# PROFINEWS PROFIBUS & PROFINET

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# Official Newsletter of

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# NAMUR WELCOMES NEW **PROFIBUS PA PROFILE 3.02**

ITERNATIONA

Representatives of NAMUR Working Group 2.6 'Fieldbus' have welcomed the innovations delivered by the new PROFIBUS PA Profile V3.02, and have given it their full support.

Particularly welcomed are the field device integration measures for simplifying life cycle management. With these measures, PI is taking the lead in satisfying customer requirements.

Field device integration is made simpler by:

> Enhanced support for device replacement even after changeover to a new generation.

> Simplified handling of device integration through engineering files such as GSD, EDD and DTM.

> Optimized assignment of driver files to field device versions over the entire life cycle of field devices

Status and diagnostic information according to categories defined

PROFIsafe

# in NAMUR Recommendation 107 ('Self-Monitoring and Diagnosis of Field Devices') has been available for PROFIBUS PA field devices since 2005. In the new Profile V3.02 this becomes mandatory, ensuring simplified and uniform

representation of data.

Another highlight is the shorter loading and readout times for device parameter sets. This not only allows for faster commissioning and device replacement but also speeds up diagnosis and maintenance.

NAMUR especially welcomed measures for checking compatibility rules during PROFIBUS certification, the user guidelines developed for working with driver files during the equipment life cycle, and the guidelines for device replacement. As a result, Profile V3.02 will contribute significantly to reducing engineering and operating costs as well as helping minimize life cycle costs.

# **RPA TOUR**



In January, representatives of PI, including Chairman Jörg Freitag (center left, pictured at a meeting in Finland), visited four Regional PI Associations on a goodwill tour, to find out more about local activities and improve collaboration. More on PAGE 6.

# **NEW PROFINET** WHITE PAPER

A new White Paper has been published describing how PI's Industrial Ethernet solution PROFINET interfaces with higher level IT networks. Written in terms readily understood by IT professionals, the paper covers in detail the benefits of using **PROFINET** with enterprise networks. DOWNLOAD IT HERE.



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# March 11-12, 2009

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In German and English. All welcome

www.pi-conference.com

**PI Network** 

lichen Glückwunsch! the Produkt words ausgewähl

AWARD FOR WIRELESS

Readers of the German SPS Magazine have chosen PROFIsafe for Wireless Networks to be among their 'Trend100' products for 2008/2009. Products are chosen to be especially innovative or user-friendly, and to represent a trend or even be setting a new trend. PROFIsafe for Wireless Networks is specified in the PROFIsafe profile (Version 2.4). This describes the conditions for the functionally safe transmission of

data via WLAN and Bluetooth. The concept has been approved by BGIA and TÜV. PROFIsafe is the only safety technology covering discrete, process and motion control and is well established. At the end of 2008, PROFIsafe celebrated its 10th anniversary (see REPORT HERE). The PROFIsafe profile is available for members' DOWNLOAD HERE. Or contact info@profibus.com. There's more about PROFIsafe HERE.

# **New Products**

## DATA ACQUISITION AND DISPLAY The

DXAdvanced is a panel-mounted paperless

recorder offering



a customizable integrated display, recording and communication functions. Via PROFIBUS DP it can even act as the central data collector for a system. The increasingly widespread use of PROFIBUS was the motivator for adding networking capability in order to seamlessly integrate the powerful features and benefits of the DXAdvanced into existing automation systems including field devices, PLCs, process/temperature controllers and applications requiring multi-batch functionality or user-created display formats. YOKAGAWA

# **BUS COUPLER** FOR PROFINET IO

Phoenix Contact's FLM BK PN M12 DI8 M12-2TX Fieldline Modular bus coupler with eight digital



inputs can connect a Fieldline Modular local bus station to a PROFINET IO network. The integrated, managed 3-port switch enables linear bus topologies to be set up, and its interfaces can crossover automatically. The bus coupler also supports the SNMP v2c, IO, TFTP, and LLDP protocols. A system redundancy feature is present for process data. Up to 16 I/O devices can be connected. PHOENIX CONTACT

