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## FOR PROFIBUS - A HIGHLY SUCCESSFUL YEAR FOR PROFINET - A YEAR OF CONSOLIDATION



PROFIBUS and PROFINET.

Market research confirmed the leading position of PROFIBUS: 88% of the respondents to ARC's fieldbus market survey said that tightly integrated automation networks (like PROFIBUS) are the priority in process.

ARC described PROFINET as 'all-encompassing', with major benefits including IT connectivity, investment protection, safety and drives technology, graphical configuration and engineering and advanced motion control.

A huge number of activities promoted PROFIBUS and PROFINET during 2005, among them press conferences and roadshows, many of them led by PI Chairman Edgar Küster (pictured center page at the recent SPS/IPC/Drives event in Nuremberg, Germany). Other



2005 was another successful year for

events include a major Conference in the UK, the Swiss Industrial Networks Day

(formerly Swiss PROFIBUS Day), seminars on all continents, innumerable training courses and, of course, fair booths. Most of this work is undertaken by the largest and

most comprehensive fieldbus support network in the world, including 24 Regional Associations. Technical support is provided by 32 PI Competence Centers and 8 PI Test Laboratories.

In 2005, the PROFIdrive and PROFIsafe profiles were both revised for use with PROFINET, making it even more powerful and a rich new opportunity for PROFIBUS members everywhere.

After more than 15 years, PROFIBUS continues to grow in popularity and is certainly the most successful fieldbus the world has ever seen. 100 new companies joined PI in 2005, increasing the total to more than 1,300. PI is now the largest interest group in the world for industrial communications and automation.



### 2005 NUMBERS EXPECTED TO TOP 15 MILLION

Early indications, based on chip sales, are that the number of installed PROFIBUS nodes has risen above 15 million. PA

installations have also risen substantially above 500,000. The final numbers will be confirmed in our next issue.

## Certifications

### PROFINET DRIVE

SEW-EURODRIVE has become one of the first drives manufacturers to receive PROFINET certification. The DFE12B option card for MOVIDRIVE B drive inverters is now certified for PROFINET IO applications.



The MOVIDRIVE B drive inverter can be integrated with up to ten process data streams into a PROFINET network, which means it can be integrated both horizontally and vertically. Simple diagnostics via a web browser are another advantage. **SEW-EURODRIVE: [www.sew-eurodrive.de](http://www.sew-eurodrive.de) or +49 7251 75-2525 or [stefan.brill@sew-eurodrive.de](mailto:stefan.brill@sew-eurodrive.de)**

### PROFINET PLC

The Siemens Simatic ET200S has received PROFINET



IO certification. It has an integrated 2 port switch and two variants - a basic version with classic ET200 services and one for PROFIsafe applications. Various I/O options are available. Our picture shows Joachim Lorenz, Rita Mueller and Werner Goetz of Siemens with Peter Wenzel of PI at the presentation of the certificate.



## PI News

### NEW WEBSITE

This is the first PROFINEWS issue in a new layout. It follows the new layout of the PI Website at [www.profibus.com](http://www.profibus.com) and [www.profinet.com](http://www.profinet.com).

But the PI Website offers more than a new layout: A complete re-launch has been undertaken, restructuring and re-working over 10,000 pages. One objective was to offer visitors a better browsing experience, supported by a separation of technologies by color into PROFIBUS (blue) and PROFINET (green) segments, as well as one for the PI organization (silver).

Since its launch in 2000, the PI website has become an important platform for industrial automation. It provides information for the whole community: members, RPAs,



PICCs and PITLs from all over the world use it to explain their activities and news. Here's a short overview of what's available (but please don't hesitate to simply visit to gain a real impression!)

- technical information
- contact platform (addresses of manufacturers, PI representatives, RPAs, PI Competence Centers, PI Test Labs, technical experts, working group chairmen)
- downloads (specifications, guidelines, profiles, brochures, forms, GSD-files, etc.)
- product guide (including GSD-files) with a comfortable search function

- training dates and Web based training
- news on exhibitions, trends
- press releases
- forums

Finally, for those who publish information on the site, the new Content Management System enables easier updates, so that the website can always reflect the latest information.

