PROFINEWS
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PROFIBUS VALUE APPROACHES $50 BILLION!

INSTALLED NODES EXPECTED TO PASS 30 MILLION BY 2010

The world's most popular fieldbus just keeps on growing!

News that the number of installed PROFIBUS devices passed 20 million earlier this year has been upstaged by the prediction that the number could reach 30 million and higher!

PI (PROFIBUS & PROFINET International) experts now believe that sales growth will be maintained through to 2010 or even later. That means, even by conservative estimates, that the 30 million target should be easily passed by then.

"PROFIBUS has achieved a very high level of acceptance industry-wide," said PI Chairman Edgar Küster. "Automation users across the world are comfortable with the reliability, performance and cost-effectiveness of PROFIBUS and they have staff who are experienced in using the technology. It makes sense that they want to continue with PROFIBUS for as long as they can."

US$50 Billion

According to Küster, 20 Million installed devices represents a market value of US$45-48 billion, or €33-35 billion. "The PROFIBUS market has therefore become a huge business for PI member companies," he said. "And, as well as facilitating major productivity and quality improvements, PROFIBUS has also helped users and integrators save 20 to 30% through reduced installation and life cycle costs compared with previous centralized control systems, so delivered value is high!"

Küster:
"PROFINET is set to become as successful as PROFIBUS."

PROFIBUS will remain active in plants for much longer than originally thought, believes Küster. "The most successful fieldbus in history has many more years of success ahead!"

PROFINET Ramps up

Meanwhile, PROFINET, PI's Industrial Ethernet solution, is ramping up sales. The huge installed base of PROFIBUS provides substantial support for the enterprise-wide benefits offered by PROFINET because existing PROFIBUS networks can easily be integrated into PROFINET's architectures, offering an easy migration path. For the same reason, says Küster, PROFINET is driving continued support for PROFIBUS.

"PROFINET protects existing investments in PROFIBUS due to the high degree of technology cross-fertilization we have employed." says Küster. "Even the need for re-training is minimal."

He points out that other fieldbuses such as FOUNDATION Fieldbus and DeviceNet can also be integrated easily - HART too, making PROFINET a powerful, all-encompassing, automation solution.

"PROFINET is modular, which means it offers users huge flexibility, and it covers 100% of automation needs so there are no limitations to its use in manufacturing plants. With PROFINET, end users don't have to make difficult choices - they simply use the best fit for their particular application," Küster said, adding "PROFINET is set to become as successful as PROFIBUS."

FULL PROFINET CERTIFICATION

The full certification of PROFINET IO devices according to Conformance Class A is now available from three PI Test Labs.

Certification for PROFINET devices is mandatory. All manufacturers of PROFINET must certify their PROFINET IO devices by Hanover Fair 2008.

PI's Test Laboratories undertaking the required certification tests include:

> ComDeC, Fürth
> itm, Technische Universität München
> PROFI Interface Center (PIC), Johnson City/USA

For contact details and more about Test Labs / Certification, visit:
www.profibus.com/pn/support/ptls/

PI News

REQUIREMENTS FOR PROFINET IN PROCESS AUTOMATION

The 'DCS Requirements' Working Group of PI has defined the profile for PROFINET in process automation. A list of about 100 requirements has been drawn up, and agreed by relevant marketing Working Groups.

Close contact with the NAMUR (the International User Association of Automation Technology in Process Industries) Working Group 2.6 'Fieldbus' ensured their requirements have been incorporated.

The specification tasks have begun in PI Technical Working Groups, and should be completed by spring 2008.

The Working Group comprises representatives from ABB, Emerson, Endress+Hauser, Pepperl+Fuchs, Siemens, Softing, Stahl and Yokogawa. Central issues include device integration, maintenance and diagnosis, fieldbus integration, data flow, time stamping, time synchronization and redundancy.

ARC White Paper

An ARC White Paper on PROFINET in the Process Industries was recently published **here.**

EDDL STANDARD

ISA has published the IEC Standard 61804-3 for EDDL as an ANSI/ ISA standard.

FIRST IO LINK PRODUCTS LAUNCHED

PI has published the physical layer and protocol specification of IO-Link, the open, fieldbus-independent communication interface for sensors and actuators.

IO-Link makes it possible to integrate sensors and actuators into an automation system easily and quickly. First products were presented at the Hanover Fair in April 2007. These ranged from simple sensors providing mainly binary information to multifunctional devices capable of indicating various process values (so called 'function islands'), which showed the actuators and their associated check-back signals as a unit.

