PROFINEWS

ISSUE 41

DECEMBER 2004

(For your convenience we have linked the above headlines to their respective pages. Just click the 'hot spot')

GERMAN AUTOMOTIVE COMPANIES BACK PROFINET

Addressing the PI press conference at SPS/IPC/Drives are (standing, left) Franz Zurl of BMW and (right) Wolfgang Kochs of DaimlerChrysler

Four leading German automotive companies have stated their commitment to PROFINET, the Industrial Ethernet standard of PROFIBUS International (PI).

Speaking at a breakfast press conference at the SPS/IPC/Drives fair on November 24, 2004, representatives of Audi, BMW, DaimlerChrysler and Volkswagen said that the announcement will encourage supplier companies to introduce PROFINET-based systems quickly to meet the requirements of next generation automotive plants.

The target is a fixed, uniform protocol that is neutral with regard to the manufacturer and user and which has an integrated safety technology. Standardization of engineering tools is also required.

The four companies make up AIDA, the **A**utomation **I**nitiative of German **D**omestic **A**utomobile manufacturers. AIDA sees that a common Industrial Ethernet environment is a way to ov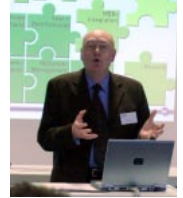ercome the challenges of future automation systems. PROFINET is also supported by the INTERBUS Club. Together, PROFIBUS and INTERBUS have nearly 20 million fieldbus devices installed, roughly 75% of the world market.

Edgar Küster, Chairman of PI, said: "I believe this is an exciting moment in the history of automation as it offers the chance to eliminate differences and focus on end user benefits. The job of the integrator and user will be much easier and costs will be reduced. PROFINET embraces legacy fieldbus systems easily, so it protects existing investments. And of course, being TCP/IP based means that integration into IT infrastructures is immediately possible. Everybody is a winner in this new automation world and I invite once again other major fieldbus solutions providers to join us in our mission."

PI Chairman Küster: "Everybody is a winner in this new automation world."

Bryant: "I believe AIDA's lead will be followed worldwide"

Mike Bryant, PI Deputy Chairman and Executive Director of the PROFIBUS Trade Organization in North America added: "This decision by key players in the European automotive market sends out a powerful signal. My assessment, based on our experience of the PROFIBUS market 10 years ago is that AIDA's lead will be followed by automotive manufacturers worldwide, including I believe in North America."

PHOENIX CONTACT GAINS THE 1000th CERTIFICATE

Phoenix Contact was presented with the 1000th PROFIBUS certification Certificate at the SPS/IPC/Drives Fair in Nuremberg in November, for their PROFIBUS-based Fieldline product. The Certificate was presented by PI Chairman Edgar Küster at the AIDA breakfast press conference.

Roland Bent (left) and Christian Gemke, both from Phoenix Contact, with the 1000th PROFIBUS Certification

⊳ PROFIsafe UPDATE

PROFIsafe PROFILE VERSION 1.30

Working Group 12 of the TC65C in the IEC is currently standardizing several protocols for secure transfer for fieldbuses based on IEC 61158, including PROFIsafe. Alongside this work it was useful to introduce an improved and more compact representation of the PROFIsafe slave interface, which facilitates an IEC-compliant classification into protocol and services.

Starting in July 2005, the certification of PROFIBUS DP devices expects and checks for the 'Identification & Maintenance Functions' in accordance with PROFIBUS Profile Guidelines, Part 1 (PNO order no. 3.502). The respective notes have been implemented in PROFIsafe Profile V1.30.

The draft version 0.99 of the PROFIBUS Profile Guidelines, Part 3: 'Diagnosis, Alarms and Time Stamping' has recently been made available. It describes the more uniform and user-friendly application of PROFIBUS diagnostics resources in field devices. (PNO order no. 3.522).