### ONLINE FORUMS

Forums are one of the most valuable resources at [www.profibus.com](http://www.profibus.com) and [www.profinet.com](http://www.profinet.com). Any kind of question about PROFIBUS or PROFINET will be answered by experts. It's free and open to everybody! There's a mass of useful answers already. Somewhere may be just the one you need. Take a look. If it's not there, simply ask a new question. Remember, there's no such thing as a silly question in automation!

### AN INVITATION TO PROFINET DEVELOPERS

PNO Germany invites you to the next PROFINET Developers workshop in Essen, Germany, on April 6th 2006. This workshop will be in the German language. Details and agenda from [germany@profibus.com](mailto:germany@profibus.com)



### NEC SECOND SOURCES ERTEC CHIPS

Semiconductor giant NEC has announced that it will start selling the ERTEC switch chips needed for PROFINET IRT applications.

ERTEC chips are designed to support the critical isochronous realtime capability for advanced Motion Control. ERTEC 400, a four port version for controllers, is available now. ERTEC 200, a two port version for field devices, is expected in Q2 2006. The ERTEC chips include a powerful ARM9 processor and support data transmission rates up to 100 megabits per second. As well as IRT, they enable the line cabling typically used with fieldbuses to be implemented in Ethernet networks. Real-time communication allows control of up to 150 axes at a cycle time of 1 millisecond, with 6 megabytes per second of simultaneously transferable standard TCP/IP data.

Development kits will also be available from NEC.

### AIDA SAFETY WORKSHOP FOR DEVELOPERS

At the suggestion of the AIDA group of automotive manufacturers in Germany, PNO in February hosted a special Developers Workshop for functional safety based on both PROFIBUS DP and PROFINET IO.

26 participants from major suppliers of functional safety products attended the workshop, which covered the entire spectrum of PROFIBUS and PROFINET safety technologies. 15 presentations, ranging from the importance of Standards such as IEC 61508 through to the certification of finished products kept delegates busy through a long day of learning.

Speaking at the event were PNO Working Group chairmen and

members. Also speaking were representatives from AIDA, EXIDA and TÜV Rheinland.

The aim was to encourage the development of functional safety products to meet the demand of automotive manufacturers.

AIDA, comprising Audi, BMW, DaimlerChrysler and Volkswagen, have committed to PROFINET as their preferred Ethernet protocol, with the aim of reducing the number of platforms down to a single solution.







## China Feature

First PROFIBUS products are starting to emerge from Chinese developers and OEMs. Here is one of them:

### FIRST CHINESE PROFIBUS PA INSTRUMENT



Chongqing Sichuan Instrument Co. Ltd.(SIC), located in Chongqing is the largest automation instrument manufacturer and a well known system integrator. In 2005, sales were 200 million USD, 20% up on the previous year. SIC has just completed a year-long successful cooperation with the TMG Company in Germany for the development of a PA electromagnetic flowmeter, which passed the ITM LAB test of German Munich Technical University on December 9, 2005.

PI issued the certificate on December 14, 2005. Thus, SIC becomes the first instrument manufacturer in China with a self-developed product conforming to the PROFIBUS PA international standard. SIC plans to use this advanced technology for more intelligent transmitters and control valves.

### PROFIBUS PA JUNCTION BOX

Pepperl+Fuchs in China is offering PROFIBUS PA customers the chance to improve the availability of PROFIBUS PA segments by using Junction Boxes



with spur short circuit protection. End-users Mu Dan Jiang Paper Industry Ltd in Hailongjiang province of North-East China have enjoyed the benefits of this feature for their latest production line. They can troubleshoot the short circuit problem immediately and easily, even in the control room before going to site. Pepperl+Fuchs offers the Junction Box with an standard IP67 enclosure, or as a DIN rail mounting termination block for 'Chicken Foot' connections.

**Pepperl+Fuchs: +86 21 63542910 or pflishao@sh163.net**

### PROFINET IO COUPLER

The PROFINET IO bus coupler is an addition to the modular WAGO I/O SYSTEM. Using the bus coupler, a large number of single or multi-pole modules can be connected to different digital, analogue or special functions. A version of the bus coupler is programmable according to IEC 61131-3 and can therefore be used as decentralized intelligence for preprocessing. The real time protocol, which is implemented on both bus couplers, enables real time processing of process data.

