with comparable needs for support in South Germany. Currently 3,200 people are supported in their facilities, accompanied, treated and cared for. Furthermore persons who live in families or in their own homes are looked after from here.

Large properties

Among all the many locations of the Johannes deaconry, the locations Schwarzach and Mosbach are the largest. 560 people live in homes and external living groups in the location Mosbach.

Furthermore there is a neurological-psychiatric hospital including a day hospital, a hospital for internal medicine, a special needs school and a kindergarten for 135 children, workshops for disabled people with 470 places, the vocational training center with 380 apprenticeship places including a special trade school, a college and external living groups and a professional school for social affairs which offers 240 places in the fields of health education nursing, health education assistance and help care for the elderly.

Via its own fountain drinking water is pumped and treated and stored in a reservoir. At the top of the area is also the technical center, where heat generation for the entire area is carried out centrally. Here the process water is heated for the district heating network and steam for the laundry and kitchen is produced. After all, especially in the care and hospital area a large amount of dirty laundry has to be cleaned and mangled in its own laundry. In the cold storage houses the food for many residents and the staff has to be stored and also the air conditioning for example in the kitchen area is provided centrally.

More clarity

As one can imagine all these areas consume large amounts of energy. Part of it is manufactured in its own CHP. The rest is purchased. The deaconry decided to equip both properties in Mosbach and Schwarzach completely with intelligent technology, in order to profit from the savings potential, to have more clarity about the consumption amounts and to be able to react faster if there is a malfunction.

The demands on the system were enormous: Not only heating, air conditioning and heat generation have to be integrated, but also water and current supply. All important parameters always have to be monitored and protocolled from drinking water and warm water treatment up to the water level in the vessels and the flow rate of the pumps. Safety functions are also provided – for example, leakage sensors prevent water damage in the individual houses and automatically set off the alarm and cut off the water circuit.

Tremendous amounts of data

„All in all there is a tremendous amount of analogue values, which have to be processed”, says the planner Friedrich Schmitt. “In Schwarzach we have more than 10,000 I/O points and in Mosbach there will be significantly more”, he said, explaining the



Controller in the building of the fountain

status of the realization. So he was searching for a system, which was able to process this amount of data – but at the same time the space and investment requirements had to remain tolerable.

He found what he was searching for at VIPA GmbH – a medium sized company from Herzogenaurach, whose solutions for building automation systems are already deployed in many buildings worldwide and are also set as a standard in many industrial enterprises.

All deployed SPEED7 CPUs of the system 300S from VIPA have an Ethernet and PROFIBUS master interface as standard – „this is exactly what we require for our application“, says Schmitt. Besides this he was impressed by the powerful memory compared to other manufacturers. „I have to pay around 1,000 euros more to have this capacity and comparable interfaces“, he says, explaining his reason for choosing VIPA components. Additionally, with VIPA he has considerably more space in the control cubicle – in addition he is able to extend his 315SB CPU and the decentralized PROFIBUS slave 353-1DP01 with up to 32 modules in a single row. „Here are in part 800 up to 1000 data points per CPU – first of all, the PLC has to process all this“, he says, reporting about the challenges of the complex domestic engineering at the deaconry.



Power house

VIPA CPUs as solution

He has built the entire control engineering including the control technology as an Ethernet network, which connect the single CPUs in different buildings together and provides different values of the CPUs for the superior guide-system. The required TCP/IP interface is available at all VIPA SPEED7 controls as standard. Additionally a central server with WinCC from Siemens is available as a backbone. Here all data is protocolled and additionally a printer in the technical base continuously prints parameters which are defined and particularly important. Furthermore the new I/O system SLIO which is also from VIPA, for example is deployed as decentralized periphery at the water penetration pumps. The VIPA compact control system 200V with the M-Bus master is used for various flow rate counts.

More safety

Alarms and malfunction messages are monitored on the screen of the employee in the technical control center which is staffed around the clock. As it is a matter of qualified messages in plain terms, the person responsible can decide whether he has to call a technician immediately or if the removal of the error can be left until the next day.

There is a RJ45 interface in every control cubicle to read data at any time on-site or to access the control. Via notebook and a standard Ethernet cable the technicians have an overview of the entire plant, can search for the reasons of interferences or can make changes of the programming directly at any time.

Touch panels on site

Additionally many control cubicles are equipped with VIPA 5.7" touch panels including integrated Ethernet interface. They monitor all relevant values of particular aggregates and are programmed according to the same structure, so every technician is able to orient himself everywhere and anytime trouble free.

While in Schwarzach the automatization, with 30 VIPA controls in total, is already completed, Friedrich Schmitt is still improving the last applications in Mosbach. Also the next steps are clear. So, for example, a load management is being planned to decrease the operating costs. Finally the whole project will consist of 60 VIPA control systems and should be accomplished by the end of the year.

„The decision towards VIPA with its full range of controls, touch panels and I/O systems was for us in all cases the right decision“, says Schmitt, confirming his selection. „Here the components can show what they are capable of.“ ■

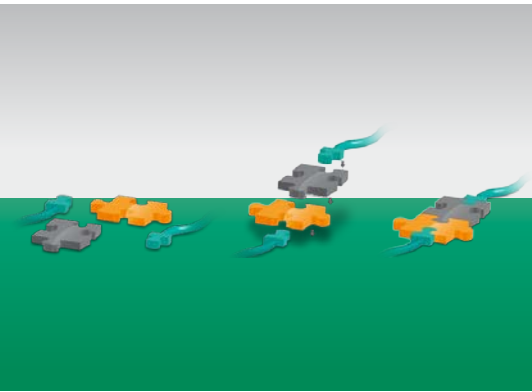


Author: Mark Kohl

Friedrich Schmitt

Conclusion

- Via the SPEED7 technology the VIPA CPU is particularly suitable for the special speed requirements in the building technology.
- Without additional hardware the VIPA SPEED7 CPU already has all required interfaces like MPI, PROFIBUS master and Ethernet on board.
- In the case of software expansion the memory of the SPEED7 CPU can be expanded via MCC from VIPA without hardware exchange.
- VIPA 315SB + 353-1DP01 – up to 32 modules in a single line expandable
- VIPA System 200V module variety – M-Bus master for flow rate count
- VIPA SLIO system – the new decentralized system from VIPA - enables with highly modular components the installation of various decentralized stations in a compact and space saving way and therefore perfect for the building control.
- VIPA touch panels – by the performance and the integrated Ethernet interfaces are particularly suitable for large memory demands at networking in the building management system.
- VIPA CPUs and touch panels with integrated Ethernet interface – easy programming without special programming adapter for technicians.



