

PROFINEWS

PROFIBUS & PROFINET news from around the world

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Industrie 4.0, IIoT, OPC UA, & PROFINET

by Carl Henning - Monday, November 28, 2016

<http://profinews.com/2016/11/industrie-4-0-iiot-opc-ua-profinet/>

The SPS/IPC/Drives Show just closed its doors and I must say it was an exciting show. Of course, Industrie 4.0 and IIoT dominated the fair from the 30 thousand foot view, but the terms tend to be too vague and everyone has their own views about what these describe. On the other side, TSN (time sensitive networking) is a technology that created a lot of buzz at the fair as well and one could get the feeling, TSN is ready to be used in your plants. While certainly TSN is a very promising technology to bring deterministic behavior to standard Ethernet, it is promoted mainly by those, who lack this feature in their Industrial Ethernet solution. For PROFINET, we can use IRT for deterministic motion control while still allowing other Ethernet traffic. So, this will not bring us any closer to Industrie 4.0.

Another contender for the biggest hype at the fair was OPC UA. And with this one, I fully agree. OPC has proven numerous times that it can provide vendor independent access to data in your shop floor. At PI we have preached for a long time that OPC UA is the way to get your data to Condition Monitoring, Asset Management, or any other IT System. Whether in the cloud or in your plant, it doesn't matter. So it is good to see that others are jumping on the bandwagon as well. But you don't need to wait until TSN is ready, as some of them suggest. OPC UA as it is today already provides value. And there it is again: The PROFINET advantage. While most of the other Industrial Ethernet Systems propose it as an additional system from the controller up only, at PI we believe that there should be only one network. PROFINET provides the infrastructure; the user decides which protocols to use on this infrastructure. Just one example: Using a welding robot in your plant, it is controlled by a PLC most certainly. This is done by PROFINET. But this robot can provide condition monitoring data as well. This can be done by OPC UA over the same network as the PLC is communicating PROFINET.

But wait, there's more. While real time communication is certainly necessary in your plant, it doesn't really matter whether you use IRT or TSN in the future. The real value for the user is in the data. If you want to create new business models e.g. by using Big Data Analytics you need first of all data. That's a no brainer. What's more surprising is that people tend to judge a network by the speed or other technical means. They should judge a network by the quality of data they get from it. Because the more information you get from the field level, the better your analysis will be in the end. This is why PI puts a lot of emphasis on Application Profiles. At the fair, we just released the Asset Management Data Record. With this little helper, you get all the Identification and Maintenance Data of your devices in a meaningful and well-structured way. It is cross-vendor and without effort of course. Useful data is what will enable Industrie 4.0 applications in the end. Within PI this is where we put our focus to deliver the best value network to our users.

I wish everybody peaceful holidays and a quiet time to spend with your families.



Karsten Schneider

PI Chairman

SPS Show Overview

by Carl Henning - Monday, November 28, 2016

<http://profinews.com/2016/11/sps-show-overview/>

The PI Booth at the SPS/IPC/Drives Show hosted hundreds of show visitors seeking information on PROFINET, PROFIBUS, and IO-Link. Trade press editors flocked to the PI Press Conference on Wednesday morning for additional news.

PI Booth

The 3,500 sq. ft. booth was themed “PROFINET – the Backbone for Industrie 4.0.” It featured:

- New PROFINET machine demo
- 36 member kiosks
- PROFINET product wall
- IO-Link wall with 220 devices from 48 manufacturers
- New process automation demo
- PROFIdrive demo
- PROFIsafe display
- PROFInergy display

Around the booth (click to enlarge):

The desktop cellphone holder maker produced Lot Size of One products specified by the show visitor. Here it is in action:

[YouTube Video](#)

SPS/IPC/Drives Show



“As

in the past, the strong focus on business that has become one of the hallmarks of SPS IPC Drives was clearly evident among the booths at its 27th edition. The event further solidified its international standing by featuring 523 companies from 44 countries besides Germany,” said the show manager.

