



The advanced Industrial Ethernet solution for automation, motion control and IT integration

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FREE TRAINING COURSES

PLANNED FOR 2006: If you've ever pondered the following questions then our 2006 Training Courses are exactly what you need:

- Why should I use a fieldbus?
- Can someone compare the available fieldbuses for me?
- How should I choose one over another?



The PTO and the PIC are providing free one-day training classes to answer these and many other questions. Advanced aspects of PROFIBUS are covered as well. The current schedule includes 25 cities. [More here](#)

PROFITECH CLASSES EXTENDED: The Profi Interface Center and the PTO have added two classes for 2006 - a PROFIBUS Installer's Class and a PROFINET Certified Network Engineering Class. There are now four courses available: [More here](#). There's also a new logo - shown above.



DEBUNKING THE MYTHS

New for 2006! We take a closer look at some myths surrounding PROFIBUS ... and expose the perpetrators!

MYTH 1: *PROFIBUS is actually four separate protocols ... and in addition there are a number of totally proprietary protocols ... (www.pacontrol.com)*

RESPONSE: This is an old-fashioned view, and COMPLETELY WRONG! For a start PROFIBUS is an open standard defined by IEC61158 and EN50295. There is one PROFIBUS protocol, though with two implementations - one for discrete automation and one for process. They are tightly integrated and they have to differ because of the physical needs of process automation. No other fieldbus can do both jobs on a single network!

MYTH 2: *... Extensions to the PROFIBUS architecture in recent years are intended to extend the market of PROFIBUS to process automation. (www.pacontrol.com)*

RESPONSE: So out of date it's cringe-worthy! There are about 500,000 PROFIBUS PA devices deployed in process automation

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Is it wireless?



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print and web versions

THE online INDUSTRIAL ETHERNET BOOK

[YOUR AD HERE](#)

ARC DESCRIBES PROFINET AS 'ALL-ENCOMPASSING': Market analyst ARC has published a white paper on PROFINET. In it PROFINET is described as an 'all encompassing' solution for Industrial Ethernet that protects existing investments, incorporates safety and drives technology, provides a graphical way to configure and engineer systems and opens the door to high performance motion control. Five PROFINET case studies are included, from industries as diverse as tobacco, automotive, horticulture, waste water and filling machines. This report is required reading for all automation engineers. [Read it here](#)

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AUSTRALIA'S LARGEST WATER/WASTE PLANT USES PROFIBUS:

Western Australia's (WA's) new \$28 million Kwinana water reclamation plant - Australia's largest municipal wastewater reuse facility - houses the country's most comprehensive application of PROFIBUS DP and PA.



The Water Corporation, which owns and operates the Kwinana plant, south of Perth, commenced its implementation of PROFIBUS DP and PA networks over four years ago. Over the next five years, the corporation plans to extend this coverage to its five largest water treatment plants (within a 50 kilometre radius of Perth), with a centralised operations room at Leederville. Coverage will then be extended state-wide.

WA's numerous water treatment plants, including over 980 pumping stations, are spread across some 2.5 million square kilometres. The Kwinana project was awarded to John Holland Engineering, with water and wastewater engineering company Veolia undertaking process design and plant commissioning. PCT Engineers provided the electricals and instrumentation. Maintenance is handled by KBR Water Services, the corporation's maintenance provider.

"We chose PROFIBUS to enable us to optimise management decisions," said Dennis Yovich, principal engineer of KBR's electrical, mechanical and electrical services branch. The Kwinana facility, which was commissioned late last year, treats 24 million litres per day of secondary treated wastewater from the nearby Woodman Point wastewater treatment plant. Its daily output of 17 million litres of high-quality (350 mg/L TDS average) industry-grade water is sold to industrial customers in Kwinana.

today and PROFIBUS roughly shares the market with one other technology. Moreover, if the discrete automation devices are added, PROFIBUS is 3-4 times larger in process than anyone else!

Endress+Hauser Australia was selected as the preferred supplier of process instrumentation. Over 150 devices, including Promag electromagnetic flow meters, t-mass gas mass flow meters, Prowirl vortex flow meters, Cerabar pressure transmitters, conductivity, pH and turbidity systems, as well as level switches and ultrasonic level monitors, were linked up on PROFIBUS PA segments in the microfiltration feed system, CMF-S trains (Continuous Micro Filtration-Submerged), RO feed systems and RO CIP systems.