VIPA Business Solution

Customer-specific complete solutions relating to VIPA PLCs

For exceptional control requirements, it is no longer enough, to offer automation customers pure hardware solutions. You, as our customers expect complete solutions that are tailored to your requirements. Such a complete package includes a hardware solution, complementary software solutions and concepts that are tailored to your specific needs. As a rule, however, these are not solutions that are lying in the drawer already complete, but are assembled according to your requirements using individual software modules.

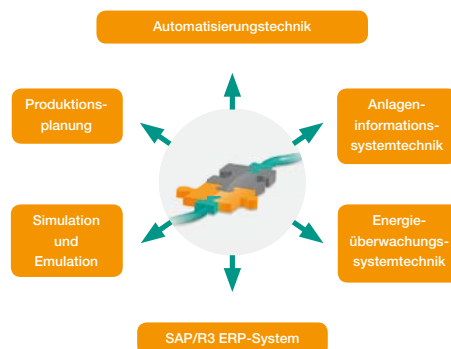
It is becoming increasingly clear that you, as our customer, not only desire to have the latest and best hardware in the deployment of automation technology, but to link the entire control system with higher level management systems, for example SAP/R3, and thus make the entire system more transparent. Such management systems line themselves up with different objectives, the most important include:

- The quality management DIN ISO 9001
- The DIN ISO 14001 environmental management
- The energy management system DIN EN ISO 50001

Now exactly here our concept, „VIPA Business Solution“ applies. In addition to the VIPA product specialists for PLC Systems and Visualization, numerous VIPA System partners are involved in this concept in order to give you a complete solution best adapted for your requirements. Stability and reliability are the benchmark for the selection of these partners together with whom we have designed a completely new concept. We call this solution concept...

VIPA Management Connector

As the name suggests, we present here an interface between your control system and your parent Management system. The aim Behind it is to optimize the control circuits integrated in the various management systems and to make relevant information available from the production, energy management and control in simple way. But still the basic principle applies to maintain the existing Structures in hardware and software as much as possible and to optimize them with respect to the new requirements. In order to be able to offer the best expertise for such a complete solution the following partners are included in this solution concept:



- **VIPA GmbH:** S7 controllers, Control devices, tele service, accessories and management connector
- **HAAS Automation:** plant information system AIS, H.A.A.S-Software
- **ASPROVA AG:** Solutions for production planning
- **INCONTROL Simulation Solutions:** Plant simulation and emulation Investment protection, decision-making and Communication support (simulation software Enterprise Dynamics)
- **Cellent Mittelstandsberatung GmbH:** Solutions in the SAP/R3 system
- **Janitza electronics GmbH:** Solutions in energy measurement technology

Systems work, if interactions of all elements are structured and coordinated with each other.

We have already successfully implemented several projects on the basis of this concept together with the aforementioned Partners. ■

Your contact partner for VIPA Business Solution:

Alwin Faber
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Mobil: +49 172 813 2209
alwin.faber@vipa.de



MAGNA Spiegelsysteme	Operating data quality painting robots	Assamstadt (D)
Rittal	All-in time painting	Burbach (D)
Voestalpine Anarbeitung Linz	Traceability Weld data	Linz /Österreich (A)
IFGL – Hofmann Ceramic	Kiln control for Ceramic	Indien
PTM Mueller Automotive	MDE / BDE communication with ERP/PPS	Nauroth (D)
Johnson Controls	Quality data, Process data	BMW / USA
Kreck-Metall	High-rack controller with connectivity to ERP	Dietzhölztal (D)
DN - Dynamit Nobel	Wastewater treatment plant	Würgendorf (D)
Schaeffler Schweinfurt	Dynamic harmonic compensation	Schweinfurt (D)
Kleemann	Migration S5-S7 from VIPA and integration with an ERP-System	Karlstein (D)
Englander Israel	MDE / BDE	Caesarea / Israel
Schaefer Kalk	Energy management	Diez (D)
Küster Automotive	Test / assembly station window lifter Golf Cabrio	Ehringshausen (D)



A new design of the panel's inner life allows for fan and disk free operation, that means that these panels work with no moving parts inside the casing. In this way they achieve an extraordinary performance and reliability. The LED backlighting allows for significantly longer display lifetime. Currently, the ecoPanels are available in sizes 4.3" (resolution 480 x 272 pixels) and 7" (Resolution 800 x 480 pixel). A new ARM 11 processor running at 533 MHz clock rate is exactly tailored to the operating system Windows® Embedded CE 6.0 Core, pre-installed in the panel, and the SCADA software Movicon Basic. Numerous standard available interfaces such as Ethernet, USB or also a serial Interface allows for the universal deployment of ecoPanels in your system.

The new way for efficient visualization

The combination of Windows® operating system and SCADA software Movicon is simply predestined for the Panels of this price and performance class. Movicon Basic includes a full and unrestricted Basic license. The software concentrates the powerful Movicon technology in simplified form into an extremely user-friendly editing environment. Modular and scalable projects provide a powerful project fit to all customer needs, and ensure complete compatibility with higher Movicon SCADA levels. The large Distribution of the Windows® operating systems and the easy handling of the visualization software also helps „newcomers“ in visualization to immediately get started in project work.

In the development of Movicon 11 Progea aimed to establish project planning tools that reduce the development time to acceptable levels. Another requirement of modern automation technology is flexibility, i.e. the Ability to adapt quickly to customer requirements, without having to abandon in-house know-how. An integrated automation

platform from the control level (PLC, HMI) up to the SCADA / MES-enterprise level can be realized with Movicon 11. Many years of experience in sales of Panels, different operating systems and different visualizations have led us to bring new solutions to the market, especially for users of small and medium-sized plants, which allow rapid and



problem free access. The new ecoPanels form an ideal complement to our control systems 200V and 300S, but also to systems of other Manufacturers as they are universally applicable.

VIPA expand their TouchPanel range

eco Panels

With the new EcoPanel series VIPA opens up new possibilities for visualization for system builders and mechanical engineers. Recognizable by the wide screen format and new attractive prices, the new panel generation stands for performance and reliability while being value for money. The new EcoPanels are above all designed for the visualization and operation of small to medium sized plants. but offer the performance of larger and more powerful panels.

The panels are adjusted to standard sizes with the panel cutout dimensions: the 4.3 „panel fits into the Panel cut out of the SiemensKTP400 panels, the 7 „panel is identical to the VIPA 5.7 „and 6.5“ panels and with Siemens TP170 and MP177.