Key figures at a glance:

- Exhibitors: 1,601 (2015: 1,668)
- Exhibition space: 1,315,350 sq ft - 122,200 sqm (2015: 122,800 sqm)
- Visitors: 63,291 (2015: 64,386)
- Industrie 4.0 was highlighted and many booths displayed their companies’ connection to Industrie 4.0 and OPC UA.

Next year’s event will be held from November 28-30, 2017 at Nuremberg’s exhibition center. American visitors will be pleased to note that next year’s show is the week after Thanksgiving.

Press Conference

PI traditionally hosts a press conference on the Wednesday of the show. This year’s news included:

Asset Management

As the growth of PROFINET continues, new customer requirements for additional Asset Management functions have been incorporated. Added is the ability to record assets to make maintenance and

operation easier despite increasing complexity of processes and related machines.

See the details in this PROFINETS article, [Asset Management with PROFINET](#).

Industrie 4.0

Use cases have been created and development continues in the Industrie 4.0 Working Group. The combination of requirements and technical possibilities has resulted in a focus on the following main areas:

- TSN
- IPv6
- Semantics
- Security
- OPC UA

Read more in [First Results on the Way to Industrie 4.0](#).

Process

PROFIBUS has long been successful in connecting process devices and providing configuration and diagnostic information from them and to them. With increasing needs for these latter functions, the increased bandwidth of Ethernet is needed. Enter PROFINET. PROFINET is already used widely as a network backbone in the process industries, but further standardization is desired. PI in cooperation with NAMUR is doing just that.

See the article [New Process Automation Profile 4.0](#) for more.

IO-Link Test Centers

With the continuing growth of IO-Link, support has been expanded from the five IO-Link competence centers to include three IO-Link test labs. [Press release](#)

PROFINET testing update

The automatic test tool for PROFINET continues to automate test procedures. It's available as a free download for members. [News](#)

CC- Link cooperation

The CC-Link Partner Association (CLPA) and PROFIBUS & PROFINET International (PI) have delivered on their announcement to allow easy interoperability between CC-Link IE and PROFINET - as the new joint specification is released at SPS/IPC/Drives 2016. The new specification builds on an initial announcement at 2015's fair, where both network organizations promised to maximize the transparency between the two protocols. Both the CLPA and PI completed the new specification within just one year to

respond to users' requirements. [Press release](#)

At the PI Press Conference (click to enlarge):

An informal account of the show is available on the [PROFiblog](#) with additional photos and videos.

New Process Automation Profile 4.0

by Michael Bowne - Monday, November 28, 2016

<http://profinews.com/2016/11/new-process-automation-profile-4-0/>

Today, the field devices in processing plants, flow control, pressure and temperature, for example, but also the actuator technology are controlled either by 4-20 mA signals or by fieldbuses - such as PROFIBUS. They have proven well in their application for many years. On account of Industrie 4.0, the requirements to be met by the communication systems will increase further, however. Today, field devices do not provide one but a number of measured values; for the configuration numerous parameters are available, and devices transmit detailed diagnostic information about their condition. But, the inclusion of the devices in Asset Management Condition Monitoring or other IT systems require higher bandwidths and Ethernet support.

With PROFINET, PI (PROFIBUS & PROFINET International) offers already today a system, which is not only widely spread in manufacturing automation. In process industry also it is used, for example, for the linkage of Remote I/Os or motor management systems.



"Close cooperation between manufacturer and user organizations beginning at the early phase of a new technology unleashes great synergy potential. This provides the best opportunity for introducing a new technology, both cost-effectively in production by the supplier and efficiently at the plants of the user."

-Michael Pelz, head of Namur Working Area 2
"Automation Systems for Processes and Plants"

At an early stage, PI along with users, such as NAMUR, started to intensively work out how PROFINET can be deployed in all areas of the process industry. Very quickly it became clear that PI can offer with PROFINET a complete solution package. Apart from the excellent performance available already today and the extensive diagnostic functions of PROFINET, the device integration was enabled for PROFINET as well, using the Field Device Integration (FDI) technology. Now, the PA profile is rendered available for PROFINET for the first time in a new version, and thus fulfills an important demand of the users. The use of PROFINET has to be easy for all users. This is a significant requirement of the new PA profile.