# **PA 'SCOPE**

ProfiTrace is now able to do electrical measurements on DP and PA AND oscilloscope functionality for PROFIBUS PA has been integrated into the existing product. It is thus the ONLY tool in the world that can be deployed across an entire PROFIBUS plant. Now, with one small box, it's possible to work anywhere and be in full control of a PROFIBUS installation. In the past an external oscilloscope

was required as well. "ProfiTrace is without question the PROFIBUS



troubleshooting and maintenance tool to invest in," says Procentec. Most PROFIBUS Competence Centers and Training Centers have standardized on Profitrace and there are hundreds of Certified PROFIBUS Engineers who have extensive ProfiTrace knowledge. PROCENTEC

# FIRST PROFINET **CABLE TESTER**

We don't normally allow two new products from the same company but this one is special! PROCENTEC has



launched the first PROFINET handheld cable tester. It is an essential tool to verify the condition of the PROFINET cable after assembly and installation. says the company and has been especially designed for PROFINET. With just one key-press the test result is displayed and continuously updated. If a cable does not pass the test, the device will clearly indicate what the problem is and which wires/pins are affected. The product does not require special skills. It can even be used on any Ethernet network with 4-wire or 8-wire shielded cables. PROCENTEC

# **IO-LINK TESTER**

itm in Munich, Germany and the TMG Group in Karlsruhe, Germany, have jointly developed the IO-Link Testsystem. It ensures the conformance of IO-Link devices to the IO-Link Specification and the smooth interoperability of devices from different

# **MORE PRODUCTS ON-LINE**

Our ON-LINE PRODUCT GUIDE has over 2500 product entries. Search on keywords, text or profile.

vendors. It's based on the TMG IO-Link Testmaster and the itm Test Framework which is already used for PROFIBUS/PROFINET certification. It automatically executes a test suite and devices which pass this generate a manufacturer's declaration that will be mandatory soon. It additionally supports automatic repetitive tests during the development of IO-Link devices, and can be extended and customized. More from Armin Otterstätter +49 (721) 82806 0 (armin. otterstaetter@tmg-karlsruhe.de) or Benjamin Danzer +49 (89) 289-16435 (danzer@itm.tum.de).

# **DP MODULE**

The AGILiPLUG module now supports PROFIBUS DP-V1 class 1 and class 2 devices. AGILiPLUG allows product



manufacturers to easily turn their equipment into a PROFIBUS DP slave. Modules, parameters, diagnosis, slots/indexes and I&M data are easily customizable to match the requirements of the host equipment. AGILiPLUG communicates with the host equipment through a serial link, and can work as a MODBUS master/ slave or in a transparent mode (tunnelling). AGILICOM

# **REMOTE I/O** ADAPTER

ProSoft Technology has just released this new Allen-Bradley Remote I/O Adapter to PROFIBUS **DPV1** Master



communications module (5604-RIO-PDPMV1). The protocol gateway creates a powerful connection between devices on a Remote I/O network and PROFIBUS slave devices. The gateway is FDT communication DTM compliant, allowing FDT Asset Management users to connect to field devices through Ethernet. This gateway is the ideal solution for applications where A-B Remote I/O connectivity is being used and can easily integrate a PROFIBUS DPV0/V1 slave device into the system. **PROSOFT TECHNOLOGY** 

# Applications

### POLAND / POWER 1: Att

the Turow Power Plant near Bogatynia in south-west Poland PROFIsafe is used for the protection of water level in boiler drums. The aim of a recent modernization program was to create a system that could initiate the emergency shut down of boilers under emergency conditions dependent on water levels, pressure and temperature. The system was realized with a SIMATIC S7-300 with CPU 315F- 2DP and PROFIsafe on PROFIBUS DP.

POLAND / STEEL: ARCELOR

STAL SERWIS Polska sp. z o.o. is located in Bytom, south Poland and its main activity is the precision cutting of steel sheets. During a recent modernization, the old control system was replaced with a decentralized control system based on ET200S modules. Control is achieved with two ET200S stations. One is working as the master DP (IM151-7F CPU + DP master module), and the second as a slave. The F-CPU controls the whole machine with incorporated safety functions which shut down the machine to enable personnel to enter the danger area.