With the combination of VIPA control



systems and VIPA ecoPanels we offer an almost unbeatable solution in price-performance ratio. ■

The following outlined technical features of hardware and software complement the representation:

	VIPA 604LC	VIPA 607LC
Display size:	4,3"	7"
Display resolution:	480 x 272 pixel	800 x 480 pixel
Display type:	TFT Wide Touch Screen 65.536 colors, LED backlight	TFT Wide Touch Screen 65.536 colors, LED backlight
Touchscreen:	resistive touch operation	resistive touch operation
CPU:	ARM 11, 533 MHz	ARM 11, 533 MHz
Operating system:	Windows® Embedded CE 6.0 Core	Windows® Embedded CE 6.0 Core
Memory (Flash):	128 MB	128 MB
Memory (RAM):	128 MB	128 MB
Card slot:	SD/MMC slot	SD/MMC slot
Interfaces:	1x RS232 (DB9) 1x RS232/422/485 (DB25) 1x USB-A 1x Ethernet 10/100 Mbit	1x RS232, (DB9) 1x RS232/422/485, (DB25) 1x USB-A 1x Ethernet 10/100 Mbit
MPI/DP:	optionally available	optionally available
external input:	external mouse and keyboard via USB connectable	external mouse and keyboard via USB connectable
Clock:	Hardware clock battery-backed	Hardware clock battery-backed
Power supply:	11-36 VDC	11-36 VDC
Case:	plastic case	plastic case
Measurements (mm):	140 x 116 x 57	212 x 156 x 57
Cut-out (mm):	123 x 99, identical to Siemens KTP400	197 x 141, identical to VIPA 605 & 606, and Siemens TP170 / MP177
Weight:	ca. 500g	ca. 1.300g
Protection class:	front side: IP65 back side: IP20	front side: IP65 back side: IP20
Installation position:	vertically & horizontally	vertically & horizontally
Certification:	CE & UL	CE & UL
VIPA order no.:	62E-MDC0-DH	62H-MDC0-DH



Both modules are so designed that they can be mounted on Standard 35mm rails and used with all types of DP cables. The extended 12 Mbps core of the Repeater B1 is identical to that of PROFiHub B5. The device protection class IP20 allows for both modules to be deployed even in harsh industrial environments. The PROFIBUS Cables can be attached directly via screw terminals or via DB9 connectors. The Users can even mix both connection types together.

The biggest advantage of using these Modules is the additional protection of the PROFIBUS by the built-in protection functions. In addition to short-circuit protection for each segment, the user has the possibility, even during operation, to add or remove slaves. In both Modules integrated galvanic isolation of the channels offers additional protection against non-galvanically insulated devices. Finally PROFIBUS networks can be flexibly extended by up to 31 users per channel with the use of the repeater or hub, without having to change the basic network structure. Thus, a clearly organized network structure can be maintained.

Expansion **PROFIBUS** accessories

Now also available: PROFIBUS hub and repeater

VIPA has extended its already very broad range of products for PROFIBUS to include a repeater and a 5-port hub. This offers the user the possibility of transmitting PROFIBUS signals, interference free over distances of up to 1200m cable length. With both modules transmission rates of 12 Mbit/s are feasible depending on cable lengths.

Compact PROFIBUS repeater B1

Electric

- 1 insulated channel (2 segments)
- Increased signal strength
- Up to 31 devices per segment connectable
- Up to 1200 m cable length (depending on the transmission rate)
- No limit in cascaded interconnection
- Redundant power supply (19...28 VDC)

Protocol

- Transparent for all PROFIBUS and MPI protocols
- 9,6 Kbps - 12 Mbps (automatic baud detection)
- No Profibus address necessary

Mechanical

- Built-in termination resistors (individually switchable)
- Diagnostic LEDs for status display on the bus
- Removable screw terminals and 1 DB9 connector
- Mounting on standard rail
- IP 20 classification
- (according to DIN 40 050)
- Robust industrial housing

5 channel PROFi Hub B5

Product Features

- 5 insulated channels (Repeater segments)
- Transparent for all PROFIBUS and MPI protocols
- DP - RS 485 specifications for each channel
- Up to 31 users per channel
- 9,6 Kbps - 12 Mbps (automatic baud rate detection)
- 1200 m spur line length (depending on the transmission rate)
- No limit in serial or cascading interconnection
- No Profibus address necessary
- Built-in termination resistors (disengageable)
- LED indicator for indicating the termination
- Configurable grounding (directly or capacitive)
- Screw terminals and a DB9 connectors possible
- Protection class IP 20 (DIN 40 050)

Article no.: 973-0BA00

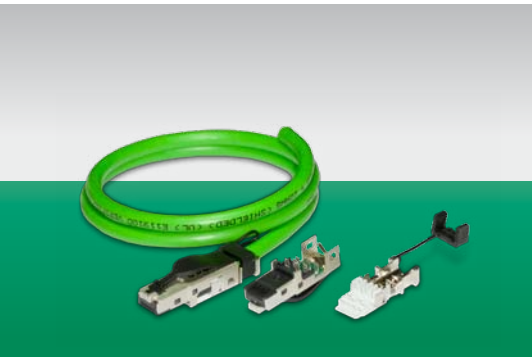


PROFIBUS repeater B1



PROFI Hub B5

Our sales department will be very happy to submit a competitive offer which is exactly tailored to your requirements. ■



PROFINET accessories

Now also available: cables and connectors

In addition to our already existing PROFINET products, PROFINET cables and relevant connectors are now available.

Under the order number 830-0PC00, 830-0PD00, 830- and 830-0PE00 0PF00 you can now order PROFINET cable from us in lengths of 100m, 200m, 500m and 1000m. The relevant connectors (straight version)

have order numbers 972-0PN00 (single pack) and 972-8PN00 (10 pc box). Ask us to submit an informative offer. ■



Two new CPUs in 200V

PG/OP interface now available in two CPUs of the classical compact system

The RJ45 Ethernet interface for PG / OP communication has proven itself for a long time in the CPUs of our control system 300S. What could be more logical, therefore, than to take over this physics in two new compact CPUs of our system 200V. Here VIPA has responded clearly to the needs and requirements of customers: A reliable control and I / O system with the flexibility that our customers need - all at an unbeatable price.



