

PROFINews

PROFINET and PROFIBUS News

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Observations from the SPS/IPC/Drives Fair 2014



In PI's event calendar, SPS/IPC/DRIVES fair always marks a big highlight of the year. The fair's importance is easily recognizable by its continuous growth. Although slightly fewer visitors than in the previous record year, there were more exhibitors present and an additional hall was used for this year's fair.

In the same way, PI was able to attract more and more companies to co-exhibit at our booth in recent years, which led to a very packed booth. This year, our open, inviting booth allowed us to present our PI technologies and new devices from a variety of vendors who support them. The highlight of this year's presentation was our new paper airplane model. Using a modular machine concept, we could emphasize many of the benefits PROFINET offers for machine builders in a fun way.

Other important topics included our presentation for process automation, which showed how PROFINET and PROFIBUS nicely complement each other. It also showed the role FDI will play for device integration. Our PROFINET multi-vendor wall had many new devices. It featured a drive exhibit, underlining the ease of use of PROFIdrive in drives and motion applications in two ways: using the technology in applications and implementing it in products. Today, there are lots of drives available supporting the PROFIdrive profile.

The successful fair was completed by a well-attended press conference focusing not only on PROFINET for machine builders, but also showcasing our recent successes in China. This success is built on three main areas: Standardization, Members, and Customers. PROFINET and PROFIdrive reached the highest level of standardization in China: GB/T. The continuous strong support of our members made the regional association in China the third largest in the world after Germany and North America. And finally, we could present case studies from ABB, E+H, GE Intelligent Platforms, and Siemens demonstrating that PROFIBUS and PROFINET are widely used in China in all kinds of industries.

SPS/IPC/DRIVES fair is not only a highlight of our event calendar. The opening of the Christkindles

Market in Nuremberg right after the fair closed, reminds us of the upcoming holiday season. For us it is an opportunity to relax after a very successful 2014 and look forward to exciting activities next year. I wish you and your families a Merry Christmas and look forward to see you in 2015!

--Karsten Schneider, PI Chairman

SPS Report: PI Stand and More



sps ipc drives

The SPS/IPC/Drives Show was bigger than ever with an additional hall added to the floor plan. Our report begins with a photo gallery of the PI Stand and continues with a highlight of the stand's focal point - a machine to fold and launch paper airplanes. A look around the fair showcases PI members' stands and features photos and videos. This report concludes with all the numbers (size, visitors, exhibitors, and the like).

PI Stand

PROFINET, PROFIBUS, IO-Link, PROFIsafe, and PROFIenergy were featured on the PI stand along with a combined PROFINET and PROFIBUS application wall for process.

This photo gallery will give you some idea of the scale of the stand (click to enlarge and start slideshow):

PROFINET for Machine Builders

Machine builders have long been using PROFINET. At the SPS Fair this year they were celebrated with a machine to print, build, and launch paper airplanes.

Like many real production machines, this one had multiple modules. The three interdependent modules communicated over PROFINET. And each module was controlled by PROFINET. Twelve vendors contributed PROFINET and IO-Link products to the project which was a Masters project for a student team at the technical university of Darmstadt. Student Daniel Freund was onsite to supervise the machine operation. He provided some background on the project. Many months of effort were expended by the three designers and four builders.

Here's a two-minute video look at the controls and the operation:

Of course, it's not just paper airplanes that PROFINET helps build. Read the [app story](#) of the machine builder that helps Boeing build the 787 Dreamliner.

Around the Fair

Siemens and Phoenix Contact produced videos from the fair:

The Numbers: The PI Stand

The stand covered 321 square meters (3,455 sq. ft.) with

- 100 co-exhibitors
- 120 PROFINET devices
- 50 PROFIBUS PA devices
- 140 IO-Link devices
- 13 PROFIsafe devices
- 150 staff for the stand

The Numbers: The Fair

The fair was larger this year in terms of area:

- Exhibition space 117,800 square meters (over a million and a quarter square feet in 11 sprawling buildings)
- Exhibitors 1,602 (one third from outside Germany)
- Visitors 56,787 (down about 4,000 from 2013)

The [PROFIblog](#) features the news above plus some additional background and photos.

Application Story: Bogasari's move from PROFIBUS to PROFINET

To ensure continuous and efficient manufacturing, this Indonesian wheat flour miller upgraded its industrial networks from PROFIBUS to PROFINET to gain visibility over its processes and address issues as they happen.