After the requirements have been discussed with manufacturers and users in a first step, PI is now specifying the technical solution. Completion of the new profile is planned for 2017.

First Results on the Way to Industrie 4.0

by Michael Bowne - Monday, November 28, 2016

<http://profinews.com/2016/11/first-results-on-the-way-to-industrie-4-0/>

To continue a practice-oriented further development of PROFIBUS and PROFINET, a deep understanding of users' requirements with respect to *Industrie 4.0* scenarios is needed. For this reason, use cases have been developed, assessed and harmonized first in the working group. In the next step, an investigation was carried out of any new communication technologies and standards in the environment of *Industrie 4.0*.

The combination of requirements and technical possibilities has resulted in a focus on the following main areas:

TSN

The integration of TSN aims for defining an ideal image of PROFINET on TSN. The advantage of PROFINET will be its participation in the technical progress of standard Ethernet technology.

IPv6

With respect to IPv6, the characteristic features of auto-addressing and name concept play an important role. At present this is being developed through a corresponding concept.

Semantics

The Semantics Team has given itself the objective of integrating existing PROFINET features into any future standard, while also selecting the most important definitions from underlying standards like eCl@ss and Automation ML.

Security

In case of Security, the security features are defined by means of requirements and use cases. These are being investigated in addition to the existing [Security Guideline](#) from PI.

OPC UA

The possibilities of using OPC UA are being determined in cooperation with the OPC Foundation. As for PROFINET, TCP/IP communication has always integrated in parallel, therefore PROFINET offers a lot of flexibility in this area.

Currently these topics are discussed in the sub-group teams that have been set up. The solutions established are being issued in white papers and concepts. Even with a high level of involvement from the

working group members, time is needed for creating detailed preparations of sensible and practice-oriented standards. The first white papers are expected for Hannover Fair 2017. Through the I4.0@PI working group's investigations, it can be determined already today that the available PI technologies are and remain a sound basis, but also enable a future-proof step.