Although all CPUs of the 200V system still have an MPI interface for programming and connection visualization and input devices, it is nevertheless evident that the desire among our customers for additional connectivity via Ethernet is continuing to grow more and more. Especially in combination with the TouchPanel series classicLine and ecoLine this extension makes perfect sense. In our CPUs with SPEED7 technology we implemented this option hardware-based from the beginning. But here it is necessary to distinguish between the different types of connections via the existing Ethernet RJ45 interfaces. While all VIPA „NET“ CPUs feature a CP243/343 for active communication in networks the communication of the PG / OP interface to passive connections is limited. Every time when the CPU is not embedded

in an Ethernet network this passive PG / OP interface simplifies the connection to the programming device or a visualization and saves the need for additional hardware components; an affordable solution and in line with the market as demonstrated with the 300S system. Out of this basic idea two CPUs in the 200V system, the now „classic“ and most successful compact system, were likewise equipped with Ethernet PG/OP interface. At the same time, the integrated working and Load memory doubled. This also corresponds to a frequently expressed desire of the user. ■

Profichip*Innovative chip solutions for Automation technology*

In the same year the development the first PROFIBUS slave Controller (VPC3 +) was successfully completed. In August 2000, when five engineers, a graduate student and an intern were busy working in the Development Department, work was begun on the SPEED7 processor, simultaneously with the MPI-chip. By April 2001 the concept for the PLC processor as part of a thesis was fixed and a prototype was able to process a basic level of S7 commands. Thanks to close cooperation with the VIPA CPU firmware team, operation with the standard S7-engineering tools was also possible at this time. To reach the now known full range of functions of the PLC7000 with the support of 1400 commands, the status module, breakpoints and the integrated MPI-chip took until May 2003.

Already in 2002 the course was set with the VIPA development department for the System 300S. Compared with the S7 CPUs of the 300V and 200V series, the SPEED7 processor accelerated the S7 code processing by 40 times, the new ARM main processor provided for a significantly faster interaction with the



periphery, the MPI-chip enabled a 64 times higher Communication speed with the control panels

and the programming device. With the SPEED-Bus backplane and FPGAs used there, the basis for a fast local connection of I / O modules and communication processors was created.

The year 2004 stood under the sign of the SPEED-Bus FPGAs for the Profibus master, the Ethernet CPs, the digital analog I / O modules and the technology function of the CPU 314ST. The end of 2006 saw the release of the chip PLC7001. In it the SPEED7 Functions of the compact class CPUs of the Series 300SC were integrated.



Further development highlights between 2005 und 2010:

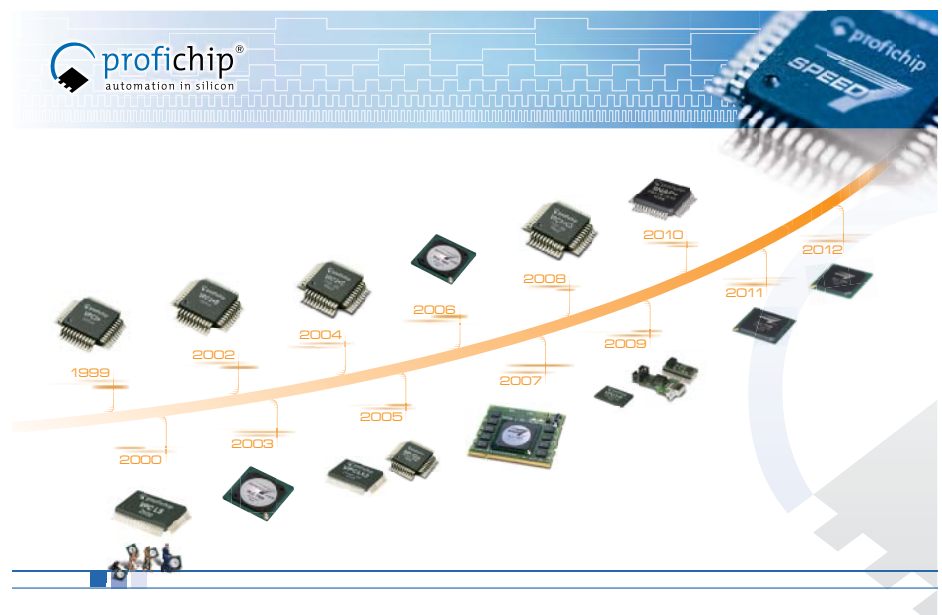
- The stand-alone MPI-chip MPI12x, the only freely available MPI controller for transmission rates of up to 12 Mbit/s
- The PROFIBUS Slave module VPC3 + C with full DP-V2 protocol support
- The VPC3 + S, the world's smallest PROFIBUS Slave Controller
- The connection FPGA of Interbus S-Master on the SPEED-Bus of the SPEED7 300S CPUs
- SPEED-Bus 8 channel fast analog-to-Input card with 40 kHz sampling rate
- Numerous „tailored“ FPGA Designs for the support of VIPA products

In parallel to the resumption of work on PLC7100, in early 2007 work began on the new backplane bus concept „SliceBus“. This bus helps the VIPA System SLIO, established on the market since 2010, to achieve significantly higher Performance, interference immunity and ability to diagnose compared to previous generations and compared to the solutions of competitors. It also offers extensive support for microsecond precision time synchronization. SNAP +, the backplane

bus ASIC developed for this purpose, has been available since late 2011. Here also, the close cooperation of Profichip, VIPA hardware and software development and system testing proved to be to be very beneficial. So again not only future-oriented In-house products emerged, but also the innovative technology concept obviously struck a nerve on the market, so that there are now numerous OEM-interested parties there.

In 2011 the third generation of SPEED7 Processor (PLC7100) went into the final verification phase and as silicon has undergone comprehensive release tests since the end of 2011.

This chip, comprising a total of eight processors, combines the SPEED7 processor, three PROFIBUS master, an ARM Processor, the SliceBus master, two Ethernet interfaces and a CAN PROFIBUS slave on a piece of silicon. Thereby, this chip represents a platform for future VIPA S7 CPUs. The SMC1000 is a stripped down version of the PLC7100, in which the SPEED7 core is absent, but yet which is especially optimized for deployment in field bus coupler with SliceBus connection.



From Chip to ASIC

The PLC7100 manufactured in 0.13µm technology unites about 50 million transistors (Switch), switch up to 200 million times per second, on a quarter of the Surface of a one cent coin. This corresponds to about the complexity of an Intel Pentium 4 Processor of the second generation. Compared with a human hair (diameter approximately 120 microns) the extremely fine structures of such a transistor are almost a thousand times smaller, and even a single grain of dust with a diameter of 50 microns already constitutes unacceptable pollution on the surface of the chip. The Semiconductor manufacturing process therefore requires not only the highest precision, but also places enormous demands on the purity of the raw materials used and the ambient air.

