



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



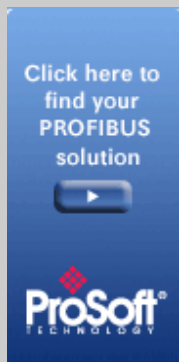
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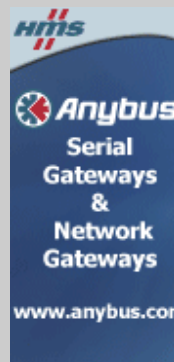
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**IN THIS ISSUE**

**SPONSORS**



- [\*\*DEBUNKING THE MYTH: back again, after a short break!\*\*](#)
- [GENERAL ASSEMBLY MEETING](#)
- [ONE DAY TRAINING EVENTS FOR PROFINET DEVELOPERS](#)
- [PROCESS WEBINARS](#)
- [PIC 'CONNECTION'](#)
- [TRAINING IN TROUBLESHOOTING](#)
- [COMPETENCE IN PROFIsafe DESIGN](#)
- [PROFINET IN ACTION: WATER EXTRACTION; MAKING COGNAC](#)
- [WORLD NEWS: UK, CHINA, BRAZIL, SOUTHERN AFRICA, ITALY, POLAND, SWEDEN](#)
- [NEW PRODUCTS : CONTROLLER CARD; PROFIBUS MASTER FOR COMPACTLogix; PROFIBUS BOARDS; ANALYZER FOR PROFINET; PROFINET CONTROLLER; IO-Link UPDATES; INDUSTRIAL PC HAS PROFINET; TOPOLOGY SCANNER](#)



**DEBUNKING THE MYTH:**





*Sweet SUE has shown her face yet again!*

*While on vacation in her home island of Jamaica, Pretty Polly (left) noticed a new on-line White Paper trumpeting some alleged 'truths' about Industrial Ethernet. The document is called 'Evaluating Industrial Ethernet: What is Standard?' and in it the author revives memories of our very own Sue (see right, middle).*

*SUE (Standard Unmodified Ethernet), says the author, comprises the officially defined Ethernet (IEEE 802.3), the TCP/IP/UDP suite and application layer protocols such as SMTP, HTTP and others. Nothing more and nothing less is allowed and anything that by-passes/adds to/subtracts from this cannot be SUE. Special chips are roundly condemned and non-COTS hardware should be avoided at all costs, says the document. Well, that rules out all Industrial Ethernet protocols then!*

*The author - a Rockwell Automation employee of course - dredges the depths of pedantry to find fault with every Industrial Ethernet solution except his own!. Surprise, surprise. The document bundles PROFINET into the 'non-standard Ethernet' group, which makes it **bad, bad, bad!** What nonsense.*

*Isn't it about time this stupidity stopped? Otherwise, we'll have to dust off our own 'Pretty Polly, Sweet Sue and the White Knight' document and start waving it about again.*



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*You have been warned!*

*Oh, all right, if you insist - [download Pretty Polly et al here](#)*

**GENERAL NEWS**

**GENERAL ASSEMBLY MEETING:** The PTO's 14th annual General Assembly Meeting (GAM) in Scottsdale, August 6th/7th, attracted 70 delegates, including representatives of over 50 North American member companies. A great series of presentations was organized, with 'User Experiences' (of both PROFIBUS and PROFINET) interspersing technical updates and marketing presentations.



Executive Director Mike Bryant (pictured right) explained that the 25 million PROFIBUS nodes now installed were probably only the start: "30 million is easily achievable now," he said, "and who knows where it will end? At current rates even 50 million is within our grasp. What a great foundation that is for PROFINET, which is now also taking off nicely." He urged members to take advantage of the great commercial opportunities offered today by PROFIBUS.



A open topic throughout the meeting was whether PROFINET might cannibalize PROFIBUS sales, or vice versa. The feeling was that although there will eventually be an evolutionary change, nothing could be lost now by promoting PROFINET hard. In fact the wonderful partnership offered by PROFIBUS and PROFINET together was part of the marketing magic of the two technologies. Just go for it! was the consensus.