PROFI**safe** ENVIRONMENTS, VERSION 1.1

The member companies and acceptance offices participating in PROFIsafe, including BIA and TÜV, agreed that branches and spurs are not allowed in PROFIBUS systems with safe PROFIsafe communication. This agreement has now been entered in the new version 1.1 of the guideline 'PROFIsafe - Requirements for Installation,

Immunity and Electrical Safety' (order no. 2.232).

DEMO MODEL AND NEW DEVICES

At the Hannover Fair, it was possible to show a significant expansion of the existing PROFIsafe demo model: a machining cell with one drive with integrated safety. It was possible to show the 'Monitored low speed' function with opened doors. Access to the cell was monitored on the input and output side by the innovative 'Laser scanner portal' safety application and the movements in the cell were monitored using a light grid with a 'Floating Blanking' function. The demo cell was extended, showing 'PROFIsafe goes PROFIdrive', and presented at the recent SPS/IPC/Drives fair in Nuremberg.

The major steps involved in the planning and use of PROFIsafe products have been recorded on video and are available on DVD in English, French, German and Chinese. DVDs are available from the supporting companies Beckhoff, Bosch Rexroth, Leuze-Lumiflex, SICK, Siemens, Turck and WAGO.

Today there are at least 12 provider companies for PROFIsafe products.

DEVELOPMENT AND TEST TOOLS

During the starting phase of PROFIsafe, a consortium of companies pushed ahead with the joint development and testing of the 'PROFIsafe Driver for

Slaves' software. This is now available for purchase as part of a 'PROFIsafe Starter Kit' version 3.2.1 (CD-ROM).

To facilitate device development, it is now possible to obtain a 'PROFIsafe Layer Tester' version 1.2.1 (CD-ROM) from the ComDeC Test Center after registering a certification. It allows for automatically checking the PROFIsafe protocol by means of 'Test-to-pass' and 'Test-to-fail' communication patterns.

PROFIsafe FOR PROFI**drive**

A working subgroup of PROFIdrive in PI will shortly complete an addendum to the profile in which specific safety functions in drives are described and mapped to the PROFIsafe data transfer.

PROFIsafe ON PROFINET

The kick-off meeting for "PROFIsafe in PROFINET" took place on June 29, 2004 with the participation of numerous companies. The work of a core team was started in July 2004. Due to the 'Black Channel' capability offered by PROFINET, a rapid development of the profile expansion is expected. A draft specification is expected by Hannover Fair 2005, after which there will be a review period. The final spec. is expected in Q3/05 and first pilot applications will appear by the end of 2005.

PROFI**safe** REACHES 80,000

More than 80,000 PROFIsafe devices are now installed around the world, in 11,000 safety systems.

⊳ PI NEWS

PROFILES FOR IDENT AND WEIGHING & DOS**AGE**

PI has released two important profiles for PROFIBUS-based ident and weighing&dosage systems. These break new ground by defining 'proxy function blocks' containing a standardized interface and communication mechanisms. The blocks have been specified in accordance with IEC 61131-3 so they can be easily ported between control systems.

Tracking systems based on transponders and barcodes are widely used today but devices from various manufactures are

not compatible. The situation is similar for weighing and dosing systems where there are currently no international standards for weighing types.
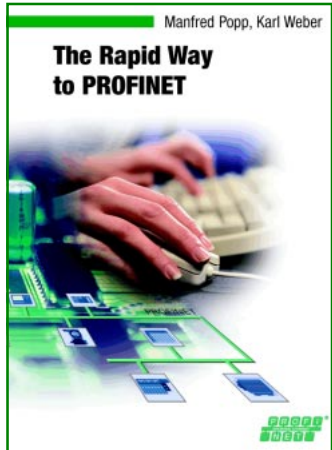
Both systems place high demands on communication, since they have task-oriented cyclical demands and acyclic requirements. By creating the new profiles PI aims to ensure interoperability between applications and PLC programs.