Taking Production to the Next Level

Bogasari Flour Mills, a division of PT Indofood Sukses Makmur Tbk, is not only the largest integrated flour miller in Indonesia but also the largest installation of its type in a single location anywhere in the world. It has two flour mills – one in Tanjung Priok, Jakarta, and another in Tanjung Perak, Surabaya – and has a daily production capacity of 10,000 tons of wheat, according to Christianus S. Kaluli, Vice President, Technical Support. Its integrated factory in Jakarta alone covers 32 hectares, has 15 mills (Mill A to Mill O), and has rows and rows of massive wheat silos.

Bogasari produces a variety of wheat flour – under the Segitiga Biru, Kunci Biru, and Cakra Kembar brands – for use in the production of noodles, breads, cakes, brownies, and other baked snacks. It is also the largest producer of pasta not only in Indonesia, but the whole of Southeast Asia. Marketed under the La Fonte brand, Bogasari's pasta products – spaghetti, macaroni, and fettuccini, among others – are not only for local consumption but also exported to countries including Japan, the Philippines, and South Korea.

Addressing competition

“Demand has been increasing year-by-year,” says Christianus. “The flour market is growing, not only because of the population growth, but also the changing consumer habits and the growing middle class in Indonesia. People now are eating bread and pasta more. Before, it’s only rice and noodles.”

In line with the continuously growing demand for flour products, more and more companies have established milling operations in Indonesia.

“Currently, there are around 20 flour mills in Indonesia, compared to just three a few years ago – Bogasari Jakarta, Bogasari Surabaya, and Eastern Pearl Flour Mills in Sulawesi,” he explains. “Before, our market share is about 90%; but now, it’s only about 55-60% because of the competition.”

Christianus emphasizes on the importance of product quality to keep up with the competition. “Our main challenge is quality. We need to make sure that the quality is uniform for all the batches of the products, especially now that there are other players in the market. The quality has to be good,” he says. “We are already ISO and GMP certified. We are now working on getting the FSSC 22000 certificate.”

Apart from quality, Christianus notes that capacity is also an issue. “Our Jakarta plant is now more than 40 years old. As our machineries are already old, our capacities are reduced. That is why we need to upgrade some of our systems,” says Christianus, noting that they are now on the process of migrating

their systems to newer models and versions. He says they started this process by upgrading three of their mills in Jakarta to increase their capacity, and improve their yield and efficiency.

From Profibus to Profinet

Bogasari was initially using Profibus as the communications platform for its HMI, controllers and I/Os. Its Mill A, B, and C have various instruments such as flowmeters, which are also running on Profibus.

But Christianus notes that they sometimes have issues regarding I/Os of their field devices. One particular intermittent issue is between the Profibus and the Ocrim milling system. Christianus says previously, if one system fails, the whole network goes down, thereby halting production.

“We are a big flour mill. If we stop even for just one hour, you can just imagine the capacity lost within that period,” says Christianus.

Ato Ansori, Business Development at Java Diamond, a Siemens Partner in Indonesia, worked with Bogasari regarding the system upgrades at its mills. “Regarding migration, we have to know completely what the existing applications are – from the basic applications like the HMI, or SCADA, to advanced applications like reporting, or communications, or interfacing with another software. Sometimes, the engineers do not use standard software, let’s say for PSA. One big issue here is reporting. For instance, WinCC already has add-on tools for reporting, but the engineer prefers to use non-WinCC options. The OEM in fact was using Excel by DDE. If we convert, we will get errors,” explains Ato. To address the above issues, Bogasari worked with Java Diamond to migrate its Profibus network to Profinet.

“The migration was easy,” says Christianus. “After we migrated to Profinet, we will get just message alerts if there are some issues, for instance, 300ms or 400ms of failure, and therefore we don’t need to stop the plant.” Another big advantage was the easy integration of the existing Profibus instruments into Profinet with Proxy technology.

With the migration to Profinet, Christianus says the reliability of the system is higher than before. He notes that now, they can also pinpoint the particular field device that is causing problems in the production. “It made the system more robust and flexible in topology,” Christianus notes. “After the migration to Profinet, the operator now gets the error message easily – which, sometimes could just be a network disconnect. The important thing here is that there are no more production halts or disruptions. If it is a critical operation, then it will be stopped; but otherwise, it will just continue.”