**www.wago.com**

### PROFIBUS DEVELOPMENT TRAINING IN BEIJING

In January 2006, the China Association for Mechatronics Technology & Application (CAMETA), the China PROFIBUS User Organization (CPO), the Chinese PROFIBUS Competence Center (CPCC) and PROFIBUS Center Netherlands (PROCENEC) organized 'PROFIBUS Product Development' training in Beijing-China.

The training was opened by secretary-general Mrs. Wangjun of CAMETA and CPO Chairman Li Baihuang. General Manager Mr. Tang Jiyang of CPCC hosted the training.

Technical specialists, Mr. Dennis van Booma and Mr. Paulo Silva from PROCENEC, gave a comprehensive presentation about the development of PROFIBUS DP, DP-V1 and PA products for 27 Chinese technology engineers. The protocol ASICs, software



stacks, schematics, GSD files and the certification process were thoroughly explained.

Companies taking part in the training included national



instrument companies, electric power companies, automation device companies, universities and joint-stock enterprises. At the end of the training, CPO Chairman Mr. Li Baihuang awarded the participants a certificate signed by PROCENEC. PROCENEC and CAMETA intend to continue collaborating. **china@profibus.com**

## Applications

**SOUTH AFRICA/BREWING:** Elpro wireless PROFIBUS devices have helped SABMiller to create a less costly method of piping water and product around a brewing plant. Six trolleys fitted with valves and pumps have been chosen to pump water and beer between tanks rather than install fixed piping. Since getting wired communications to a mobile unit like a trolley would be impossible, and the environment is also very wet (and cables could be damaged easily) the company

decided to use wireless comms. A PROFIBUS slave is used to interface with the PLC which controls the whole brewery. Each trolley is fitted with a combination of Elpro's 105-1 and 105-4 wireless I/O modules which are wired to a variety of valves, pumps and sensors. Information on levels, flows etc are sent wirelessly to the control room so up to date information is known and control decisions can be taken more easily.

**Automation and Telemetry: + 21 762 8995 or willemk@unitemp.com**

## New Products

### CPU

The CPU 319-3 PN/DP from Siemens is fast and has PROFIBUS and PROFINET



interfaces. It's particularly suited to data intensive tasks and closed loop control requiring extremely short cycle times. The PROFINET Interface maintains up to 32 simultaneous active Industrial Ethernet connections and up to 256 field devices can be connected via PROFINET IO. The integrated ERTEC 400 chip ensures short response times. **Siemens:** [www.siemens.de/s7-300](http://www.siemens.de/s7-300)

### POWER HUB

The fieldConnex power hub from Pepperl+Fuchs now has



PROFIBUS connectivity. It features redundancy of both Gateway and Power Modules and delivers up to 30V and 500 mA without galvanic isolation. Gateways allow all PROFIBUS PA field devices to appear like native DP slaves. Four PA masters, one per segment, transmit data efficiently. Advanced diagnostics allow in-depth remote supervision. **Pepperl+Fuchs:** +49 621 776 1601 or [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com) or [ahennecke@de.pepperl-fuchs.com](mailto:ahennecke@de.pepperl-fuchs.com)

### QUANTUM CONNECTIVITY

ProSoft's new PROFIBUS DPV1 Master Module is backplane-compatible with the Quantum and Unity processors, offering an easy way to deploy PROFIBUS slaves in a Schneider system. It allows slave messaging, diagnostics/alarm handling and notification,



and uses backplane transfer to control the mapping of data. Up to 6 modules can be placed in a single rack. **Prosoft Technology:** +1 661-716-5100 or [prosoft@prosoft-technology.com](mailto:prosoft@prosoft-technology.com) or [www.prosoft-technology.com](http://www.prosoft-technology.com)