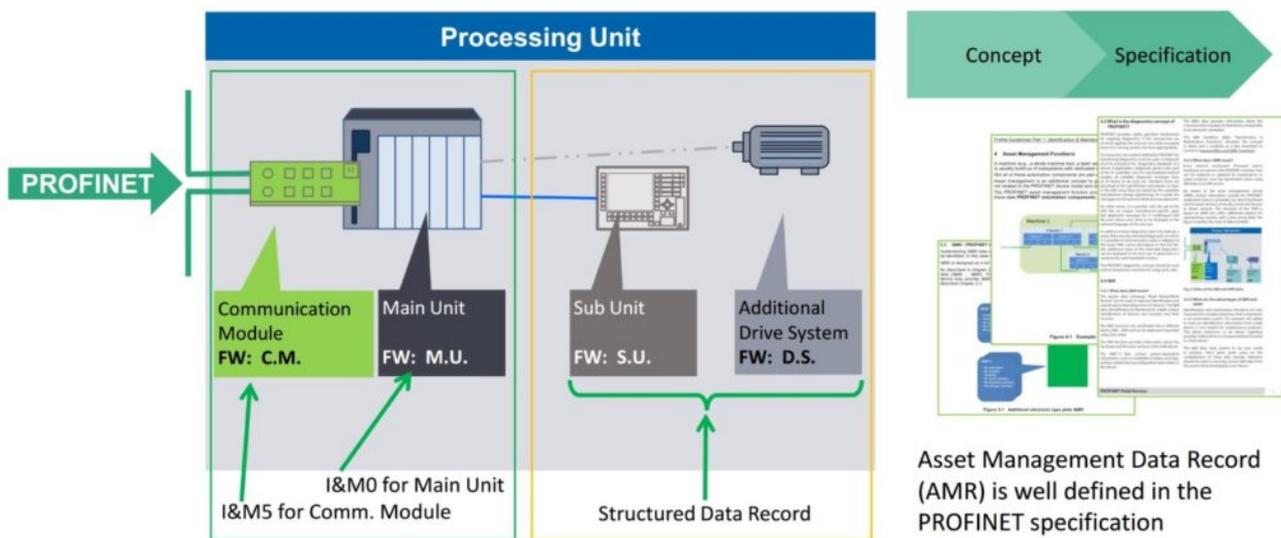
Asset Management with PROFINET

by Carl Henning - Monday, November 28, 2016

<http://profinews.com/2016/11/asset-management-with-profinet/>

Process protection by means of Asset Management with PROFINET

As the growth of PROFINET continues, new customer requirements for additional Asset Management functions have been incorporated. Added is the ability to record assets to make maintenance and operation easier despite increasing complexity of processes and related machines.



After a precise clarification of the requirements with users, the PROFINET specification has been expanded by the Asset Management Record function after a concept phase. A digital fingerprint of the plant is now available. Together with the Identification & Maintenance data already proven for PROFINET devices, an extensive registration of devices and machines is possible, even if they are not part of the PROFINET environment. A simple acquisition of hardware and firmware statuses, installation locations, etc. is necessary in order to confirm a suitable device installation during startup or upgrading. In addition, the respectively used firmware drivers can be checked in this way so that the necessary and approved assets are used for the respective work process. On account of the open TCP/IP communication, this data is not only accessible by a PLC, but additional tools also can access the data without additional measures. These two aspects of Industrie 4.0 - the precise data specification and the simple access from the outside - are thus implemented already today in Asset Management with PROFINET. Qualified machine-readable data only, which are defined cross-vendor, lead to reduced efforts during asset management and to a concrete benefit of Industrie 4.0 applications.

Details on the functions are described in the PROFINET specification as well as in the known developer documents, such as in the [“PROFINET Field Devices Recommendations for Design and Implementation”](#). These documents are available for free download by members at www.profinet.com.

Tech Tip: PROFINET on Switched Networks

by Carl Henning - Monday, November 28, 2016

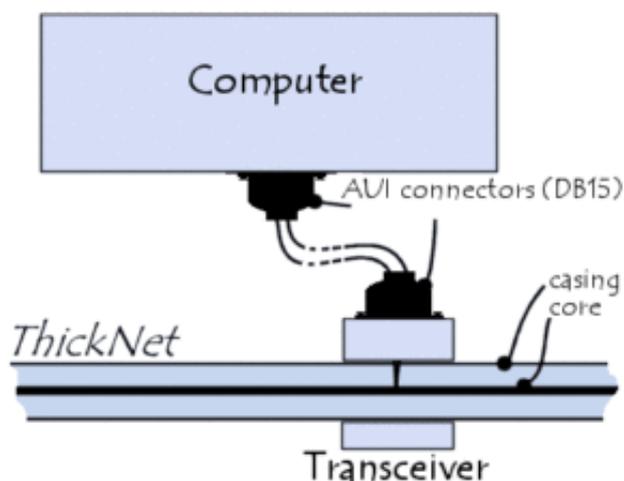
<http://profinews.com/2016/11/tech-tip-profinet-on-switched-networks/>

In the early days of Ethernet, collisions on the network prevented its use in deterministic industrial applications. If two stations tried to transmit at the same time, a collision would result. The collision was detected and each station “backed off” a random time and tried again. This approach was fine for web browsing and email but prevented determinism. The advent of switched Ethernet networks did away with collisions allowing Ethernet to be applied in industrial automation where determinism was a must. In switched networks any node can transmit whenever it needs to without collisions.

Let’s look at some Ethernet history to see the path to switched Ethernet:

Thicknet

Thicknet, known formally as [10BASE5](#), was the earliest form of Ethernet. Called thicknet because the coaxial cable was stiff and thick. It used CSMA/CD (more on that later). The 10 in the formal name derives from the network speed, 10 Mbit/s.