E+H was involved in designing the PROFIBUS topology, accommodating the PROFIBUS PA segments that connect the instrumentation to the plant's automation system. Related activities included system integration planning and realisation in the precommissioning phase, and complete application commissioning for all plant instrumentation.



E+H FieldCare is used as the plant's asset management system, coupling the instrumentation fieldbus to a single workstation PC-based tool. Used in conjunction with E+H Fieldgate, operators are able to perform detailed troubleshooting of each measuring instrument from any Internet-linked site in WA.

"The future-proofing of the Kwinana plant using PROFIBUS technology, in conjunction with FieldCare and FDT/DTP tools, will bring us close to our centralised ops room vision," said Yovich. "The integration of digital I/O utilising AS-Interface in the PROFIBUS world - such as alarms, chlorine gas leaks, chlorine residual, low level alarms and empty pipe detection - is exceptional," he noted. "We use AS-Interface combined with PROFIBUS PA, making all analogue measurement - such as flow, temperature, pressure and level - and digital switching totally homogeneous."

Article reproduced courtesy of [Process & Control Engineering](#)

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SAFETY STANDARDS BEGIN TO HARMONIZE: Europe and the U.S. maintain distinct machine safety standards but confluence has begun. A comprehensive article explaining how and why has been written by John D'Silva. It's a valuable reference if you want to stay close to this subject. [Read the full article](#)

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KARSTEN JOINS PIC: Karsten Schneider recently took the helm as leader of the PIC (see below). Karsten's responsibilities include overall management of the team and support of any PROFIBUS or PROFINET related topics. His educational background includes a diploma in Electrical Engineering from the University of Erlangen-Nuremberg, with a focus on data communications. Karsten comes to us via the marketing team for Siemens ET 200 IO and PROFINET product families and worked with Siemens for 8 years in various groups supporting automation products and software. Before that he worked for University of Erlangen-Nuremberg and Fraunhofer Gesellschaft in Erlangen coding multimedia communications software over telecommunication systems.

More about the PIC: PROFIBUS International has established a worldwide network of PROFIBUS International Competence Centers (PICCs). PICCs are centers of technical PROFIBUS and/or PROFINET expertise in the related country. The Know-How of the PICCs is ensured by a "Quality of Services" Agreement and qualified Expert Reports on the PICCs. Thirty two PICCs are established worldwide today. PROFIBUS Certification Tests in accordance with the related PROFIBUS Test Specifications are executed in authorized PROFIBUS Test Laboratories. Meanwhile, 7 Test Laboratories world-wide are authorized to execute these tests. In North America the PICC is the PIC (PROFI Interface Center). The PROFI Interface Center (PIC) was established in Johnson City, TN, in 1995 as the PROFIBUS Interface Center. Now the PIC provides the same services for PROFINET. The PIC is a PROFIBUS and PROFINET Test Lab and Competence Center. The PIC works closely with the PTO and serves as the technical resource. The PIC provides the North American market place with many services including seminars, integration and development support, and device conformance testing. Competencies include PROFIBUS DP, PROFIBUS PA, PROFIsafe, and PROFINET.



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PTO HOSTS KEY INTERNATIONAL MEETING: The PTO will host the annual international meeting of PROFIBUS International (PI) during 2006. The meeting will be held in California in June. This annual gathering brings together the 25 Regional PROFIBUS Associations (RPAs) from around the globe, to discuss items of mutual interest and exchange information. The PTO General Assembly Meeting is scheduled for August. This annual event will begin August 1 with an evening welcome reception and run through August 3.

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PROFIBUS AND PROFINET FORUMS : A useful resource that's not widely publicized is the Forum page at www.profibus.com It is a big and growing knowledge bank where any kind of question about PROFIBUS or PROFINET will be answered by experts. It covers subjects ranging from stub lengths to Ex zones and may just be what you need.

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WHY USE A FIELDBUS? For those of us who have spent the last 20 years promoting the use of digital communications (fieldbus) in the process industries it comes as a surprise to find that barely 15% of users have made the transition. OK, HART is responsible for some of that, (though HART is not a fieldbus and does not provide the same wiring and other savings) but nevertheless we might have expected a bit more progress.