'Collaboration Corner' covered the role that PI - that's PROFIBUS and PROFINET International, PTO's parent organization - plays in international efforts to bring key automation technologies closer together. Ron Helson (right) of the HART Communication Foundation described WirelessHART and how the Wireless Cooperation Team (WCT) is developing an interface to allow fieldbus technologies like PROFIBUS and PROFINET to easily and quickly bring WirelessHART data directly into automation networks.



Among the end user presentations was one by Merat Zarrei of the DeKalb County Department of Watershed Management, Georgia, pictured right, who described how his decision to deploy PROFIBUS plant-wide had resulted in "dramatic" savings in manpower, time and costs. PROFIBUS in Mining (actually on the big machines used in mining applications) was the topic of another end user presentation, this time from Todd Preder (below, right) of the Professional Control Corporation. PROFINET apps in a cigar plant and a water extraction facility were also described.




The GAM included 'table tops' and was preceded by a PROFINET Training Day and a PROFINET Developer Workshop. The main event delivered plenty of networking opportunities, including some fun time courtesy of PTO and a pool party at Casa de Bryant on the last evening.


*Read what [Automation World](#) had to say.*  
*Read what [Control Engineering](#) had to say.*  
[Images of the meeting](#)

[Top](#)






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**ONE DAY TRAINING EVENTS:** The PTO and PROFI Interface Center training classes continue to roll out across North America. Carl Henning blogs about the latest [here](#), including a review of some recent feedback forms. Typical responses from attendees were:

- “Material covered was just right for me.”
- “Fantastic presentation. Thanks for inviting us.”
- “PROFINET is revealing on how to handle determinism properly in Industrial Ethernet.”

If you'd like to attend one of our FREE one day training sessions, here are some upcoming events:

UPCOMING VENUES		
PROFIBUS	Process	PROFINET
<a href="#">San Antonio, TX</a> Sept 19th	<a href="#">Long Beach, CA</a> Sept 25th	<a href="#">Louisville, KY</a> Sept 30th
<a href="#">Denver, CO</a> Oct 30th		<a href="#">Tampa, FL</a> Oct 23rd
<a href="#">Indianapolis, IN</a> Nov 13th		<a href="#">Chicago, IL</a> Nov 12th <a href="#">Developer Workshop</a> Nov 13th

If you are interested in attending, then register using the links. Or bookmark a link above - [or this page](#) - and check back frequently for updates. Attendees receive a certificate for 5.5 Professional Development Hours (PDH) and PTO raffles a week-long Certified Network Engineer Class (a \$2695 value) at each PROFINET event! There's more on the web [here](#).

[Top](#)

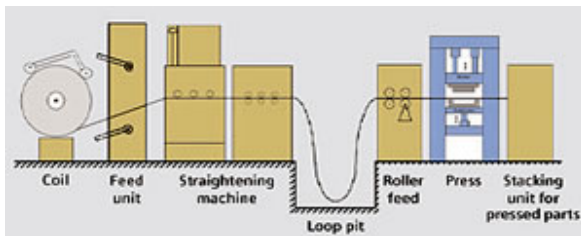
**FOR PROFINET DEVELOPERS:** Keen to develop PROFINET products? Then your last chance to attend one of our Developer Workshops this year is coming up on [November 13th](#) (or see table above). You must also attend the FREE one day training class the previous day. Companies such as Altera Corporation, Grid Connect, Inc., Hilscher North America, Inc., HMS Industrial Networks, Inc., IXXAT, Siemens Energy & Automation, Real Time Automation, Softing North America and Molex will be on hand to talk about their developer tools. Each offers a unique approach - find out which one suits your needs best. There's also a raffle for a nice prize - usually an iPod.



[Top](#)

**PROCESS WEBINARS:** If we're not coming to a city near you with one of our PROFIBUS PA training classes then one of our webinars may be perfect for you. [More information here](#). Previous Industrial Ethernet and PROFINET webinars are [archived here](#).