By Nazanin rahmati (Own work) [CC BY-SA 3.0

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Thinnet

Thicknet was naturally followed by **thinnet** ([10BASE2](#)). Also called cheapernet because thinner cables are less expensive than thicker ones. Also runs at 10 Mbit/s. Early industrial projects used this technology for non-time critical, non-deterministic communications, like among HMIs. Note: requires a terminating resistor at the terminus. Also used CSMA/CD.

Carrier Sense Multiple Access / Collision Detection

CSMA/CD (Carrier Sense Multiple Access / Collision Detection). [Webopedia](#) defines this well as

[A] set of rules determining how network devices respond when two devices attempt to use a data channel simultaneously (called a collision). Standard Ethernet networks use CSMA/CD to physically monitor the traffic on the line at participating stations. If no transmission is taking place at the time, the particular station can transmit. If two stations attempt to transmit simultaneously, this causes a collision, which is detected by all participating stations. After a random time interval, the stations that collided attempt to transmit again. If another collision occurs, the time intervals from which the random waiting time is selected are increased step by step. This is known as exponential back off.

CSMA/CD is a type of contention protocol. Networks using the CSMA/CD procedure are simple to implement but do not have deterministic transmission characteristics.

The last sentence reveals why early incarnations of Ethernet were not suitable for industrial automation – not deterministic. Injecting a random time before retransmitting is not conducive to determinism.

Switched Ethernet Networks.

Switched networks are very different from earlier versions. In fact, the creator of Ethernet, Robert Metcalfe, is reported to have said that people keep inventing entirely new networks and calling them Ethernet.

What we now call Ethernet no longer uses coax; we have 4-wire or 8-wire cables with twisted pairs, using RJ45 connectors (and sometimes M12 connectors in industry). It can run at 10Mbit/s but more commonly at 100Mbit/s with much faster speeds already standardized. Instead of one cable connecting all nodes as thicknet and thinnet did, one cable connects two and only two nodes.

No more non-deterministic shared medium of thicknet and thinnet. In switched networks nodes that pass through messages are Ethernet switches that direct an incoming message to the targeted destination based on the physical address (MAC address) of the source and destination. These Ethernet switches may be standalone devices whose only purpose is to switch... or the Ethernet switches may be built into automation devices.

This video provides insight into how a switched network works.

[YouTube Video](#)

It was the arrival of switched Ethernet that allowed PI to base PROFINET on it. PROFINET over switched Ethernet is deterministic. PROFINET uses one more technique to achieve determinism: PROFINET uses the standard IEEE802.3 Ethernet frame parameter EtherType to direct PROFINET Real-Time (RT) messages from Ethernet to the PROFINET application. This skips the TCP/IP layers which

add variable delays to messages passing through them.

PROFINET achieves determinism over switched Ethernet infrastructure using standard IEEE802.3 Ethernet.

Adapted from the PROFIBlog post: [Switched Ethernet Networks for PROFINET Determinism](#).

PROFIBUS in Steel

by Carl Henning - Monday, November 28, 2016

<http://profinews.com/2016/11/profibus-in-steel/>

*Renovation of the blast furnace at ArcelorMittal Méditerranée
A digital giant in a human affair*

In response to exponential market demand, the annual production capacity at the ArcelorMittal site in Fos-sur-Mer, France, is due to rise from 4.6 to 5.3 million tons of steel. One of the key projects designed to help meet this objective was the refurbishment of blast furnace number 1.

The preservation of this colossal piece of production equipment notably called on new measuring



instrumentation technologies and the standardized PROFIBUS field

network to replace a large proportion of the analog signals. The blast furnace is currently the first digital blast furnace in the world. Endress+Hauser assumed responsibility for the efficiency of the project for the instrumentation lot.

The giant is over 80 meters tall with a capacity of 3,000 cubic meters. The temperature inside the 11 meter diameter crucible is +2,000 °C. Controlling this process digitally means exposing the automation system and instrumentation to extreme conditions.