### REDUNDANCY SWITCH

The PRS, PROFIBUS DP Redundancy Switch allows implementation of redundant DP Master



systems. It's a 24 Volt rail mounted module for the connection of two DP Masters as input and one PROFIBUS network connected to the DP Slaves as output. PRS automatically detects the state of the two DP Masters. In case of failure it switches the PROFIBUS line over to the redundant Master within milliseconds. PRS works with all PROFIBUS DP Masters and allows the simple upgrade of an existing plant. It also allows the realization of very complex redundancy systems, i.e. in connection with OPC servers or overlying Ethernet based cell networks. **COMSOFT:** +49 (0)721/9497-0 or [silke.kuchler@comsoft.de](mailto:silke.kuchler@comsoft.de)

### MODULAR MONITOR

To keep pace with the increasing complexity and variety of today's fieldbus



systems, the PROFIBUS Diagnosis Monitor from itm now has more and more features. The monitor has also been split into modules so that a customer can get a monitor tailored for personal requirements and for a fraction of the cost **itm:** [www.diagnose-monitor.de](http://www.diagnose-monitor.de)

### PNEUMATICS

Burkert have extended their range of Airline valve islands to include



compatibility with Phoenix Contact, GE Fanuc, Bosch Rexroth and Hitachi IO backplanes. The Company claims it is unique in being able to interface with 8 different IO systems, thus making it simpler and less expensive to design and engineer pneumatic systems. **Burkert:** +44 1453 731353

## PI World

### SOUTH AMERICA

In November 2005, the South America Regional PROFIBUS Association, the PROFIBUS User Group that represents PROFIBUS in South America - promoted a special event alongside ISA South America called 'Case Study Seminar'. More than 100 delegates attended. Since its foundation, the Brazilian Board have been improving support to existing and potential users and will now be offering membership to universities, students, system integrators and other persons related to control automation. The main idea is to broadcast the 'professionalism' of this association and to ensure PROFIBUS technology becomes better understood in the Brazilian automation market. Since 2000, the RPA has organized seminars, workshops and training for end users. During the seminars, PROFIBUS technology is shown in a neutral way and the main focus is technical and not commercial. Up to now, more than 1800 persons have attended these seminars. Another relevant activity is a major presence at trade fairs, where the Association participates with a booth and vendor members show the 'Interoperability

Laboratory' concept using demo kits. The vendors accept the challenge of demonstrating live 'interoperability' to visitors. Each visitor can choose a combination of products to validate the claim. The challenge always goes down well with visitors! **Cesar Cassiolato:** [cesacass@smar.com.br](mailto:cesacass@smar.com.br)

### NORTH AMERICA



The 2006 series of over 30 FREE seminars and workshops was kicked off recently with a visit to Detroit, where over 80 people attended what PTO Executive Director Mike Bryant described as "a real fine start to our 2006 training programme". A new web site has just gone live at [www.us.profibus.com](http://www.us.profibus.com), focussed on North American PROFIBUS and PROFINET activities. You can find out what courses are taking place, and in which cities, and register online too. Register there also to receive regular copies of the PTO email newsletter. **usa@profibus.com**

### OPTO-COUPLER

Avago has announced a multi-channel opto-coupler called ACSL-6410. It comes with three uni-directional channels and one bi-directional channel. Patented stacked technology has made different configurations possible.

Two other options - ACSL 6210 (dual channels with one bi-directional) and ACSL 6400 (quad channels with 4 uni-directional) are also available. Further options are planned. Up to 15 MBd is possible. **Avago Technologies:** [www.avagotech.com/optocouplers](http://www.avagotech.com/optocouplers)

### CERTIFIED DTM

Softing's new 2.0 version of the PROFIdtm has been certified by the FDT Group. Featuring automatic topology generation, PROFIdtm creates a complete live list. By selecting a device the user can display device data such as the hardware and software versions, serial number, or manufacturer-specific properties. Physical addresses of a device can be changed directly. Besides parameterization and diagnostics, PROFIdtm also provides access to

HART devices via remote I/O. The 2.0 version can also be used with PROFIfusb, Softing's new PROFIBUS



USB interface. PROFIdtm with PROFIfusb is particularly well suited for mobile parameterization and maintenance. **Softing:** +49 89-45656-340 or [www.softing.com](http://www.softing.com)