Does it mean we have failed? No! It's partly because the process industries are reluctant to take too many steps into the future too quickly - and there are many good reasons for that. It's also due to many plants having a life cycle of decades, so there's limited opportunity for change. Nor has the economic situation been very favourable.

But there are many positives, as the new end user adoption survey from Boston-based analysts ARC clearly demonstrates. More people than ever are turning to fieldbus to support new projects they conclude. Their report compared the results of a similar survey 2 years ago with responses to similar questions today. "one of the primary points that emerged," they say "was the increased acceptance of process fieldbus technologies among major end user companies. Fieldbus is being deployed in more and more large plant and critical applications." So fieldbus is finally on the agenda big time.

More than 220 global end users responded to the survey and a much wider industry spectrum was covered this time, with an obvious change being that fieldbus is no longer limited to the high end petrochemical and refining industries. This is because fieldbuses offer a good value proposition for the 'hybrid' industries like food&beverage, and pharmaceuticals too. Tight integration of process and discrete applications is what PROFIBUS does better than anyone and the benefits across the board - in design, engineering, commissioning and whole life costs - can be dramatic, as evidenced by another ARC report completed in 2005. According to that survey, more than 80% of respondents now believe that 'hybrid' capability is 'important'.

In their latest study ARC went on: "While fieldbus is still primarily limited to new installations and greenfield facilities, we are also witnessing increased acceptance of fieldbus in existing installations for replacement of conventional control architectures. We also observed a shift in the concern of users from "soft" issues such as supplier commitment to fieldbus technology to more practical concerns, such as support of remote diagnostics." This of course indicates the growing acceptance plantwide for fieldbuses and the fact that the size of installations is growing too. Fieldbuses are also being adopted plantwide by many corporations and naturally the issue of maintenance is becoming more important.

40% savings, with much more on offer too

If we go back to the beginning, fieldbus is basically a way of connecting multiple field instruments to a single cable or network. That means it eliminates a lot of copper and hard labor. Many plants report up to 40% savings during the initial phases of a plant installation and although some of this is offset by higher prices, immediate financial gains are available.

Configuring a fieldbus network is easy too. It can be done from a central operator station sited remotely from the PC, with full engineering and diagnostic facilities at your fingertips. Batching instructions and recipe building can be proven off-line and invoked as necessary.

Often, this is a good enough reason for converting, but it's in the operational stages of a plant's life that even bigger gains take hold. For example, all-digital technology means more accurate measurements leading to better control strategies and tighter quality control. It also means better trending and historian capability, which adds to the improvements in operational control. Later changes to fine tune the process simple as well, with central audit trails, trending and historian functions enabling you to keep an accurate record of what's going on.

With fieldbus, more data is available on a continuous basis, which means that management level systems can be fed with better information and there's huge potential for improved plant management by means of diagnostics, Preventive Maintenance techniques and Asset Management software. Diagnostics becomes easier because of centralized access, which means engineers rarely have to struggle out in the field to find a fault. With fieldbus, the fault can usually be located remotely, meaning replacement parts can be obtained and fitted much faster.

Making use of all these techniques should be an integral part of running plants today because Returns on Investment can be massive. In the current ARC Survey, 18 percent expected payback within 6 to 12 months, while 27 percent expect payback in 1 to 6 months!

What about the personnel issues?

Changing over from traditional technology can be daunting - particularly for personnel who are skilled in the old arts but not in the new. There's plenty of help available and that 10-15 year background really comes into its own because an enormous amount of experience, know-how, and ancillary services such as training is out there.

The PROFIBUS world boasts 24 Regional PROFIBUS Associations (RPAs) globally, with a similar number of PROFIBUS Competence Centers (PCCs) working alongside. In North America, the RPA is called PTO (the publishers of this newsletter) and the PROFI Interface Center (PIC) is the PCC. Elsewhere in this newsletter you'll find more information about both and either will be pleased to take your calls.

Both organizations are there to give you the benefit of their experience based on an installed base of over 15,000,000 PROFIBUS devices. That's more than all the others put together. Free training courses can ease the early transition stages and more advanced training - for designers, developers, installers and maintenance staff - can fill in the later requirements.

Web site Forums play their role too, and can be used to find answers to common

problems. In fact, you'll probably find that your question has already been answered because after 15 years there's not much that has not been covered by this colossal industry called PROFIBUS.

Now ... what's stopping you?