[Top](#)



**PIC 'CONNECTION':** The latest issue of the PIC 'Connection' magazine features a brand new PROFINET story about the control of hydraulic drive technology metal-forming machines, which is one of the most demanding of motion control applications. Among other things, it requires quick and precise



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control of rams and bed cushions, together with a distance, time or process-dependent use of speed and pressure profiles. Travel movements in pressure-controlled hydraulic presses are very demanding because of the 'flying transition' from position regulation to pressure regulation. In the instant when the tool strikes the workpiece, an extremely dynamic progression of forces occurs, which must be regulated using the bed cushions. It may also be necessary to follow a pre-defined pressure profile. In the application described, the controllers of the individual modules in a strip line are linked to each other using PROFINET with IRT. The deterministic exchange of the set position values and actual position values via IRT telegrams permits exact synchronization of the axes. There's a host of other good stuff in 'Connection' too.

Read the [PIC 'Connection' here](#)



[Top](#)

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**TRAINING IN TROUBLESHOOTING:** PROCENEC and Grid Connect recently organized a PROFIBUS Troubleshooting & Maintenance training course in Atlanta, USA. For two days, 17 participants were trained in solving problems in PROFIBUS installations using the latest tools such as ProfiTrace 2. More and more factories in the USA are using PROFIBUS as their standard automation system and there is a big demand for training. Another session will be organized in October 2008. [More here.](#)



[Top](#)

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**COMPETENCE IN PROFIsafe DESIGN:** The next three-day PROFIsafe Training Workshop has been announced by PNO, PTO's sister Regional PI Association in Germany. It will be held in English and PNO is inviting North American delegates to attend. The date is October 28 - 30, 2008, in Karlsruhe.

The Training Workshop recognizes the importance of 'competence' in functional safety matters, and has been developed by the responsible PI working groups in cooperation with TÜV. The three day session includes a written test at the end of each day. Delegates having passed all tests will receive a TÜV certificate entitled 'Certified PROFIsafe Designer'. The training must be repeated every second year to keep the required level of competence up-to-date. [More here.](#)

[Top](#)

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## PROFINET IN ACTION

*Two PROFINET case studies this time:*

**WATER EXTRACTION WITH PROFINET:** ITC in Belgium has completely renewed the operation of its water extraction activities, choosing Phoenix Contact to supply the control units and decentralized modules that control various wells and pumps. The exchange of data between the modules and the PLC is done via PROFINET using an existing Ethernet infrastructure.



ITC is part of the Balta Group, one of the leading manufacturers of floor coverings worldwide. Water, one of its most important raw materials (it's needed for making paint), is extracted from 28 wells distributed throughout the company. Previously, these were controlled by a 25-years-old central control unit, which used masses of cables and did not comply with current standards. ITC therefore set about looking for a new partner to supply a modern PLC-based system.

Water extraction is now controlled by an ILC 350 from Phoenix Contact, with twelve slaves keeping track of, and operating, a number of wells each. The slaves exchange I/O data via PROFINET with the master PLC, which activates pumps according to input signals such as low

buffer tank water levels, a sudden drop in pressure, or various other alarm conditions.

With the Phoenix Contact system, a malfunction is detected immediately by a reader in a slave and directly signaled through to the central control unit, which then alerts intervention teams by sending out e-mails and SMS messages.



Günther Bonte, (left) head of the Electrical Department at ITC, said: *“In the factory, we have a classic Ethernet network. A few years ago, we replaced all our office hubs with Ethernet switches and optical fiber. Therefore, switches were already available in the vicinity of the wells. The connection of a short cable between switches and I/O ports was all that was necessary during the upgrade. Thanks to PROFINET, we have been able to reap more benefits from those earlier investments in switches. We did consider facilitating communications between the PLCs using classic Ethernet. However that was more complex to program. PROFINET is easier to integrate. We know we are not using the full real time potential of PROFINET but the benefits have been worthwhile nevertheless.”*

**MAKING COGNAC WITH PROFINET:** The most important line at Hennessy’s La Vignerie bottling plant for VS and VSOP cognac, has been fitted with a redundant PROFINET CBA network linking sub-systems based on PROFIBUS and SIMATIC S7-300 PLCs. Control ‘components’ on the line exchange up to 200 data words over the network with a guaranteed cycle time of 50 ms. This facilitates a connection to the corporate Ethernet, enabling easy integration with individual modules of the Hennessy SAP ERP management system.



The line consists of three conveyor systems and eight production machines based on PROFIBUS, each controlled with S7-300 PLCs, and fitted with CPU 315-2 PN/DP interfaces to connect them to a redundant PROFINET ring via SCALANCE X204-2 switches. The first conveyor also has an X202-2IRT switch which controls ring redundancy and self-restoral.