Endress+Hauser was involved throughout this huge project, from planning through to commissioning.

A solution to the client's problems

"The success of the refurbishment of the blast furnace firstly depended on a very productive design phase. After that, we simply had to get the best companies in their respective fields on board" explains Philippe



Divol, Project Manager at ArcelorMittal.

"Endress+Hauser was able to answer all our questions about the new configuration of the instrumentation in the fieldbus" adds Alphonse Fabiani, Instrumentation Engineer at ArcelorMittal.

Long-standing partners, ArcelorMittal and Endress+Hauser worked together. The overall supply of measuring instruments fulfilled all aspects of the prerequisites, but ArcelorMittal also stood to benefit from the expertise and support provided by the Endress+Hauser teams: experienced professionals in engineering for process automation and project management.

Attentive and jointly liable for the outcome

To satisfy the quality, safety and efficiency requirements when commissioning the instrumentation and the digital network, Endress+Hauser decided to create and enter into a joint venture with two other well known companies, SNEF and Cegelec. Objective of the joint venture was to consider, supply, install and commission the entire instrumentation lot within set time-frames. Teamwork and reciprocal technical or industrial exchanges were at the heart of this consortium. "We needed solutions, not people who would trade accusations of responsibility for mistakes. As representative of the joint venture, Endress+Hauser assumed joint liability for the outcome of the partnership," clarifies Philippe Divol. André Amar, ArcelorMittal Account Manager at Endress+Hauser for more than 26 years, ensured that the changes, sometimes requested by the client at short notice, were implemented quickly. "You could say that Endress+Hauser demonstrated great efficiency and flexibility," says Philippe Divol.

For genuine support



Endress+Hauser Technicians

The specialist technicians at Endress+Hauser commissioned 1,100 sensors directly on the blast furnace and supervised 700 others in the peripheral workshops, such as the gas cleaning system and slag treatment, all connected by the digital network. More than 400 sensors on the blast furnace are connected via PROFIBUS. "In order to reduce the length of intervention and by extension the exposure to risks, all the measuring instruments were prepared and preset in our workshops" adds Luc Reibel, Project Manager at Endress+Hauser. The instruments benefit from long-term service contracts. For its operators, the park is easier to manage thanks to dedicated software such as FieldCare and W@M – Life Cycle Management, a unique tool that provides access to all manufacturer data and the log of interventions on the devices.

For maximum efficiency of the production equipment

The service life of the refractory lining in a blast furnace is 20 years, and over the next 20 years the Mediterranean giant will be operating at full capacity. In fact, Alphonse Fabiani is hoping to draw on all the options made available by the devices connected to PROFIBUS. "It will be possible to perform settings and diagnostics remotely. We will have a predictive – rather than a curative – approach to maintenance. We are handing down future-oriented technology to generations of steelworkers to come."

Many people, one team, one giant

This project is a good example of expertise and teamwork combining to provide a service: after 95 days of downtime, blast furnace number 1 was given a new lease on life. Building on this success, Endress+Hauser has partnered with ArcelorMittal once again to renovate blast furnace number 2 at the Fos-sur-Mer site.

Endress+Hauser services

- Endress+Hauser as Main Instrument Vendor (MIV)
- Project management
- Implementation of platform tests (field network design, PROFIBUS compliance reports)
- Design and provision of measuring instruments (flow, pressure, temperature), namely 1800 instruments installed and commissioned and over 60 km of cables laid
- Fieldbus integration

- Field network verification
- Commissioning
- Training
- Consignment stock

The renovation project in numbers (all trades)

- 450 000 hours of preparation
 - 550 000 hours of intervention on site
 - 1 million working hours
 - 95 days of downtime
 - Around a hundred companies
 - 800 people working every day
-

IO-Link: Did You Know

by Carl Henning - Monday, November 28, 2016

<http://profinews.com/2016/11/io-link-did-you-know-17/>

Did you know that IO-Link does away with the great variety of signals and interfaces on the sensor/actuator level once and for all?