Work is now focused on open systems integration and the creation of IO-Link profiles to ensure products can be easily and quickly replaced by alternatives without restricting manufacturer-specific functionality.

IO-Link can already be integrated into PROFIBUS and PROFINET to enable convenient configuration and commissioning at all levels of the manufacturer-specific functions. Calibration is supported in the same way as detailed diagnostics.

At the Hanover Fair, PI gave an impressive demonstration of how devices from different manufacturers are able to interact. The integration definitions that are currently being specified are intended to allow integration by means of a simple 'device description', which is the key to ensuring standardized mapping to higher-level communication systems (both fieldbuses and Ethernet-based systems).

Within PI, 26 members are now working on IO-Link. In addition to the major sensor manufacturers, this includes manufacturers of I/O modules and automation systems. Semiconductor manufacturers recently joined the team in order to contribute to specifying integrated interfaces for implementing IO-Link into products in the most cost-effective way possible.

'MEET THE EXPERTS' AT THE DOW CHEMICAL COMPANY

First stop for this year's "Meet the experts" tour was The Dow Chemical Company in Schkopau, Germany, on July 17, 2007. The sponsoring companies (Dow Chemicals, ABB, Endress+Hauser, Samson, Siemens, Trebing+Himstedt, Pepperl+Fuchs and Turck) were also showing demo equipment in the excellent showcase that Dow provided for the event.

About 80 attendees from the chemical, pharmaceutical and food&beverage industries listened to presentations about installation

benefits and redundancy concepts for higher availability, as well as the diagnostics capabilties of a seamless PROFIBUS solution. The whole thing was topped off by a users' presentation of the benefits and experiences encountered during the engineering of a bioethanol application.

germany@profibus.com

STANDARDS WORK ACKNOWLEDGED

The International Electrotechnical Commission (IEC) has awarded Dr. Michael Franke, Mr. Hans-Peter Otto and Mr. Ludwig Winkel (pictured above) with the IEC's prestigious '1906 Award'.

Successful standardization activities strongly depend on the drive of the persons involved. The '1906 Award' honours IEC technical experts around the world by recognizing exceptional and recent achievements which contribute in a significant way to advancing the work of the Commission.

Michael Franke has been closely involved in PROFIdrive standardization in TC22; Hans-Peter Otto has been active regarding the standardization of automation technologies in TC65; Ludwig Winkel has been lobbying for PROFIBUS and PROFINET in TC65's standardization projects for communication technologies.

The PI Board, on behalf of the PI community, congratulates Michael Franke, Hans-Peter Otto and Ludwig Winkel and thanks them, and all other PROFIBUS and PROFINET standardization experts, for their active support of PI's technologies.

International standardization contributes significantly to the rapid distribution of technical knowledge and innovations. Today's technology innovations occur at ever shorter intervals so standards need to be developed fast in response. PI considers representation on standardization bodies an important task and has been delegating experts to standardization bodies since the beginning.

New Products

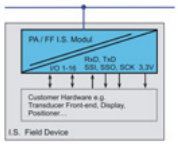
NEW OPTICAL PROFIBUS

Siemens Automation and Drives (A&D) has fundamentally overhauled its PROFIBUS optical link modules (OLMs). New Version 4.0 modules are equipped with additional functionssuch as improved electromagnetic compatibility, LEDs for indicating the fiber optic line quality, and approvals such as Atex ExZone 2 and UL-HazLoc. The line quality values can now be transferred via measuring terminals to the analog input module of the controller and analyzed. Linear bus, star and redundant ring topologies can be utilized up to 15 kilometers. **Siemens A&D**

ETHERNET/ PROFIBUS DTM INTERFACE

Radical improvements are promised from the latest CommDTM PROFIBUS DP-V1 release. Extra licensing is a thing of the past, says its maker, because the CommDTM license is now included. Enhanced communication capacity and performance significantly shorten commissioning times for medium and large-scale installations. Operation via Ethernet enables seamless vertical integration. CommDTM PROFIBUS DP-V1 has successfully passed tests with the dtmINSPECTOR, the official DTM test and certification tool. The new CommDTM for the xEPI FDT (incl. update tool) as well as the new Release 2.0 of the DTM Library are available free-of-charge from. **Trebing & Himstedt: +49 (0)385 39572-0 or info@t-h.de**

MAU MODULE



A complete fieldbus-powered intrinsically safe product can be built using the latest PROFIBUS PA H1/IS hardware module from Mesco. Together with an application-specific analog front-end the module provides everything needed to add fieldbus functionality to field devices. It also includes an internal CPU and resources to integrate complex signal conditioning. **MESCO Systems: +49 7621 89031-42 or info@mesco-systems.com**

IO TESTER

'PROFINET IO Tester' is the first high quality pre-certification tool for testing PROFINET IO protocol functionality. To reduce test efforts it provides the user with a fully automated test system with an optimized user interface. For developers, the tester can serve as a support tool during preparation for certification tests. The test cases included incorporate the know-how of the PI accredited certification experts. For further information and pricing please refer to the web page **www.pn-tester.de**.