The microchips of Profichip Ltd. are manufactured in Taiwan. Here the specialists are located, where the big global players from the IT and telecommunications industry have their products manufactured. When, from the Profichip development side, all functions have been implemented and verified, at least three months pass before the computers in Germany and Taiwan in several iterations reach the construction plan of the integrated circuit, the so-called Chip layout, in order to start production. The manufacturer of the Silicon chip itself takes an additional 3 to 6 months depending on the chosen semiconductor technology. Here in approximately 160 separate production steps more than 20 ultra-thin layers are applied onto the Silicon base material, the so-called Wafer. After a first test the chips are separated, mounted into housings and electrically contacted by a fine gold wire. After the hermetic closing of the housing a complete test is carried out once again on the completed integrated circuits, before the vacuum-sealed components begin their journey to the Profichip headquarters.

Due to the long production times and the high costs for a new Chip generation in the six to seven digit euro range more than half of the development time is spent on verification and testing.

These are simulations of the chip on the PC, in which a second in the life of the chip takes about 170 hours of computing time on a high-performance PC platform. Because of the increasing design complexity and the resulting simulation times, it is not practi-

cable to verify the chip alone by simulation. Therefore, several prototype boards based on the largest currently available FPGAs are in use. These boards are each developed project-specific in close cooperation with the VIPA hardware department and provide an almost one-to-one image of later chips. This makes it is possible to already test the design intensively during the development phase under real system conditions and to develop chip-specific software early. For two years the central parts of the chip have been additionally checked with computer-based mathematical methods for functional correctness. In this so-called formal verification, a mathematical model of the circuitry part to be tested is first created. Starting from defined boundary conditions for a specific operating state the Tool then calculates whether the circuitry part can only have permissible states that are laid down by the specifications and the Test plan. If this is the case, it is mathematically proven that the

worldwide and supports the distribution network.

Employees

Profichip grew from an initial workforce of five staff to 16 engineers in the Development Department, two engineers in customer support and three sales staff in addition to the management and human resources by early 2012. To always be on the cutting edge of Technology profichip Ltd is very active in numerous organizations worldwide. Because of the close and good cooperation with the Georg-Simon-Ohm University of Nuremberg 15 diploma theses, and two bachelor theses and four Master of Science thesis were completed successfully.

The highly successful development of Profichip Ltd. shows that even as a relatively „small“ company on the Market it is definitely possible to play along with the „big boys“, provided you have the right solutions. The following article describes exactly how



The complete Profichip team with CEO Wolfgang Seel (4th from right) and Vice president Willi Heintz (7th from right) are pleased about the TOP100 award in July 2011.

circuitry part works correctly under the defined boundary conditions. Profichip applies the latest and future-oriented verification methods which, even with leading semiconductor manufacturers, have so far only been used sporadically.

As soon as the finished silicon is in house, the customer support team and profichip sales takes over. Here customers are supported by workshops in Product selection, software development, certification, with the device description data and circuit layout both in-house as well as on all continents. Sales is present at trade fairs

Profichip modified the PROFIBUS chip to fit the customer requirements and to provide an intelligent Customer-oriented solution: Piste professionals - skiing and tobogganing in style with PROFIBUS. ■

Authors: Steffen Schleier, Stefan Rübesam



Profis on the piste

Good skiing and toboggan with PROFIBUS

Winter sport in the Alps is an important economic factor. The many ski areas are in direct competition with each other and the demands of the tourists are high. Today snowmaking machines are standard equipment. Even on glaciers they are used to improve the snow conditions - intelligently networked to save energy and water during operation. PROFIBUS often provides for perfect communication between all components - supported by a special solution from profichip.

Blue sky, bright sunshine and sparkling snow – this is what a perfect winter holiday looks like. But as you weave your way down into the valley you do not know how much technology is going on in secret so that there are freshly groomed slopes every morning. In large areas there are often hundreds of snow makers, that are mounted at important points or are mobile. To be able to produce the snow, besides certain climatic conditions, above all electrical current and of course sufficient water is required. Pump stations, reservoirs and pipelines at least 1.50 meters deep provide for the supply of the precious water. Additionally power supply lines and data cables are necessary to control and check the individual facilities remotely.

Values such as air temperature and humidity, flow rate of the pumps, water temperature and pressure have to be checked permanently, to ensure an optimum process. After

all, snow can only be produced under certain climatic conditions. Furthermore the pipelines are constantly monitored for leaks. At high altitudes, where permafrost prevails, it is also important to drain the pipes immediately after the snow, so that standing water does not freeze. Needless to say these are all only realizable with an intelligent automation system.

Normally all data is visualized at one or more control posts. The snow machine operator decides together with the responsible person for the pistes, who checks the tracks to see where the snow machine is needed. This means, that at the beginning of the season all machines are working at full capacity to produce good slopes at first frost as quickly as possible. Later – depending on the weather conditions – the snow machines will only be operated as required, in order to ensure ideal skiing conditions for the sportsman and woman.

In the control post not only are the central and group connections activated. Here all other parameters are also monitored, to check for burst pipes for example. A sophisticated alarm management is now as much a standard feature as the recording of measured values, load management and compliance monitoring of water concessions.

TechnoAlpin AG located in Bozen is a company which has become an expert in sophisticated snow making. The world market leader develops and produces machines for snow making but also supplies complete systems and they have developed their own controls for this purpose. These systems are tailored perfectly for such specific applications in ice and snow with their large distances.

“Our own products are normally networked together via Modbus protocol”, says Gerald Reichegger, developer at TechnoAlpin. But there are also mixed systems which



are consisting consist of components from different companies. Sometimes already existing, older snow machines of different manufacturers have to be integrated. "Some customers especially order controllers or visualization systems of different manufacturers in order to remain vendor-independent", says Reichegger. In these cases the common communication protocol is usually PROFIBUS DP.

This is not a problem for the controllers of TechnoAlpins. The company offers a hardware component in the form of a REG unit, which is placed next to the controller in the control cubicle and provides the interface to PROFIBUS.

Unfortunately there are also manufacturers whose devices do not work according to the PROFIBUS DP standards, but work on an older fieldbus level. "Of course, we have to be able to integrate these devices into a plant", says Gerald Reichegger. Hence we

looked for ASICs that are able to facilitate the connection to PROFIBUS DP and to the fieldbus protocol for our own devices.

„We asked several manufacturers but we were not always met with open ears“,

says Reichegger. „The larger a company is, the more difficult it is to get an expert on the phone“, he said, relating his experiences. Finally the hardware that was available on the market was not suitable for this type of problem. Some changes to the software were necessary. "Many declined at once as the effort was not immediately profitable for them", he said.