POLAND / POWER 2: A PLC

S7-400H system is controlling and supervising the production of mazout oil at the SKAWINA Power Plant, about 10km southwest of Krakow. Redundant controllers have safety functions and the input/output modules ET 200M. with redundant IM153-2 communication interfaces.



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# Applications

### **NORTH AMERICA / THEATER:**

PROFIBUS is popping up in many non-conventional applications these days, as well as discrete and process control. In Cleveland, Ohio, it forms the backbone for the new stage and scenery control system that was recently installed at the renovated Hanna Theater in the Plavhouse Square region of the city.

In refurbishing the 87-years old theater, the owner envisioned state-of-the-art moving stage platforms and scenery panels. JR Clancy, Inc. of Syracuse, New York, a leader in theatrical stage rigging, was hired to manage the automation. Clancy installed a Siemens PLC for overall supervisory control and servo motor control for the movable scenery. To implement a hydraulic control system for movable stage platforms in the theater, Clancy hired Atlantic Industrial Technologies, Inc. of Islandia, New York, a specialist in fluid power and motion control.

The role of the hydraulic system is to control the height of three movable stage segments that project out into the front seats of the theater (see below). All of the stage sections are independently

controlled and can move at two feet per second! Rated at up to 20,000 pounds load (including the stage itself), each section is raised and lowered by two hydraulic cylinders working in parallel. The hydraulic cylinders are buried in the floor of the pit and the hydraulic power unit is located in the basement behind doors in a soundproof room.

One of the obvious benefits of using a multi-axis electronic motion controller in this application is being able to rely on the controller's ability to synchronize smoothly the

motion of multiple axes. If one axis were to get ahead of the other, or lag behind - even by a small amount the lift mechanism could jam and create problems for the operators.

There are also hidden benefits in

using a motion controller for this application that are directly linked to the safety of the actors and the risk of equipment damage. Without a programmed motion controller, a component failure has the potential to cause a stage to bear the full force of a mis-



commanded hydraulic cylinder. Even a small hose rupture can result in substantial steel quide damage, as the stage becomes 'cocked' if it is not positioned accurately on both sides. If actors (or scenery) are riding the stage during this type of failure, there is potential for serious injury. At the very least, this failure would cause loss of revenue for the owners and embarrassment in the theater community

To manage the system properly and perform the necessary safety checks, the control system



integrator selected the RMC75 twoaxis electrohydraulic motion controller made by Delta Computer Systems, Inc. of Vancouver, Washington (left). Three Delta controllers

were used to handle the six axes of the three stage segments, providing a direct interface with PROFIBUS communication to the PLC.

The motion controller is programmed to perform multiple hydraulic system 'health checks' before every stage move. In addition, it continually checks and compares the position of both sides of a moving stage (reported by positions transducers on each cylinder). If one hydraulic axis (out of the total of six) reports a fault, then the controller stops motion on all six axes of the three stage platforms. The software was thoroughly tested to detect and protect against various failure modes.



The Delta RMC75 also employs digital inputs to monitor other inputs, including the brake sensors, 'filter-dirty' sensors, ball valve sensors and e-stop buttons and reports any faults to the PLC over PROFIBUS.

Analog inputs (on the motion controller) provide a means to monitor the hydraulic pressure of the cylinders. With all of its I/O capability, the Delta controller can be viewed as a general-purpose controller that combines fast, precise closed-loop motion control with additional functionality that would otherwise be performed by a PLC. DELTA COMPUTER SYSTEMS.

### **DO YOU HAVE A CASE STUDY FOR PROFIBUS OR PROFINET?**

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Send to geoff@ggh.co.uk and/ or petra.mayer@profibus.com.



AUSTRALIA / WASTE WATER: The key factor driving investment in wastewater treatment all over the world is cost reduction, and the only way to maintain high standards while reducing costs is to utilize highly sophisticated measurement and process control technology.

The introduction of fieldbus has dramatically boosted the monitoring of instrument status, maintenance and diagnostics. PROFIBUS is now a \$60 billion market and is dominant in a number of sectors of industrial automation. "The demand for high-tech automation in the water sector continues to grow rapidly in Australia and throughout Asia Pacific," says Nick Smith, Manager, Tyco Process Automation Division. The company has been accredited by PI as the first PI Competence Center (PICC) in Australia. "The Tyco Process Automation Competence Center will play a major role in spreading the technology throughout this region," says Smith, who is also PICC Manager.