BUS DIAGNOSIS

The 'bus check' family of tools for diagnosing industrial bus systems now includes the new BC-450-PB for analyzing PROFIBUS DP and PROFIBUS PA networks simultaneously. The results of the analysis for both bus systems can be displayed in a single interface on any PC. Easy comparison of recordings is possible. Even users without detailed knowledge of the protocol can see at a glance whether PROFIBUS is running smoothly, or whether there are problems. Intuitive software offers the option of switching between German and English online.
Softing: +49 89 456 56-363 or gerd.schneider@softing.com

DISPLAYS

Siebert's S102 Series displays can be driven directly from PROFIBUS DP. A special characteristic is their installation profile of 66 mm. Numeric displays with 14 and 25 mm and alphanumeric versions up to 30 mm character height are offered. Baud rate (up to 12 Mbs) is detected automatically. Instead of DIP switches, there is a user menu which is operated by pushbuttons. **Siebert Industrieelektronik: +49 6806 980 0**

INDUSTRIAL ETHERNET FGPA

Altera Corporation has announced what it claims is the first FPGA-based support for Ethernet communications protocols like PROFINET, using Altera's low-cost Cyclone series. The IP cores enable designers to implement PROFINET on a single board, enabling system OEMs to add networking capabilities to their automation products cost-effectively while retaining design flexibility. IXXAT, one of Altera's IP partners, is offering a development kit consisting of a Cyclone-based reference design and evaluation board, protocol stack, MAC, TCP/IP stack, interface application and a host API in source code. **www.ixxat.com**

SWITCHES FOR HAZARDOUS AREAS

BradCommunications' Direct-Link Industrial Ethernet switches now have Class 1, Division 2 certification making them UL approved for use in hazardous environments where volatile flammable liquids, gases or vapors could exist. All Direct-Link Industrial Ethernet switches (the DRL-200 and DRL-300 series) and media converters (DRL-100 series) are now being shipped with this certification. Managed and unmanaged switches are available in 5-, 8- and 9-port configurations supporting both copper and fiber wiring. **Woodhead**

CommDTM DRIVER FOR PROFIBUS DP-V1

The PROFIBUS DP-V1 CommDTM driver has successfully passed FDT certification testing. The driver enables the SST PROFIBUS USB interface (SST-PFB-USB-DTM) and the SST PROFIBUS scanner for the Allen-Bradley ControlLogix (SST-PFB-CLX-DTM) to configure and diagnose user-friendly DTM field devices. Both products support PROFIBUS DP-V1 at all baud rates, making them ideally suited for use in PROFIBUS PA networks through a segment coupler. Other features include diagnostic tools, PROFIBUS and DTM station addresses assignment, logging and advanced PROFIBUS parameters for customized access to HART devices. **Woodhead**

SERVER TO SLAVE COMMUNICATIONS

The IEC60870-5-104 Server to PROFIBUS DP Slave communications module can create a powerful connection between devices on an IEC60870-5-104 network and a PROFIBUS master device. The module is a gateway that provides one Ethernet port and one PROFIBUS DP Slave configurable DB9F port. The 104S module accepts commands from an attached master unit on the network and generates messages. **Prosoft Technology: alutovsky@prosoft-technology.com or +1 661-716-5257 Direct Phone**

MORE PRODUCTS ON-LINE

Our **On-line Product Guide** now has over 2,500 product entries. Search on keywords, text, profile and certified products.

Applications

GERMANY / AUTOMOTIVE: The BMW vehicle works near Leipzig is one of the world's most modern car factories. BMW's 3-series cars have been rolling off the line here since the spring of 2005, and up to 650 vehicles per day are produced.

During the planning of the works particular attention was paid to introduce flexible and expandable communication structures reaching all the way to the safety systems. The requirements were met with the help of SICK's UE4120 and UE4150 safety modules, which have two additional connections for intelligent safety components, eliminating the need for long cables between the sensors and the control systems.

The interface modules have eight field signal inputs for connecting active and passive, one- or two-channel, safety components up to Category 4.