Profichip in Herzogenaurach was the right contact for TechnoAlpin with its request. "Although we are a relatively small company as far as the number of our employees is concerned, but we are particularly flexible to customer requirements and customized solutions", said Lothar Schröttel, sales

manager at Profichip.

So the team of Profichip development, led by Peter Fredehorst, modified the configuration of the PROFIBUS ASICs fast and in an uncomplicated way according to the requests of TechnoAlpin.

„We are very pleased with the cooperation with Profichip and will come back to the know-how from Franconia in the future more often“,

says said Gerald Reichegger relating his good experiences. ■

Links:

<http://www.technoalpin.com>

<http://www.profichip.com>

VIPA Italia

The first foreign subsidiary of the VIPA Ltd.

Courage is the forefront of action,...

VIPA is represented in over 60 countries. Companies become centers of excellence and our international success story is still being continuously written. But do you remember the first chapter of this story? How it all began?



Besides Luigi Bernardelli as CEO, VIPA Italia has 8 co-workers who are responsible for administration, sales and technical support. Additionally VIPA Italia works together with 29 regional sales partners who look after the complete Italian market.

Our main customers for controllers consist of 43% mechanical engineers and 34% control cubicle constructors and service providers of automation engineering. Important fields of application are the food and beverage industry and packaging and assembly machines. Established companies like Coca-Cola and Fiat already use VIPA. Applications in the Gardaland amusement park, at the Monte Bianco tunnel and at Marini Fayat manufacturer of asphalt facilities give a comprehensive picture of the performance of our products and teams.

In the selection of regional sales partners not only the physical proximity to customers was considered, but also the technical competence of the contact person. So the customer gets a comprehensive consulting and reliable service and support in close proximity.

With this performance and sustainability VIPA Italia acquired a leading position and not only in the Italian market. It is also the most profitable company in our global network. This result is for us a sign of confidence of our customers and gives us the motivation to continue and develop our commitment..

...but Fortune is the arbiter of the goal! ■

Author: Susanne Küfner



The foundation stone for the internationalization of VIPA was laid with the establishment of the first foreign subsidiary VIPA Italia S.r.l. (www.vipaitalia.it) by the businessmen Luigi Bernardelli and Wolfgang Seel in 1998).

From a small office with two co-workers for administration and support at the beginning VIPA Italia has today become a company with 800 square meters of floor space and large storage capacities. With the decision for the current location in San Zeno Naviglio near of Brescia an excellent connection to the local infrastructure was established.



Luigi Bernadelli, CEO VIPA Italia S.r.l.
... and his complete teams
(front line from left:
Michele Manicardi, logistics and stock,
Letizia Borghetti, inside sales and assistance,
Tina Messaggi, administration,
Mariana Magni, order processing,
Fernando Travagliati, support leader,
back line:
Roberto Galdoni, area sales manager,
Gaetano Chiappini, sales manager,
Luigi Bernardelli, CEO,
Carlo Bignetti, Support engineer)





At end of the past year we received the following letter of thanks from the youth team of the sports club Germania Obrigheim for the donations of tricots for the youngest club members. The youth team is supervised by Robert Bauer, our contact person for maintenance at EMIG Beverages in Waibstadt/Germany.

„Thanks to the generous donation of 400.- EUR in total from VIPA, the youth team of the sports club Germania Obrigheim could receive plenty of presents for Christmas. Each child got a T-Shirt printed with his or her name. In addition a new cool box was bought including some training utensils. The waiting time for the promise of a donation

was as short as the cycle time of a SPEED7 CPU.

The children, the custodian, the department manager and the parents of the children warmly give their thanks for this kind support. “ ■



The boys and girls of the team are very pleased about the tricots. The team captains Maurice, Kristofer and Max expressed their thanks in the name of the team to Holger Engelhardt and Farschid Nikpour.



Chairman Jochen Khim and Holger Engelhardt with a „VIPA“ tricot

VIPA supports a sport, which requires the highest degree of speed, namely ice hockey, the fastest team sport in the world. Here speed stands for the sport as well as for the automation solutions from VIPA. Whereas our SPEED7 sports teams mainly moved on stable ground up to now, this time we venture onto the ice.

The tricots for the ice hockey team “Mad Dogs Mannheim” were sponsored for the boys age group 1998/1999., The Regional Sales Manager South at VIPA Holger Engelhardt together with the Sale Engineer at VIPA Farschid Nikpour went on the very slippery (U-Bahn!) surface for the photo shooting on 29th February 2012 with the team and the new tricots. The chairman Jochen Khim (Eichenkreuz Union Mannheim) expressed his thanks for the generous donation. With 350 members the “Mad Dogs Mannheim” is one of the largest departments (the text says „mit Abstand die größte Abteilung“ of the Eichenkreuz-Union Mannheim which originally descended from the YMCK Mannheim-Käfertal. It all began with handball, table tennis and karate. Ice

hockey, which, besides football, is very popular in Mannheim, attracts more and more children and young people each season. ■

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> The combination of technology and sports has not only a tradition in Herzogenaurach, but also at VIPA! <

Maximum power in the VIPA tricot

In 9 days through the Himalaya by bicycle

In 9 days through the Himalaya over mountain passes of up to 5600m by bicycle? You may say that's impossible. Ralf Schneider from Wiedner Ltd. our supplier of advertising material, set out to discover his physical limits. His report shows, that such a strenuous task is possible with appropriate planning and preparation and the right physical fitness. His description and pictures give you an impression of this extraordinary trip. Of course we were delighted about the fact that he slipped into a VIPA tricot on the highest pass of his trip. Needless to say Ralf Schneider also brings the highest sporting performance, together with his friends from VIPA, at other sporting events. Here an extract of his detailed report:

The idea to undertake such a crazy trip came during a glass of wine. He already knew this extreme part of the world from previous journeys. After long deliberation he found the route from Manali to Leh which lead to Ladakh from the South side of the Himalayas over some of the highest accessible passes in the North of India.

According to the tour guide the road was supposed to be mostly asphalt and only the last few kilometers to the top of the pass was gravel. The reality was very different. Of course the equipment had to be appropriate: stable trekking bikes, simple technique, no hydraulics and a complete set of spare parts. For the accommodation in the tent really good equipment was obligatory.