## PI World



### SOUTH EAST ASIA

The PROFIBUS stand at the CIA 2005 Exhibition in November showed the latest PROFIBUS products and a 'live' demonstration of PROFIBUS & PROFINET. Sponsors included ABB, Endress+Hauser, Festo, Hirschmann Asia, Lapp Kabel, Kerpen Asia, Mettler Toledo, MTL Asia, Pepperl+Fuchs, Siemens, SMAR Singapore, Softing and Weidmueller. Over 500 visitors were entertained, including Dr Yaacob Ibrahim, Minister for the Environment and Water Resources, Mr Stephen Tan CEO of Singapore Exhibition Services, Mr Kang Tian Jian President of the Instrumentation and Control Society and Mr Edwin Khew, President of Singapore Association for Environmental, Occupational Health & Safety Companies. The adoption of fieldbuses continues to grow, especially in the heavy process industries, says Volker Schulz, Secretary, PROFIBUS Association South East Asia. [southeastasia@profibus.com](mailto:southeastasia@profibus.com)

### JAPAN

JPO reports they have translated the technical document 'Cable and Assembly' into Japanese. It's available from the JPO web site here. JPO says that this will help users, engineering companies and vendors a lot because the number of PROFIBUS products is increasing in Japan. The translation was supported by Wago Japan, K MECS, Woodhead Japan, Siemens K.K., M-Systems and HMS. The forthcoming 'guide' book is also to be translated. [japan@profibus.com](mailto:japan@profibus.com)



### SWITZERLAND

PROFIBUS Switzerland continued its successful series of Swiss PROFIBUS Day on November 15, 2005 with a **Swiss Industrial Networks Day**. All active Switzerland Fieldbus Consortia were present with lectures, and exposed their products and services. The response was very positive and attracted more than 180 participants, over one third of which were new. PROFINET, PROFIBUS, PROFIsafe, PA were covered together with the corresponding solutions of other consortia. This was the first time



that a comparison of important network solutions was made. In all cases PROFIBUS could demonstrate it had technological solutions in the field. [switzerland@profibus.com](mailto:switzerland@profibus.com)

### NETHERLANDS

Because of the growth in international operations, the PROFIBUS Center Netherlands has changed its name to PROCENTEC. All other details remain the same. PROCENTEC has recently been involved in training Chinese development engineers - see Page 3. [www.procentec.com](http://www.procentec.com) or [dbooma@procentec.com](mailto:dbooma@procentec.com).

## PROFINEWS GOES AROUND THE WORLD

PROFINEWS, the international newsletter of PI, is published 6 times per year to inform vendors and users about the world of PROFIBUS automation. The international version of PROFINEWS is accompanied by local versions in Brazil, China, the USA and other countries. For more information about PROFINEWS, including how to get on the circulation list, go to [www.profibus.com](http://www.profibus.com)

### UK



PROFIBUS UK has issued a second call for papers for its PROFIBUS Conference in June at Coombe Abbey (pictured). Now in its third year, the Conference fills an important need for everyone concerned with industrial networking and process control. Papers dealing with aspects such as cabling, hazardous area operations and similar are welcome. Latest technology presentations and case studies illustrating the use of PROFIBUS in real applications are also being sought. Working titles and abstracts should be sent to the Papers Committee at [uk@profibus.com](mailto:uk@profibus.com)



### IRELAND

PROFIBUS Ireland has launched a new web site, giving more visibility to the organization and providing a valuable resource for training, research, sales and support activities. 2005 was the first year of operation of PROFIBUS Ireland. A variety of certified and non-certified courses were offered through the Competency Center based at the Automation Research Center, University of Limerick. Around a dozen courses were delivered in Dublin, Cork, Limerick and Drogheda on Certified Engineers, Installers and maintenance. Site visits and promotional visits were also conducted. All training courses are part funded by the Competency Development Program of FAS, the Irish Training and employment Authority. New dates are being set for 2006 now. In cooperation with Enterprise Ireland, an Irish Automation seminar was held in September. Presentations from this seminar can be found here. Limerick University also carries out research on diagnostics tools for PROFIBUS networks and markets hand held test tools such as NETTEST II and PROFITrace. [www.profibus.ie](http://www.profibus.ie)

## PI Network

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