So far, so good

Bogasari and Java Diamond finished the Profibus-to-Profinet migration in December last year. “It’s been more than around six months already. There are many benefits, but one main thing is that with the upgrade, the system has been running smoothly and without disruptions,” says Christianus. “The spare parts are also easier to get.”

On why choosing Siemens solutions, Christianus highlights the fact that one of their main criteria is the automation system itself. “Siemens has good solutions, and being a big company, they can develop the

software and the hardware; and the development is continuous. Secondly, in Indonesia, Siemens is popular. It's easy to get the spare parts. Every region, there is Siemens—Surabaya, Semarang, Medan. That is our main consideration."

Bogasari's parent company, Indofood, also has a lot of Siemens systems installed at its plant, especially the noodle group. "If Siemens systems are good for some processes, we also implement them in the units in other divisions," says Christianus.

This article originally appeared in [Control Engineering Asia](#)

FDI technology used by PI

With the release of the FDI Specification and handover to IEC and the availability of the first version of the developer tool, FDI Cooperation LLC has achieved its primary goal. PI (PROFIBUS & PROFINET International) has participated actively in the various working groups by providing numerous experts and was instrumental in shaping the technology in the interests of its members.

As agreed, the FDI Cooperation will be dissolved at the conclusion of its work (expected mid-2015). However, permanent establishment of the FDI technology on the market will require continuous further development and support. To this end, PI and the FieldComm Group are proposing to join forces under the framework of a long-term cooperation agreement after disbandment of the FDI Cooperation LLC.

The platform and infrastructure for this will be provided by the FieldComm Group. This includes the establishment of working groups for support and management teams for development projects. PI's own experts will be represented in all relevant activities. Both organizations hold equal rights to the results.

Further development of PROFIBUS- and PROFINET-specific parts of the specifications and developer tools will take place in PI Working Groups. The certification tests of PROFIBUS and PROFINET products with FDI will be performed in accredited PI Test Labs and the certificates will be issued by the PI Certification Body. PI will remain the point of contact for its members in regard to the specifications and developer tools relevant to FDI.

In the future, PI will also implement user requirements and will permanently establish FDI as a component of its supported technology portfolio. PI is fulfilling the expectations of its member companies by actively promoting the further development of FDI for PROFIBUS and PROFINET technologies.

Tech Tip: PROFINET's Got Class, PROFINET's Got Class

The redundant title is your first clue to this issue's topic: media redundancy classes.

Media redundancy is optional with all conformance classes, but in some applications it is critical for correct operation (for example, hot backup in a safety application) and offers network media redundancy through a ring topology. PROFINET has two main media redundancy classes defined. MRP – Media Redundancy Protocol which offers <200ms recovery in a network up to 50 switches and MRPD – Media Redundancy for Planned Duplication which is a bumpless redundancy. (Zero millisecond recovery time)! MRP is typically used with Real Time (RT) and MRPD with Isochronous Real Time (IRT). You can learn more about these in our [MinutePROFINET video series](#). Here's a short animation of how they work:

--from the PROFI Interface Center in Tennessee where all these classes are explained in class – the [PROFINET Certified Network Engineer class](#)

But wait, there's more! In the future we may come back to discuss other classes, for example, PROFIdrive application classes, system redundancy classes, and others since they are important to know about too. And there is even one more important class you need to know about... our [PROFINET certification class](#)! We would be happy to see you there and can assure you that becoming a PROFINET certified engineer is real classy!

Training and Events

With Certified Training available in England, France, Germany, Italy, Spain, USA, and the Netherlands over the next month, it is shaping up to be a busy holiday season. Sign up today and learn about:

- Planning,
- Designing,
- Installing,
- Commissioning,
- Maintaining,
- Troubleshooting.

Free training classes, seminars, workshops, and more certified training classes are planned for 2015, too.

[- FOR TRAINING AND EVENTS AROUND THE WORLD, CLICK HERE -](#)

Or, scroll down to see a list below:

SPS Report: PI Press Conference

On the morning of Day 2 at the SPS/IPC/Drives show in Nuremberg, PI held their annual press conference to present the headlines with respect to PROFIBUS and PROFINET. Couldn't make it that early in the morning? Here's your wrap-up. In short, the presentation covered:

- PROFINET in Machine Building
- New Guidelines
- PI in China
- FDI News
- PI Conference 2015