Naturally, sensors and actuators covering a wide range of complexity and characteristics were produced in the past, when there was no standard for an interface with communications capability. Today, the range of sensors and actuators for widely varying tasks in industrial automation covers almost every desired possibility, but at the expense of an unwieldy variety of interfaces with regard to signal shapes and mechanical characteristics. IO-Link bundles up this variety and simplifies the last meter of the sensor-actuator level. The reason is that IO-Link needs nothing more than an M12 plug connection and a standard 3- or 5-wire sensor cable. IO-Link thus replaces interfaces such as binary switching, multichannel binary, bidirectional, analog IN, and analog OUT interfaces as well as proprietary interfaces such as RS232.

As a result, IO-Link uses a single interface to cover the communication requirements of the entire sensor/actuator level, from simple sensors to measuring sensors and from intelligent signaling lights to mechatronic devices such as grippers or even complete valve blocks. And keep in mind: besides the streamlining of the interface and cabling, IO-Link comes with an integrated parameter assignment and diagnostics channel at no additional cost. As a result, additional data from the sensor/actuator level are available that generate significant added value especially in regard to Industry 4.0 applications.

[IO-Link](#)

Regional News - December 2016

by Carl Henning - Monday, November 28, 2016

<http://profinews.com/2016/11/regional-news-december-2016/>

This month there is news from PI UK, PI Germany, PI South Africa, and PI Australia. PI UK is supporting UK's first Industry 4.0 Summit and reports on their recent Manchester seminar. PI Germany celebrates well-attended seminars in 2016 and looks forward to 2017. PI South Africa announces a new PI Training Center. PI Australia in cooperation with University of Technology, Sydney announces a seminar introducing Industry 4.0.

PI UK

PI UK will be supporting next year's Industry 4.0 Summit, the UK's first dedicated conference and exhibition for Industry 4.0. The conference will look at key issues surrounding Industry 4.0, the Industrial Internet of Things (IIoT), smart factories and digital manufacturing, and feature government policy,



strategies, business models, and a

number of Industry 4.0 case studies. PI UK will have a strong presence at this event, where we will be hosting a Round Table discussion featuring our key technologies for IIoT, PROFINET, and IO-Link.

Alongside will be the Factories of the Future Expo, which will showcase the latest technologies and developments in automation, IIoT, sensors, software, industrial networking and big data. [More about the event](#)

PROFIBUS, PROFINET and IO-Link seminar: Attended by over 50 designers, engineers and decision-makers, this free-to-attend seminar, organized by PI UK and hosted by Siemens at their Manchester premises, addressed the key practical issues arising from the use of digital communications technologies in automated manufacturing and process industry applications. Details [here](#)

[PI UK](#)

PI Germany



With more than 650 participants overall PI Germany finished their series of workshops in 2016. PI Germany organized workshops for developers and end user regarding the following topics:

- PROFINET
- PROFIsafe
- PROFIdrive
- IO-Link

The dates for [2017 are already fixed](#). Most of the workshops are in German language and the participation is free of charge.

[PI Germany](#)

PI South Africa

A new PI Training Center (PITC) was accredited by PI in South Africa at Siemens



Proprietary Limited. All PITCs are audited to ensure that they meet the high standards set by PI. The new PITC was audited by Andy Verver. They present the following courses:

- CERTIFIED PROFIBUS Installer Course
- CERTIFIED PROFIBUS Installer with Trouble shooting Course
- CERTIFIED PROFIBUS Engineers Course
- CERTIFIED PROFIBUS Installer with Engineers Course
- CERTIFIED PROFIBUS System Design Course

[PI South Africa](#)

PI Australia

PI Australia will develop an Automation Information Seminar addressing the challenges faced by Australian industry as it transitions to a digital age of industrial innovation commonly referred to as Industry 4.0.

The proposed presentation will feature some of the world's most innovative manufacturing



sites, to show how data from sensors plus plant and machine connectivity can turbo-charge productivity levels.