To date, one of the country's most comprehensive applications of PROFIBUS is at the \$28 million Water Corporation-owned Kwinana Water Reclamation Plant (KWRP). This is one of Australia's largest municipal wastewater reuse plants, and has implemented PROFIBUS DP and PA communications which are integral to the facility's success in improving both water efficiency in the Perth basin, and environmental management in the Kwinana industrial area.

Water Corporation has been



implementing PROFIBUS DP and PA networks for over five years in its water and wastewater treatment plants. PROFIBUS DP and PA will become an integral part of its planned networking of all the metropolitan water treatment plants over the next five years.

The Corporation's Principal Engineer, Electrical, in the Mechanical and Electrical Services Branch, is driving a philosophy to intelligently connect the five largest water treatment plants within a 50km radius of Perth, to enable after-hours operation from the Corporation's Operations Center in Leederville. For this to be deemed successful, an experienced operator in Leederville must be able to perform detailed diagnostics of any instrumentation or control issue, and then decide what action is required. PROFIBUS in the plants makes much of this possible.

Tyco Automation commenced their PROFIBUS training program in January this year with the internationally accredited, certified one-day PROFIBUS Installer course. The next 3.5-day certified PROFIBUS Engineers course covering network design, commissioning and live fault finding is scheduled for March.

Course information and enrolment forms can be obtained from www.profibuscentre.com.au or nhsmith@typac.com.au

### NETHERLANDS / CHEMICALS:

The Dutch chemical corporation Nedmag is the leading supplier of very pure synthetic 'Dead Burned Magnesium Oxide' in Europe. The raw material processed at Nedmag Industries Mining and Manufacturing is extracted from deep inside the earth. To achieve this about half a million tons of magnesium chloride salt are extracted by Nedmag every year.

The installations have evolved into an automation mix of assorted controls, process control systems, remote I/Os and field devices. On top of that, various components use different communication protocols and device integration technologies, making vertical integration a real challenge.

"The big idea was to make all devices accessible from one central point," says Wim Zomer, Head of Technical Automation at Nedmag (pictured right). FDT technology and Yokogawa's FieldMate were chosen as for device management as communication with all devices of all protocols and integration technologies was requested.





Through Trebing & Himstedt's ETHERNET-PROFIBUS-INTERFACE xEPI, Nedmag staff can access FieldMate via an Ethernet network. "The brilliant thing about the concept is that



we can use the infrastructure already existing in each room," says Zomer. "Via secure internet connection, members of the team can even connect and act at night or during weekends from home if necessary."

> In combination with the TH DTM for the ET 200M Siemens Remote I/O. HART over PROFIBUS is available and accessible independently of the system provider. The integrated and central solution at Nedmag saves money throughout the complete plant life cycle and opens up the way to efficient Asset Management. **TREBING +** HIMSTEDT



# PI World

### **JAPAN**

profichip is the latest company to join the Japanese PROFIBUS Organization (JPO). Being a manufacturer of semi-conductors for PROFIBUS communication and PLC technology, profichip is expanding its presence in Japan. The cooperation is aimed at joint fair participation, enhanced contact with Japanese manufacturers of automation technology and end users, as well as participation in joint workshops, Mr. Shinichi Motovoshi. chairman of JPO, welcomed profichip as the 88th member and said he is looking forward to participating in the 'PROFIBUS Day' in 2009.