The goal is the full interoperability of products from different manufacturers, which will result in substantial savings in engineering, together with benefits in tendering procedures.

Our picture (above) shows the live multi-vendor demo system on the PROFIBUS booth at SPS/IPC/Drives 2004.

⇥ PROFINET UPDATE

NEW BOOK MAKES SPEEDY PROMISE

PI has published the first technical reference book for PROFINET. The authors are Manfred Popp and Dr. Karl Weber from the PROFINET Competence Center ComDeC in Nuremberg, Germany.

The 'Rapid Way' covers the complete PROFINET knowledge base, including installation technology, realtime communication, network management and functions for web integration. Both PROFINET IO (for decentralized peripherals) and PROFINET CBA (for modular distributed automation) are covered in detail. The proxy concept by which existing automation systems can be integrated is also included.

'The Rapid Way to PROFINET' will appeal to the development departments of field device manufacturers as well as technically-oriented users, who can use the book to build their expert knowledge without having to study the standards.

The book is available from PI in German and English. The price for members is Euro24.00 and for non-members Euro48.00.

FLYER DESCRIBES 70 PROFINET PRODUCTS AND SERVICES

This new flyer carries details of the 70 PROFINET products and services now available from PI member companies. The number is expected to rise rapidly by Hannover Fair (April 2005). Download your copy from www.profibus.com

TRANSLATIONS

The PROFINET System Description is now available in Japanese, French and Chinese. They, and the German and English versions, are all available for free download from www.profibus.com

DATA SECURITY

The **Data Security Working Group** is well on its way to producing a solution for ensuring the integrity of PROFINET-based systems. The Security Guideline is completed and discussions are due to start soon with NAMUR, VDMA, ZVEI and ISA (SP99).

ISOCHRONOUS CHIP DEMO'ED

The unique ERTEC400 chip-based Ethernet switch, which forms the basis for PROFINET's isochronous realtime (IRT) technology, was demonstrated at SPS/IPC/Drives in November. A matrix of 9 x 6 motors (see picture) showed absolute synchronization, even when the TCP/IP open channel was carrying a live video feed and a large volume of simulated data traffic. The cycle time was 1mS, which would be able to synchronize up to 150 motors with a network load of about 50%. Motion Control Working Group leader Walter Moeller-Nehring (pictured) said that machines perfom even better than expected. PROFINET Bench tests of up to 75 channels in a cycle time of 0.5mS have proven the effectiveness of the ERTEC 400. Now, intensive performance testing is being carried out. Production ERTEC 400 volumes are expected in Q2/05.

⇥ MORE PI NEWS

I&M FUNCTIONS TO ARRIVE IN **OCTOBER 20**05

Starting in October 2005, PI is introducing new functionality for all PROFIBUS devices with an acyclic communications channel, under the term "Identification & Maintenance (I&M) Functions".
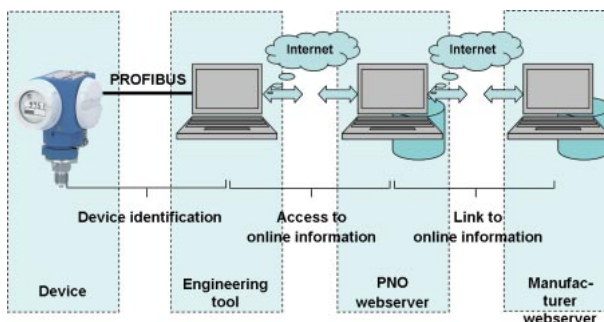
I&M Functions will be of particular benefit to system operators because they specify how key device data are unambiguously stored in PROFIBUS devices. Engineering tools can then read these and interpret them via a key that can be accessed on the PROFIBUS server.

I&M Functions also link device-based information with daily-updated information for each individual device via the Internet, providing the potential for rich asset management.