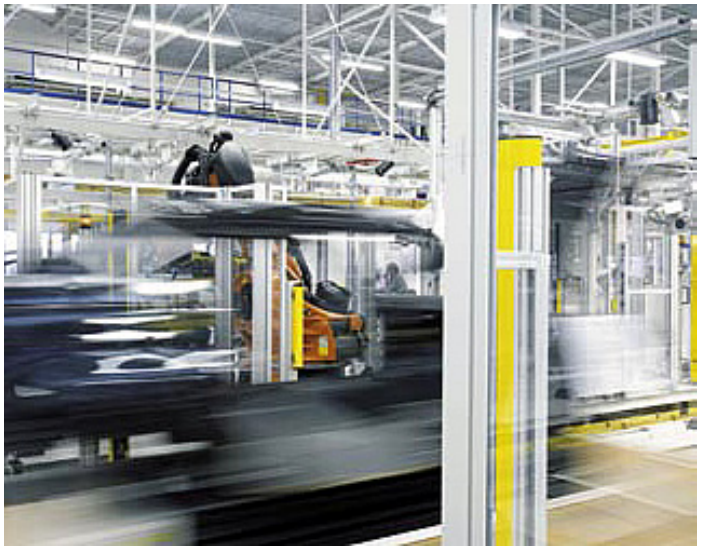
In operation, the UE modules offer maximum system transparency: all connected devices can be directly contacted, analyzed and visualized via PROFIBUS. If the results of the

remote diagnosis indicate a need for device replacement, a sensor's stored parameter data can automatically be transferred to the new device, minimising downtime.

The interface modules make it possible, among other things, to integrate numerous S3000 safety laser scanners and MSL-Z multibeam photoelectric safety switches directly into PROFIsafe communication structures on the final assembly line.

In addition to savings on interface hardware and installation, the connection and monitoring of decentralized safety functions increases process efficiency. At the same time, the system permits easy plant expansions or changes.

BMW has also exploited the advantages of intelligent interface technology at its US works in Spartanburg, for production of the X5. **SICK**



BRAZIL/ SUGAR: Alvorada do Bebedouro Sugar and Alcohol Unit, located in the municipality of Guaranésia, Minas Gerais state in Brazil, started this year the production of VHP (Very High Polarization) sugar, a raw material for the food industry. With a goal of 106,250 tons of sugar exports up to 2009, it invested R$ 60 millions in the expansion of its Crushing, Steam Generation, Juice Treatment, Evaporation and Sugar Plant plants.

Smar Application Engineering, coordinated by the Application Engineer Leonardo Mansur Pinheiro, along with the ABAA unit

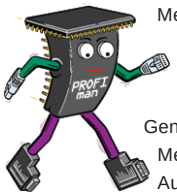
technical team, chose to use PROFIBUS for plant communications. The main factors leading to this choice were the high degree of acceptability and credibility of PROFIBUS in the market, due to its open, interoperable communications that work with multiple suppliers, and also easy installation and simple configuration and architecture.

The automation system chosen was the Smar System302-7, which combines connectivity flexibility with specialist administration, quality and maintenance systems including MES (Manufacture Execution System) and ERP (Enterprise Resource Planning).

A fuller version of this case study can be viewed online here

PI World

USA



Meet PROFIman, one of the stars of the PTO's 13th Annual General Assembly Meeting held August 1st and 2nd. The GAM began on July 31 with a Welcome Reception. Wednesday and Thursday were then filled with presentations and meetings to provide vendor and user members with updates, news and networking possibilities. Experts and magazine editors also attended. Two free training classes also took place. The first was an PROFINET IRT class while, all-day Tuesday, the west coast PROFINET Developer Workshop was conducted, targeted at device manufacturers to assist them in speedy development of PROFINET products.

WHY USE A FIELDBUS? - LISTEN CLOSELY: PTO has just published an AUDIO White Paper in MP3 on this topic. **Find it here**. It's real simple to listen to, and it's a great way to learn in a spare 5 minutes. If there's positive feedback PTO says it will find more topics to audio-ize in due course.

BRAZIL

Training for integrators of PROFIBUS was carried out in July. There were 24 participants in the classes, including users such as PETROBRAS, Bayer, DaimlerChrysler, Embraco-Whirlpool and Plant Zilo Sugar. The concepts and theories of fieldbus networks were covered, along with a practical vision of the technology. Topics covered included: communication in automation; levels of control and industrial communication; basics of the field networks; standardization; management of devices; installation, cabling and topology. The instructor was Doctor Dennis Brandão, Mechanical Engineer with specialization in Industrial Automation. Currently he is a teacher in the Industrial Automation sector of the Electric Engineering Department of the Engineering School of São Paulo University.