## **SOUTH EAST ASIA**

The adoption of fieldbuses in manufacturing continues to grow rapidly, especially in the heavy process industries. "Manufacturers are realizing the benefits of PROFIBUS with its ability to address the needs of multiple manufacturing domains by integrating process instrumentation seamlessly." said Volker Schulz, Secretary of **PROFIBUS Association South East** Asia. Today, PROFIBUS technology is the clear market leader worldwide in OPEN fieldbus technology, with over 25 million installed devices. Out of this over 4 75 million devices are used in the process industry." The IWater Exhibition and the OESA Exhibition. both in Singapore, were supported recently. The OSEA booth attracted 888 visitors. Questionnaires showed that PROFIBUS has more than 32% market share. Sponsors included ABB, AUMA Actuators, Avago Technologies Manufacturing (Singapore), Belden, DNR Process Solutions, Endress + Hauser S.E.A., Excel Marco, Festo, Foxboro, Hirschmann, Hollisys SEA, Leoni Kerpen, LappCable, Mettler





Toledo, MTL, Gecma, Pepperl + Fuchs, ProSoft Technology, Turck, TDS Technology, Siemens, Softing, SMAR, Vega, Weidmueller, Wago.

## UK

The PROFIBUS Group will be supporting MTEC at the Birmingham NEC in March where they will be presenting a tutorial entitled "System Design using PROFIBUS and other technologies". This is a taster for a new course that has been developed to address the problem of errors in installation that are traceable to decisions taken at the early stages of a project. Other regular UK courses continue unabated. There's a Certified PROFIBUS Engineer course in March (Register at admin@uk.profibus.com) and an upcoming seminar on PROFIBUS in the Process Industries, to be hosted in Daresbury, Warrington by ABB. PROFIBUS UK is also helping companies beat the economic downturn by offering FREE Admission to its PROFIBUS & PROFINET Conference on June 16/17 2009. A limited number of day delegate places are available so it's 'firstcome, first-served'. The usual £100 mandatory membership fee is also being waived! WWW.PROFI-BUS.CO.UK.

# USA

PTO in cooperation with the PROFI Interface Center has scheduled 25 one-day training classes throughout North America in 2009. A schedule overview is **HERE**. Twelve PROFItech Certified Network Engineer classes are also on the 2009 **SCHEDULE**.

Do you have news, success stories or other items to report from your RPA? Then why not submit them for free inclusion here?

Email: profinews@profibus.com



### POLAND

The first 'Meet the Experts' conference to be organized in Poland took place in December, in Gliwice. The meeting, called 'Networks in Process Automation', was opened by RPA Poland Chairman Mr. Darius Germanek who presented the current status and activities of the Polish PROFIBUS Association. Afterwards Mr. Juergen George representing PI described the structure of the international PI organization and the activities of the Advisory Board. After the official presentations there was a formal presentation from the PICC (PI Competence Center) Poland about process networks based on PROFIBUS PA and then RPA members had the chance to present their own PROFIBUS PA products and solutions. The conference attracted more than 30 participants from different companies, especially from Southern Poland. **MORE HERE** (go to the 'Meet the Experts 2008 Poland' page.)



# **BRAZIL 1**

During December, Brazil Latin America **Regional PROFIBUS Association** members met to plan their 2009 activities. The meeting was held at the University of Sao Paulo in Sao Carlos city. During the meeting Cesar Cassiolato, the President of RPA, and Silas Anchieta, the Executive Director of RPA, proposed actions related to events, fairs, seminaries, user cases and special activities related to the proposed PICC (PI Competence Center). He said: "Our main aim during the year is to keep membership growing among the universities, students, system integrators and manufacturers, and to make PROFIBUS the best known fieldbus communication technology on the Brazilian market and in Latin America. We will celebrate 20 years of PROFIBUS too, with a 'super event'!" He added that the official certification of the Brazilian PICC in February 2009 would be another challenge, besides the development of a PI Training Center as well. "The Brazilian market has seen a significant increase in PROFIBUS use and a PROFIBUS Training Center here

will allow us to qualify professionals and maintain the quality of services offered," said Cassiolato.

# **BRAZIL 2**

The Latin America PROFIBUS Association has also announced PROFIBUS training courses to be delivered by Andy Verwer of Manchester Metropolitan University, UK. Prior attendance at the Certified PROFIBUS Installer Course is required for the PROFIBUS Commissioning and Maintenance Course. The latter covers practical techniques of fault finding on 'operational' PROFIBUS networks. Students have a notebook computer with hardware and software for PROFIBUS device exercising and fault finding. Techniques taught include the use of a modern PROFIBUS analyser and Class-11 master (engineering tool) to diagnose network faults, device faults and I/O problems. Participants also learn how to use a digital storage oscilloscope to diagnose and locate cable, connection and device faults. BROWSE HERE.