I&M Functions offer room for profile-specific as well as manufacturer-specific expansions. Part of the device-specific basic information is a unique identifier based on the manufacturer's identification, the order designation of the device and its individual serial number. Other information includes hardware and software release numbers as well as the assignment to a specific profile. Backup code can support non-proprietary audit trailing, i.e., the control and tracking of process parameters in pharmaceutical or safety systems.

Manufacturers of PROFIBUS devices can register with the PI Support Center to obtain an ID and gain access to the I&M configuration area on the PROFIBUS web server. Existing HART IDs can be used.

⠺ AROUND THE WORLD

FRANCE

France PROFIBUS and its members organized 2 technical conferences in Paris and Lyon, on the 20th and 21st of October 2004. These conferences have gathered together almost 100 attendees. The topics handled – PROFINET IO and CBA – FDT/DTM – PROFIsafe – were all supported by demo boards featuring members' products and systems. Numerous questions were asked during the discussions, demonstrating the assembly's true interest in PROFIBUS and PROFINET.

JAPAN

Japan PROFIBUS Organization (JPO) reports a very busy recent few months. A series of introductory seminars for beginners has been held with hands-on' demos. There was an implementers seminar for PROFIBUS DP in October. Harting has joined the PROFINET Working Group in Japan, bringing the number of members up to 14. New documentation includes the PROFINET system description in Japanese, 'The new Rapid way to PROFIBUS DP' in Japanese, a new Japanese PROFIBUS catalog, a PROFIBUS installation and cabling guide in Japanese and a new PROFIBUS/PROFINET product guide in Japanese on CD-ROM. The Japan web site now has many more news items and a brand new case study about the oil transfer system in Chubu International Airport. In November, JPO attended the Manufacturing Open Forum Japan 2004, where about 20 Industrial consortia discussed their current status and the possibility of cooperation. JPO presented PROFIBUS and PROFINET with live demonstrations. Next in line is SEMICON Japan 2004 in Chiba, which is the biggest semiconductor exhibition in Japan. JPO has attended this exhibition for 5 years in a row and will show PROFIBUS controlled by different masters, PROFINET CBA and IO, and members' products. A PROFIBUS/PROFINET seminar is planned for February 2005.

⠺ EVEN MORE PI NEWS

3 MILLION DEVICES **SOLD IN** 2004?

With figures for the last two months of 2004 still to come, the number of PROFIBUS chips sold so far in 2004 exceeds 2.5 million. PI anticipates the final figure may reach 3 million, which will mean that:

⠺ 2004 saw the total number of installed PROFIBUS nodes increase by more than 30%.

⠺ more PROFIBUS fieldbus devices were probably sold in 2004 than all the other fieldbus types put together!

⠺ PROFIBUS is well on its way to reaching its target of 20 million installed devices by 2008.

⠺ PROFIBUS and INTERBUS together have now sold 20 million fieldbus devices. Think what that means for PROFINET!

And finally ...

⠺ it is estimated that 1.6 million PROFIBUS devices are used in process automation, 4 times more than any other fieldbus.

NEW PROFINET COMPETENCE CENTER

PROFIBUS International (PI) has awarded Softing the status of a PROFINET Competence Center (PCC). Softing has been actively participating in the PI's various PROFINET Working Groups. The Softing PCC covers all the latest aspects of PROFINET —from providing protocol stacks and integrating an interface into an automation device through to setting up a plant. Training courses and consulting are also available, plus engineering services for the development of hardware and software components. **Softing: +49 89 456 56 340 or www.softing.com**

⠺ PRODUCT

AUTOMATED WEIGHING ON PROFINET

Siwarex CS (Compact Scale) is the first electronic scale in the world to communicate over PROFINET. The module is connected to the new PROFINET 1M151-3PN header module of the Simatic ET200S distributed I/O station and can be used for level weighing, platform and crane scales and force measurements. Standard engineering tools and software packages enable users to create their own weighing applications easily. **www.siemens.com/ siwarex**