- 1) The valley of Indus - the Himalayas in the background
- 2) Abby Tikse in the valley of Indus in Ladakh
- 3) Rotang La Anstieg
- 4) Kardung La Patricia Ehbauer und Ralf Schneider
- 5) Main shopping street in Leh
- 6) The ascent to Kardung La
- 7) Rotang La



Ralf Schneider
Khardung La - Pass - 5606m



The beginning was in Manali on 5th August 2011. The trip continued over following passes:

- Rotang La 3980m
- Baralacha La 4892m
- Sarchu Plateau 4253m (sehr windig!)
- Gata Loops with 23 hair-pin curves
- Lachung La 5065m, the third highest accessible pass in the world
- Tanglang La 5360m, the second highest accessible pass in the world
- and finally the Khardung La from Leh, at 5606m the highest accessible pass in the world.

Ralf Schneider expected the biggest problem on this journey to be the height and therefore the thin air, especially as he had no time for acclimation. To reduce the risk he decided to make the trip with an escort vehicle that transports baggage, food and tents. So a transportation possibility to the next airport in Leh was available in case of necessity. On the one hand the travel time was affected by the diary and on the other hand by the fact that the passes are only open for 3 months a year. Although August is the monsoon season in India, most of the time it remains dry in the Himalayas.

The road conditions were significantly worse than described in the guidebooks, ranging from deep mud to loose sand. The scenery in this area was particularly delightful and physically a real challenge. You can feel clearly that the body regenerates poorly at these heights. In Bharatpur (a camp on this distance) we finally realized that continuing by bike was not possible anymore due to sudden change in weather. It turned out that the accompanying vehicle was absolutely the right decision. So the team decided to take the vehicle from here directly to Leh.

The last and highest pass Khardung La (5606m) could be tackled when the weather got better. After about 45 km uphill Ralf Schneider soon realized that the air was very thin. All these efforts were compensated however by an extraordinary view to the Karakorum/K2 and in the direction of Tibet when he finally reached the top of the pass. After all the impressions and experiences Ralf Schneider came to the conclusion, that the chosen route from Manali to Leh was really worthwhile (if one is willing to accept the stresses and strains of such a tour).

For those who would like to get more information please contact Ralf Schneider: rs@wiedner-werbemittel.de ■

Author and pictures: Ralf Schneider, Elke Wiedner Werbemittel GmbH, Veitsbronn

2. VIPA HerzoCross 04.03.2012

In the first edition of the HerzoCross last year the participants had to fight in particular with the cold and temperatures of around -5°C, so this year the mud was the greatest challenge for the sportsmen and sportswomen. That's why this track had a greater difficulty factor than the previous one of last year. Some running shoes stuck in the mud and the slipstream – which normally is perfect to save energy – meant that you were riding blind, due to the mud constantly splashing into the face of the cyclist who rode behind.

Top class participants

The participants themselves were a little better than last year. The winner Bernd Hagen from SSV Forchheim (00:53:11) had already qualified for the Ironman in Hawaii this year and was second last year. Gerd Manz from the promoter TS Herzogenaurach, who finished second, had already won several races in the region. And also Lasse Ibert is one of the best amateur cyclists in the region. Not to mention Frank Neumann, previous year's winner and defending champion, who took part in the HerzoCross between one week of skiing and one week of cycling training camp. He came fifth.

Habermann beats the premiere winner

So the performance of Rainer Habermann, VIPA's product development manager, who narrowly missed the victory, has to be valued higher. He came 4th, but that was only 10 seconds after the 3rd and 47 seconds after the winner. Winner in the women's ranking was newcomer Stephanie Paulus (ASC Kronach), just before Sonja Steffl, who won against her teammate from Team Königs Apotheke of TSV Altenfurt.

VIPA Team came third

In the newly introduced team valuation of the HerzoCross, VIPA and profichip athletes also had a reason to celebrate. Rainer Habermann, Stefan Scholze, Bernhardt Mültner, Michael Balling and Simon Schlereth came third, following TS Herzogenaurach and the winner team Königs Apotheke of TSV Altenfurt. By the way: three teams from VIPA were among the top ten teams. As in the previous year the most impressive participant was Georg Seeberger, who finished on his 72nd birthday in a time of 01:24:18 h and came 113th overall, and so left some youngsters behind. ■

Author: Sebastian Baumann

2nd VIPA HerzoCross

Habermann narrowly missed victory

The 2nd VIPA HerzoCross was again a great success. More than 200 participants had registered for the first duathlon of the year – at the end 171 of them finished. Rainer Habermann, product development manager, narrowly missed victory and came 4th.



The “Five-rivers cycle Tour“

Bicycle tours of several days between Nuremberg and Regensburg

The VIPA headquarters in Herzogenaurach is located in the heart of the metropolitan area Nuremberg and so in the middle of Franconia. Now the summer has just begun and here are some recommendations for summer leisure activities in a touristically diversified area.



The Franconia region stands for low mountains such as the Fichtelgebirge, the Spessart or the Rhone, but also for lake areas, such as the Franconian Lake District or Main River landscape, the Regnitz, the Altmühl and many other rivers, which are also known outside the region. The selected proposals here are to encourage tours through the region and we particularly address our readers outside the region. The links mentioned below give detailed information, particularly tips for the Franconian cuisine and advice for overnight accommodation. Starting with this issue of the VIPA journal we want to give you now and then helpful suggestions for leisure activities in the Franconian region.

Our tip of the day:

...is a bicycle tour of several days through the three Bavarian regions Upper Palatinate, Lower Bavaria and Middle Franconia along the “Five-rivers-cycle track”. As the name already says: in 5 daily stages between 46 km and 77 km and a total distance of 350 km the tour leads along the rivers Donau, Altmühl, Pegnitz, Vils and Naab and also



partially along the Main-Donau canal and the former Ludwig-Donau-Main canal. It is a circular tour and Nuremberg or Regensburg as point of start and finish is recommended, as the best connections to the motorway network and the public transport network are in these cities.