You'd think that all these benefits would convince the world to make the move to fieldbus tomorrow. Sadly, that hasn't happened. If you study the ARC end user survey closely you see that one of the main reasons is a lack of awareness or 'buy-in' at all levels in the organization, from corporate management to the plant floor. As a result a large number of North American plants are running less effectively than they could and gradually becoming more non-competitive.

Is that what you really want? Or would you prefer North American industry to run more effectively and more profitably? If you're one of those 85% who are not using a fieldbus and you want to help then you owe it to yourself, your company and even your country to start the transition today. There's plenty of support available, so there's no excuse. Call us.

See you at one of our [training courses](#)?

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CALL FOR CASE STUDIES : Have you recently solved an automation challenge using PROFIBUS? Then why not tell the world here? Case studies are always worth publicizing - they may help someone with a similar challenge and they will certainly help your own image. **Send stories to [Carl Henning](#)**

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NEW PRODUCTS

PROFIBUS DPV1 Master Connectivity for ControlLogix : Finalist for Plant Engineering's 2005 Product of the Year, ProSoft Technology's PROFIBUS DPV1 Master module is the single-slot connectivity solution for ControlLogix users to interface with up to 125 PROFIBUS DP slaves. This unique solution provides 3 times the Cyclic Data input & output of any other PROFIBUS interface on the market today. The module acts as a PROFIBUS network scanner, providing high-speed transfer of data over the backplane between PROFIBUS devices and the ControlLogix memory table. ProSoft Technology's PROFIBUS DP Master module is an invaluable asset for many industrial applications such as manufacturing, packaging, water/wastewater, and oil & gas applications.



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Proxy connects PROFINET I/O to Ethernet, PROFIBUS or Serial networks:

Woodhead announces the release of the applicom® PROFINET® I/O Proxy (part number APP-PNT-GTW-P). It is the first product on the market to provide real-time communication between a PROFINET I/O network and other devices connected to an Ethernet, PROFIBUS® or Serial network via the PROFINET I/O channel. The data coming from the different networks will be exchanged with PROFINET devices via the applicom database. Included with the PROFINET I/O Proxy is the applicom software, powerful configuration and diagnostic tools which run on a Windows® 2000/XP/NT4 environment. Integration into the PROFINET I/O controller (i.e. S7/Step7 programming tools) is made possible using the generic GSDML file provided with the PROFINET I/O Proxy.



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Configurable IP67 PROFIBUS -DP Modules: Turck's new FXDP AIM-style I/O module offers the following capabilities:

- Extended diagnostics
 - Per point short-circuit protection on inputs
 - Per channel short-circuit protection on outputs
 - Full mapped diagnostic information
 - Configurable inputs and outputs with 'XSG' module
 - I/O connection compatible with quick connect FIXCON® M12 metal connectors
- Many I/O configurations available from 8 in per port to 12 in and 4 out:



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Digital I/O modules: Woodhead announces the release of its compact family of BradControl™ digital I/O modules for the PROFIBUS® network. 4- and 8-port formats are available in several I/O configurations supporting both PNP and NPN inputs. PROFIBUS slave DP-V0 is supported in accordance to EN 50170 specifications. Each module comes equipped with diagnostic LEDs providing status information on network, power, inputs and outputs. The 4-port format uses M12 connectors which incorporate Woodhead's new Ultra-Lock technology, a 'push to lock' method used to provide fast, simple and secure connections between the I/O module and the I/O devices. BradControl modules are ideally suited for material handling equipment and robotic arms, can be machine mounted and are rated for IP67 harsh environments.



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Wireless with PROFIsafe: TR Electronic has introduced the 'DATAEAGLE' wireless PROFIsafe data communication system. The wireless connection is entirely transparent to the PROFIBUS configuration. All PROFIBUS devices up to 1.5 Mbit can be connected via the wireless technology. PROFIsafe provides an industrially initiated and accepted secure transfer method based on PROFIBUS and is a certified profile according to IEC 61508. Ethernet WLAN, Siemens S7 MPI Interface, PROFIBUS DP and DECT Bluetooth technology are supported. Typically, DATAEAGLE might be used in a mobile transportation system connected via wireless to a central PLC. The local PROFIBUS controls the drives on the vehicle; the wireless bus runs via PROFIsafe for emergency stop transfer.

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