PROFINET perfect for machine building

Machine builders are also facing increasing competition. In a global market in which individualized products are expected, the demand is for innovative and flexible machines. PROFINET can excel here. It is not only the high performance of PROFINET and the accompanying high-precision isochronous communication suitable for motion control tasks that is important here. PROFINET provides an extensive set of functions over the entire life cycle of a machine. For example, commissioning is accelerated by the automatic assignment of IP addresses during device integration in system networks. Thanks to standardized interfaces, subcomponents can be tested in advance and flexibly integrated into machines later on. During operation, comprehensive diagnostics ensure fast troubleshooting and thus short downtimes. Because PROFINET is integrated seamlessly in existing Ethernet networks, innovative remote maintenance concepts are also optimally supported. [See how this concept is being employed to manufacture the Boeing 787.](#)

Guidelines for every step in the lifecycle

For Technology Providers, PI provides:

- Specifications
- Test Specifications

For Device Manufacturers:

- GSD Spec / Tool
- Diagnostics Guideline

For OEMs:

- Design Guideline
- Cabling and Assembly Guideline

Finally at the end of the chain, PI provides Users with:

- Commissioning Guideline
- System Descriptions

[All of these documents are accessible on the PROFIBUS/PROFINET International website.](#)

PI in China



PROFIBUS is more successful in China than ever.

Leading market research firms report PROFIBUS as the most widely used fieldbus. To increase acceptance, PI has long pursued a strategy of promoting development of not only international standards but also local, country-specific industry standards. This is especially important in China. In 2006, PROFIBUS was the first well-known fieldbus to achieve the status of a national standard (GB/T), which contributed significantly to its installed market base. Now there are numerous applications in a wide range of production automation and process automation industries. This course was also taken at an early stage with PROFINET, which achieved the status of GB/T in 2014.

After meeting its goals for standardization, PI will now concentrate its future efforts on further expanding the installed base of its technology. In doing so, special emphasis will be placed on training. Accordingly, the schedule for 2015 again includes Technology Roadshows, where developers, engineers and commissioning engineers will be trained in using PROFIBUS and PROFINET. Activities for establishing an accredited training center are underway, in order to establish local training opportunities for users in their native language on an ongoing basis.

Four application stories from China were also presented at the press conference, one each from ABB, Endress+Hauser, Siemens, and GE.

[More about the Chinese GB/T standard can be found here.](#)

FDI News

As planned, the FDI Cooperation LLC will dissolve in mid-2015, once its work is complete. After which, PI and the FieldComm Group are proposing to join forces under the framework of a long-term cooperation. This is because as FDI technology is adopted in the marketplace, continuous further development and support are required.

[Read more about PI's involvement and what it means for the technologies here.](#)

PI Conference 2015

The 4th PI Konferenz will take place on March 11-12, 2015, at the Technik Museum in Speyer (Germany). As this is the 25th anniversary year since the founding of PI the tagline is: “Network of the future – Partner of users for 25 years” The day and half event will feature an introduction from Michael Ziesemer (ZVEI) and a presentation from Prof. Gunter Duek among other technical workshops and C-Level talks.

[For more information on the PI Konferenz, please see this article.](#)

Member News

GE Intelligent Platforms has released a new video about PROFINET redundancy, or what they term 'high availability'. HARTING has a new iPad App that allows users to configure their connectors.

GE-IP

The new video from GE runs approximately 45 minutes in length and discusses the advantages of a redundant PROFINET network compared to traditional topologies. Then, a demonstration of the system is performed. This includes an interesting look at changing an I/O device's hardware configuration while the application continues to run.

HARTING



HARTING's iPad configurator app helps users design the custom, modular connector from standard parts that best suits their application. By employing this free, interactive, drag-and-drop app to choose the connector model and size (from select series of popular hoods and housings) as well as all inserts, users can see their custom connector coming together on screen and alter the content and layout. During the selection process, both male and female sides of the connector are displayed. Power, signal, data, pneumatic and blank inserts are available. Once the customized connector has been configured, the app generates a list of specified materials (including part numbers) that can be emailed to the user.

Created by HARTING North America, the app makes designing a modular connector a fast, simple task that can be performed in the field or office. It can assure that when ordering connectors, all part numbers are correct. That's not all. Users who want to better understand how much they can save using HARTING modular rectangular connectors in place of hard-wired connectors can do it with the app's Savings Calculator. It dynamically displays the cost savings from connectors that accrue over a period of time, from the initial investment through up to three subsequent installations resulting from shipping, assembling and maintaining the machine or system.