Configuring information exchange is straightforward. With PROFINET CBA, engineers can insert, swap or connect individual machines simply by dragging and dropping them in a graphical display – leading to significant time savings not only during the design phase but also when setting up the communications. The CBA solution has also achieved high reliability and improved efficiency.

[Top](#)

## WORLD NEWS

**UK:** The recent Conference was an unqualified success, with over 70 delegates attending two days of seminars, workshops and presentations. Chairman Bob Squirrell attributes the success to focusing on Users. “User attendance was up - particularly from the Process and Water industries. The Conference will be back at Stratford Manor again in 2009, on 16th and 17th June. Separately, the PICC at Manchester Metropolitan University has certified the first UK PROFINET engineers.



**CHINA:** The China PROFIBUS User Organization (CPO) attended the 12th International Exhibition of Modern Factory/Process Technology and Equipment (2008 FA/PA) held by the China Association for Mechatronics Technology & Application (CAMETA) on June 10-13, 2008 in Beijing, China. **BRAZIL:** Cesar Cassiolato from SMAR has been re-elected as President of the Brazil Latin America Regional PROFIBUS Association. He and fellow RPA directors Marco Aurélio Padovan from SENSE and Jomar Misseno from SIEMENS, (both re-elected until 2010) have increased the membership of the PROFIBUS Association by 40%. They also founded the first PROFIBUS Competence Center in Latin America. **SOUTHERN AFRICA:** The Automation Training Council in South Africa, established as a joint effort between the Southern African German Chamber of Commerce and Industry and the PROFIBUS User Group of Southern Africa, has now trained 61 students since August 2007. In addition, 9 lecturers at South African educational institutes have benefited. In effect, this means that 7 local educational institutions now have a base of cutting-edge lecturers. This all has been made possible by initial funding from the German Federal Ministry of Co-operation and Development through its agency SEQUA. Local companies—Siemens, ABB, Lapp Cable and IDX Online—have also supported the initiative. **POLAND:** The

Polish RPA has reported on a successful experiment to set up a distributed PROFINET CBA system straddling three countries and connected via the Internet. Poland, neighboring Germany and Norway hosted the experiment, with three universities collaborating. A PLC in Germany controlled a small pick and place robot. In Poland, a second PLC was used to control this robot using the internet and PROFINET CBA. In Norway, a SCADA station visualized movements of the robot and measured the delays in transmitting data across the internet. The tests showed that acyclic data transfer could be accommodated within 1000 ms, meaning that PROFINET CBA can be used for visualization and parameterization over the internet.



**ITALY:** In July the 2nd PROFIBUS Product Developer Training Class took place in BRESCIA (Italy) at the PROFIBUS Competence Center (PICC) at CSMT Gestione Technological Center in the Campus of the Brescia University. Around 45 engineers learned how to undertake a PROFIBUS product development project. **SWEDEN:** The Swedish RPA will attend the PROCESSTEKNIK Conference in Gothenburg in October. The Swedish web site is also undergoing an 'extreme makeover' with the goal to reach every aspect of PROFIBUS and PROFINET with no more than 3 mouse clicks.

[Top](#)

## NEW PRODUCTS

**CONTROLLER CARD:** This PCI / PCI Express IO-Controller card for PROFINET provides high-speed deterministic communication between control / SCADA applications and IO-devices. It is packaged with a Windows software suite including configuration console, diagnostic tools, library DLL and OPC server. A network detection mechanism is able to discover and build a network topology based on the integrated GSD device library. Acting as an IO-supervisor, the console allows each device to set the name and IP address for each IO-device. OS driver kits are available free-of-charge for Linux, VxWorks, QNX and other platforms. [MOLEX](#)



[Top](#)

**PROFIBUS MASTER FOR COMPACTLogix:** ProSoft Technology's new single-slot PROFIBUS DP V1 Master (PS69-DPM) and Slave (PS69-DPS) modules are backplane-compatible with the CompactLogix platform. Master DTM is included for FDT Asset Management, with support for FDT-compliant containers such as PACTware or FieldCare. The Master module supports both I/O control and CIP messaging for slave parameterization, and acyclic DP-V1 messaging via explicit ladder logic message blocks, status data and alarms. For configuration, both modules use PROSOFT.fdt Configuration Software, or the slave module can be configured via ladder logic. Both modules are PROFIBUS certified and Encompass Approved. [PROSOFT](#)