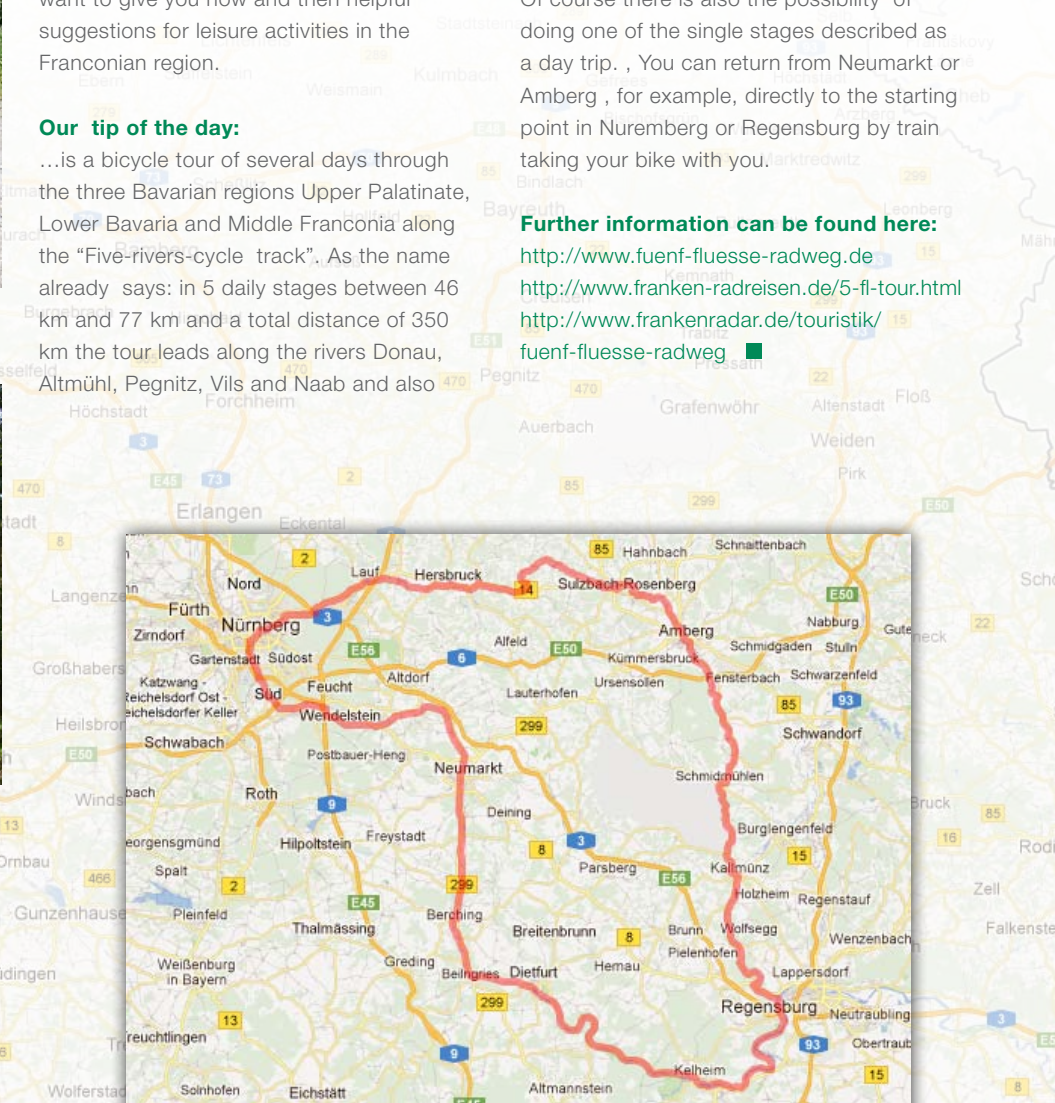
A very detailed description of the tour with information about arrival, topography, distance profile and geographical materials are available here http://www.bayernbike.de/touren/oberpfalz_west/fuenf-fluesse.shtml, A comprehensive picture gallery can be found under:

<http://www.fuenf-fluesse-radweg.de> -> Bilder

Of course there is also the possibility of doing one of the single stages described as a day trip. , You can return from Neumarkt or Amberg , for example, directly to the starting point in Nuremberg or Regensburg by train taking your bike with you.

Further information can be found here:

<http://www.fuenf-fluesse-radweg.de>
<http://www.franken-radreisen.de/5-fl-tour.html>
<http://www.frankenradar.de/touristik/fuenf-fluesse-radweg>



Steam engine museum

Unusual museums in Franconia



The steam engine museum of in Neuenmarkt-Wirsberg/Germany

For engineering and railway fans this museum is a must. In the middle of Upper Franconia, not far from Bayreuth, you can return to long forgotten times. What many have experienced in their childhood days, but nobody really knows anymore: The last steam engine was put on a storage siding in October 1977.

The age of the "Black giants of the rails" on the German Federal Railways came to an end. And at the same time, this was the date of the founding of the German Steam Engine Museum in Neumarkt. Here, at the foot of Europe's first railway section, the so called "Schiefen Ebene (crooked plain)", the most important and largest museum of its kind in Germany was founded. On the grounds of a train yard, which was wound up in 1975,

more than 30 steam engines can be seen. Together with many other original exhibits from the age of steam engines they give an impressive insight into German railway history.

A particular enjoyment for the whole family is a tour through the museum grounds with a small museum train or a 42 sqm model railway layout in HO scale. With a little luck and if you come at the right time to Neumarkt, you can see and even take a steam engine ride through the "Schiefe Ebene", Germany's first railway section with an altitude difference of 128m and an incline of 1:40. This is a special experience for fans of steam engines.

But there is still something else: on a few days of the year there is an unforgettable event for devotees of railways and good Franconian beer. Under the slogan "From the

railway heaven into the beer paradise" you can travel by a museum train of the German Steam Engine Museum from Neumarkt to the "Bavarian Brewery and Bakery Museum" in Kulmbach, the most famous beer town in Germany. Of course, a journey via the "Schiefe Ebene" is also included in the program. Further information about the museum in Neumarkt and dates and details to several historical train journeys can be found under following link:

www.dampflok-museum.de/cms/

Pictures and texts:

www.dampflok-museum.de,

www.frankenradar.de/galerie-detail/8656

In the next issue of the VIPA Journal you will get more information about the Brewery Museum in Kulmbach!



24 until 2 September 2012: Germanisches Nationalmuseum in Nuremberg



Under the title „The early Dürer“ this exhibition shows the early days of his Art, the early works and the circumstances of the young artist's life.

<http://der-fruehe-duerer.gnm.de>
<http://webmuseen.de/der-fruehe-duerer-nuernberg.html>

Complete year 2012: Jubilee of the cathedral of Bamberg with exhibitions and events



An event in Bamberg goes back in history another 500 years. The imperial cathedral celebrates his **millennial anniversary**.

<http://www.bamberg.info/erlebnis/bistums-stadt/domjubilaeum>

26 April until 7 October 2012 Bavarian Garden Show in Bamberg



Here is the tip for those who prefer nature::
The Bavarian Garden Show in Bamberg 2012

<http://www.bamberg2012.de/web/de/index.php>

Calendar of events

For culture and nature in Franconia