# PI'S '2009 WORLD TOUR' BEGINS!

2009 started for PI with a series of meetings in Europe. Jörg Freitag, PI Chairman, together with Volker Erbe, Marketing Director of PNO, and Petra Mayer, PI Support Center, met with representatives from RPAs (Regional PI Associations) in the Czech Republic, France, Finland and Denmark. Goal of the meetings was to find out more about local activities and to investigate areas of fresh cooperation.

During the first meeting in Prague, Jörg Freitag, PI Chairman told the RPA: "This meeting is a great opportunity to get a better feeling for the situation in your country. What we see here makes a very good impression. PROFIBUS is very well accepted in the Czech automation market and we see the same opportunity for PROFINET. The RPA has excellent technical expertise. From the PI side we see that we can provide more marketing support to the RPA so that a fuller range of benefits can be offered to members."

The Czech RPA involves a variety of companies including manufacturers, integrators and universities. It was founded in 1998 and has recently been looking for new opportunities especially concerning marketing activities, trainings and presentations.



Czech Republic. From left to right: Ondrej Dolejs, WAGO Elektro Joseph Vopicka, ANF Data Pavel Burget, RPA Czech Republic Volker Erbe, PISC; Jörg Freitag, PI Chairman; Zdenek Hanzalek, RPA Chairman; Petra Mayer, PISC

Zdenek Hanzalek (RPA Chairman) said: "Based on the great acceptance of PROFIBUS in the Czech Republic we want to support the companies which deal with this technology and help them get as much as possible from its excellent qualities. We also feel there is a need to provide better information about PROFINET in order for it to become as well known and accepted as PROFIBUS has become in the Czech automation market."

Finland. Left side, starting in front: Petra Mayer, PISC, Jörg Freitag, PI Chairman, Volker Erbe, PISC. Right side, starting in front: Jari Alatalo, Phoenix Contact, Gert-Jan Nijmolen, ABB, Taisto Kaijanen, RPA Main Contact, AEL Training Company, Tero Pyykkö, RPA Chairman.





20 Years Competence in Technology 20 Years Know-How 20 Years Practical Experience 20 Years Trendsetter 20 Years User-Oriented Development 20 Years the World's largest Fieldbus Community

The 25 RPAs making up the world's largest fieldbus community will be celebrating the 20th anniversary of PROFIBUS in many different ways in 2009. A special PI logo (shown above) will be used throughout the year. There are special events like the International **'EXCELLENCE IN AUTOMATION CONFERENCE'** in Karlsruhe, Germany, being held in March. There's also the **UK CONFERENCE** in June and the 'PROFIBUS Day 2009' in Japan in July. RPAs will attend fairs such as the PEA09 exhibition, and there will be a 'PROFIBUS Day' in Norway in October plus a gala evening event in Southern Africa. We will announce details as we get more news. Keep on reading PROFINEWS! **SUBSCRIBE HERE** 

Next stops were Paris, Helsinki and Copenhagen, where different projects were agreed in order to build cooperation between the RPAs and PI.

The support provided in each country is slightly different and tailored to meet local requirements. The strengths of the French RPA are its close cooperation with the PICC, as well as an excellent marketing group. Their newest



publication is the French version of the PI Image Brochure (see picture above).

Activities in Finland (see picture left) focus mainly on the big automation fairs, where the RPA is represented with its own booth.

The Danish RPA allows every member to have its own demo-board at the Danish technical training center (TEC) in Copenhagen. There is a special training room with a permanent presentation of the demo-boards, which are transportable so that they can be used at exhibitions and other events. Michael Nielsen, Chairman of the Danish RPA,



Denmark. From left to right: Ole Krogshede, Max Fodgaard, Jacob Hagen, RPA Main Contact, Michael Nielsen, Siemens, Jörg Freitag, Pl Chairman

explained that the training, especially of young engineers, is one of the most important topics in Denmark.

More information about the RPAs, their activities and members can be found on their websites here: CZECH REPUBLIC; FRANCE; FINLAND; DENMARK

# PI Network

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