[Top](#)

**PROFIBUS BOARDS:** One of Softing's PROFIBUS boards was customized to fit into a subsea production component designed by Aker Solutions, Scotland and has passed the stringent quality requirements mandated for use in subsea production systems. Softing's PROFIBUS board is integrated into an active electronic module that is part of a so called 'Christmas Tree', an assembly of valves, spools and fittings for an oil well. Aker Solutions rigorously evaluated numerous vendors that offer PROFIBUS components and decided to partner with Softing because of the availability of a PROFIBUS board that satisfied the functional and quality requirements and Softing's ability to perform the required customization in an extremely short time frame. The new unit was subject to a rigorous qualification process with respect to mechanical shock, vibration, thermal shock, storage and operational temperatures. [SOFTING](#) or [ken.hoover@softing.com](mailto:ken.hoover@softing.com)

[Top](#)

**ANALYZER FOR PROFINET:** Hilscher has launched a PCI-based network analyzer designed for use with Real Time Industrial Ethernet protocols such as PROFINET RT/IRT. Network traffic can be time-stamped within a 10ns resolution to provide accurate information about jitter and delay times for individual nodes. The netANALYZER is controlled by Wireshark and it provides 4 full duplex ports thus allowing the measurement of traffic into and out of a node. With these features

netANALYZER is capable of measuring the network response of high performance drives and motion control products based on the IEEE 1588 specification. [HILSCHER](#)

[Top](#)

**PROFINET CONTROLLER:** The new RFC 470 PN 3TX is a DIN rail-mountable compact control system providing up to five direct inputs and three direct outputs, designed for universal applications in machines and systems. It's programmed and parameterized with PC Worx software. Status messages of the control system and fieldbus system are easily displayed via the TFT diagnostics display. As part of the concept of IT-powered automation, the RFC 470 PN 3TX provides open automation and IT interfaces for communication. In addition to an Interbus master and a PROFINET controller interface, three 10/100 Mbps Ethernet interfaces ensure easy integration of the system into plant networks. Productivity can thus be increased significantly. [PHOENIX CONTACT](#)



[Top](#)

**IO-Link UPDATES:** MESCO has updated its IO-Link Slave Stack. All specification options are now included, such as Service PDU for transferring large amounts of application specific data, the Interleave Mode for up to 32 byte process input and output data transfer, and Extended Diagnostics/Events. The package consists of documented Source Code written in ANSI-C, an application example and detailed development documentation with a hardware porting description. Slave evaluation boards and a complete IO-Link Starter Kit are already available. Key components include the slave firmware stack, hardware modules plus schematics both for Master and Slave Devices, plus an IO-Link monitor and environment for test and commissioning. The kit will be released in November at the SPS/IPC/DRIVES fair. [MESCO](#)



[Top](#)

**INDUSTRIAL PC HAS PROFINET:** Siemens has equipped the mainboards of its ruggedized industrial PC family with a PROFINET interface. Using ERTEC 400 the PC now incorporates a three-port switch and supports isochronous real time operations. It also enables simultaneous real-time and IT communication on one line using TCP/IP. Integrating the interface relieves the processor of communication tasks and increases system performance. It also saves an expansion slot. Three ports allow flexible deployment of linear or ring topologies and facilitate the connection of PLCs, distributed I/O and drives. Alternatively, they can be used for visualization. WinAC RTX 2008 already uses the new communication facilities and the network can be configured with Step 7 or NCM-PC. [SIEMENS](#)



[Top](#)

**TOPOLOGY SCANNER:** The new ProfiTrace 2.1 tool can generate the topology of a PROFIBUS network without shutting down the installation! The Topology Scan is a new feature of ProfiTrace 2. It generates a clear network drawing that contains the location of the devices and length of the cable that links them. This new feature makes ProfiTrace the most complete PROFIBUS tool available. More and more end-users and manufacturers are standardizing on ProfiTrace as the default troubleshooting tool for their enterprises. [GRID CONNECT](#)

[Top](#)

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