To be held in the second-half of 2017, it will be viewed by undergraduates studying electrical and automation disciplines such as mechatronics. Students will gain a better understanding of the measurement and communication roles Fieldbus and Industrial Ethernet technologies play in process and manufacturing industries.

"The rate of change in IT and OT technology today is simply mind boggling," said Associate Professor Quang Ha from the School of Electrical, Mechanical and Mechatronic Systems at the University of Technology Sydney (UTS), who will host the first presentation.

"The challenge UTS faces is to prepare our bright young students for a new era of 'smart factories', when automation and data exchange will manifest in manufacturing, relying on cyber-physical systems, the Internet-of-Things and cloud computing."

[PI Australia](#)

New Products - Issue 147

by Michael Bowne - Monday, November 28, 2016

<http://profinews.com/2016/11/new-products-issue-147/>

Click on a headline to learn more

[New Fiber Optic Repeater for PROFIBUS Networks](#)



Belden Inc. has released a new version of its PROFIBUS fiber optic repeater. The OZD Profi 12M G22 allows PROFIBUS networks to communicate over longer distances through fast and reliable fiber optic signals, while also guaranteeing signal reliability through integrated redundancy technology. This new device builds on the proven family of Hirschmann PROFIBUS repeaters with higher signal conversion capacity.

[Connectivity Technology for 24-Volt Power Supply](#)



Belden Inc. - The L-coded M12 circular connector variant, which is internationally standardized through the standard 61076-2-111, will be the future single standard for 24-volt PROFINET devices with circular connectors. The L-coded M12 Power Connectors of the Lumberg Automation brand are approved in accordance with UL and VDE and already meet the future PROFINET guideline, which is expected to be published in April 2017.

[Media Redundancy Protocol Support for IO-Link Masters](#)



Control Corp announced support for Media Redundancy Protocol (MRP) across its full line of PROFINET IO-Link Master products. MRP enables redundant PROFINET communication through a ring topology without the need for switches. In addition to the MRP firmware, The IO-Link Master PROFINET products are IIoT and Industry 4.0 ready with features such as embedded webpage sensor and configuration management.

[PCs to Communicate on PROFINET IRT Over Fiber Optic](#)



HMS Industrial Networks expanded the IXXAT INpact multi-protocol card series with a PCIe mini variant for PROFINET IRT over Fiber Optic. The IXXAT INpact enables easy implementation of a PROFINET IRT Fiber Optic Device interface and can be used in compact industrial PCs as well as in mobile devices. The PROFINET IRT FO connection is made via SC-RJ connectors.

[Industrial Ethernet Switches for Reliable Communication](#)



With its Scalance XC-200 product line, **Siemens** is bringing a new generation of compact Industrial Ethernet switches onto the market. Users can use them to set up electrical and optical line, star and ring structures in industrial networks. The layer 2 network components can be integrated into Profinet diagnostics. The Scalance XC-200 devices are available in different versions with up to 24 RJ45 ports and two ST/BFOC or two SC ports.

[Capacitive Sensors with IO-Link](#)



Turck has announced its BCT capacitive sensors with an IO-Link interface. The BCT meets the requirements of protection type IP67 and is available in four variants: It is available as an M18 variant with a 5 mm standard switching distance and as an M30 variant with a 10 mm switching distance – each for flush mounting. The BCT sensors can be set according to the particular model ordered or by teach buttons/cable.

[Compact IP67 Controller with Codesys 3](#)



Turck has announced its TBEN-PLC Codesys 3 controller as a compact IP67 PLC for controlling small or modular machines. Thanks to its robust housing and high degree of protection, the TBEN-PLC can operate directly in the field and thus enables the implementation of machine and plant controls without the need for a control cabinet. The TBEN-PLC can also be run as a device in Profinet networks, which enables it to be used as a protocol converter. For example, the TBEN-PLC can operate as the CANopen manager of a machine module networked with CANopen and connect this module to a system running with Profinet.

PROFINETS

PROFIBUS & PROFINET news from around the world

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