PI World

UK

The PROFIBUS International Conference and Exhibition in June was an excellent reflection of the mood of the industry. The keynote presentations by Enpure were well attended, and their advice keenly sought. A major discussion topic was the growing capability to monitor and diagnose plant problems and automatically raise maintenance / repair orders within a computerized maintenance management system (CMMS). The value of this can be judged from statements such as : Plant maintenance can be equivalent to 67% of net profit, according to DuPont, or: Just the unnecessary work carried out on plant can be the same as the net profit, according to Dow Chemical. The Exhibition highlighted the many products now available. Bob Squirrell, UK PROFIBUS Chairman, reminded the conference that there are over 20M PROFIBUS nodes operating around the world, and 2.8 Million PROFIBUS-enabled devices on process plants. A draw was held for book prizes and two Certified PROFIBUS Installer courses donated by the PROFIBUS International Competence Center at MMU. Plans are in hand for another event next year - check **www.profi-bus.co.uk**

ITALY

In April, PNI (PROFIBUS Network Italia) organized its first 'PROFIBUS and PROFINET' seminar and show, in Pescara. This was the first of a series of events that PNI will organize during 2007 with the aim to inform system integrators, end-users, OEMs and machine builders about PROFIBUS and PROFINET. PNI plans to visit different cities and has a target of 40-50 visitors per event. At Pescara a special session was presented by Dr. Paolo Ferrari of the Italian PROFIBUS Laboratory at Brescia. A 'panorama' of new products was shown and the real availability of equipment based on PROFIBUS / PROFINET was demonstrated. A mini-show was organized by members Auma, Camozzi, Endress Hauser, Gefran, Pepperl&Fuchs, Phoenix Contact, Saia Burgess , Siemens, VIPA and Woodhead. Case studies of PROFIBUS applications were presented by Gefran, Saia Burgess, Phoenix Contact and Woodhead.

SOUTHERN AFRICA

The Chairman of PI Edgar Küster (below right) was among more than 100 guests in Johannesburg and 80 guests in Durban who attended PROFIBUS 'breakfasts' recently. During his presentation the PI Chairman emphasized that PROFIBUS and PROFINET are the only fieldbus solutions that can be

used in all fields of application, factory automation, motion control and process automation. Küster, in South Africa for the Process Show 2007, also announced that the number of installed PROFIBUS nodes had exceeded 20 million for the first time. In 2004 when PROFIBUS first passed 10 million, PI said that it expected to double the figure in four years. "In fact it took just 40 months," stated Küster. Chairman of the local PROFIBUS User Group Dieter Dilchert (shown center) also attended. UIC of Durban was welcomed as the first Accredited PROFIBUS training company in South Africa. To promote the need for accreditation of installers, Michael Bean from the PROFIBUS Competence Center showed some of the pitfalls of installing fieldbus systems wrongly. Guests were amused to see photographs of incorrectly installed devices and the simple but costly solutions involved if applied later. The booth at the 2007 Process Show showed working models of PROFIBUS DP, PROFIBUS PA and PROFINET, and was intermingled with product presentations from 17 vendors. **southernafrica@profibus.com**

POLAND

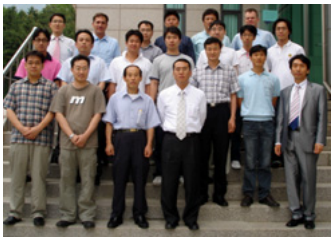
In June 2007 the first PROFIBUS Product Developer Training took place in Gliwice, Poland. It was organized by the Polish PICC, INTEX, and run by

Pictured above are (from left to right): Peter Fredehorst (profichip), Artur Szymiczek (intex), Pietro Zappa (intex), Lothar Schroettel (profichip)

Peter Fredehorst (Application Engineer) and Lothar Schroettel (Sales Manager) from Profichip GmbH, Germany. In the one day sessions 12 engineers were taught how to start a PROFIBUS product development. The main topics covered were software and hardware design of an integrated PROFIBUS interface, the differences between DP-V0, DP-V1 and DP-V2 protocols, PROFIBUS ASIC´s from Profichip, RS485 physical interface design and PROFIBUS tools.

KOREA

Also in June, the first PROFIBUS Product Developer Training took place in Seoul, South-Korea. The event was organized by the Korean PROFIBUS Association managed by Mr. Young-Sik Cha, and was again run by Peter



Fredehorst (Application Engineer) and Lothar Schroettel (Sales Manager) from Profichip GmbH of Germany. 17 engineers participated (see picture).

PI Network

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