Regional News

Read about news from:

- A PROFIday hosted in November in the Netherlands,
- Germany, where the PNO has announced the PI Conference for March 11-12, 2015,
- Switzerland, where a 2-day bus tour culminating at the SPS show was hosted.

The Netherlands



On Thursday November 13th, PROFIday Netherlands took place. 150 industrial visitors found themselves in the Evoluon in Eindhoven. The 23 participating PI Netherlands members organized a wonderful day, where visitors were able to attend an educational program. With the varied program, there was something for everyone. [See the full report here](#).

Germany



The program for the 4th PI Conference on March 11-12, 2015, at the Technik Museum in Speyer (Germany) is set. In this 25th anniversary year of the founding of PI (PROFIBUS & PROFINET International) Germany, the program, whose motto is “Network of the future – Partner of users for 25 years”, will feature expert workshops on different technologies as well as presentations. [See the full report here](#).

Switzerland

PI Switzerland hosted over 30 highly interested visitors at the SPS show. The event was preceded by a 2-day bus tour organized by Swiss PI member Emmesys with the bus driven by the company owner himself. First the visitors were given a short presentation on the multi-vendor wall, with the paper airplane model as a highlight. The tour was capped off with the traditional Bundnerfleisch (meat), Swiss cheese, and Fendant (chasselas) wine celebration offered annually by PI Switzerland.

New Products

New products this month include: New switches, wireless bridges, networked power supplies, PLC control over Ethernet, and industrial patch panels.



Tiny 1588 PTPv2 Switches for Precise Motion Control

Time synchronization is increasingly important for distributed systems in industrial automation. To meet this need, Moxa has implemented the latest PTP (Precision Time Protocol) technology in their new line of EDS-405A-PTP switches. The switches support the IEEE 1588v2 real-time clock, which is required to synchronize the clocks of all connected devices to sub-microsecond accuracy.



Connecting Devices - Wirelessly

For several years, the Anybus Wireless Bridge has been a popular solution to replace Ethernet cabling with a Bluetooth or WLAN connection. After the acquisition of the wireless gateways from u-blox/connectBlue in September, HMS Industrial Networks can now present an expanded suite of Anybus Wireless Bridge products for connecting industrial devices wirelessly.



Power Supply Integrated into Networked Automation

With the new Sitop PSU8600 Siemens presents its next-generation power supply system: It is the first power supply capable of being completely integrated in networked automation applications and the Totally Integrated Automation Portal (TIA Portal). The Ethernet/Profinet interfaces enable users to individually set voltage and current for up to 16 outputs, for example.



[Control S7 PLCs over Ethernet with MPI Adaptor](#)

Hilscher North America announces availability of the netLINK-MPI, an adaptor that enables direct communication between two or more PLCs over Ethernet. It's also possible to connect multiple PLCs that don't have an internal Ethernet connection, by using the netLINK adaptor. Full PROFIBUS diagnostics and Master Class 2 DPV1 services are available.



[Next Generation Switches with Integrated PROFINET](#)

HARTING's two newest, fully managed Ethernet switches – the Ha-VIS mCon 3000 Next Generation – have been optimized for fast deployment in the harshest industrial environments to support today's increasingly sophisticated network structures. With their PROFINET I/O stack, mCon 3000 NG switches can be deployed and incorporated seamlessly into existing and new PROFINET applications.



[Industrial-Strength Patching and Termination Solutions](#)

Belden Inc. announces its new distinct ranges of structured Modular Industrial Patch Panel (MIPP) products for harsh industrial applications. With three robust and versatile termination panel options available, engineers and installers can easily connect both fiber and copper cables from operating environments to active equipment.

[ProfiSwitch X5 – 5 Channel Customizable Baud Rate Hub](#)

ProfiSwitch X5 is the first ProfiHub to include the ability to run multiple baud rates with in the same network, by one Controller. This transparent hub modernizes any PROFIBUS installation, by allowing channel baud rate customization with in one network, with the ease of adjusting a rotary switch.

Belden Offers Industrial-Strength Patching and Termination Solutions

Versatile, Compact Patch Panels Deliver One Solution for Structured Management of Fiber, Copper or Combination Cabling

Belden Inc., a global leader in signal transmission solutions for mission-critical applications, announces its new distinct ranges of structured Modular Industrial Patch Panel (MIPP) products for harsh industrial applications. With three robust and versatile termination panel options available, engineers and installers can easily connect both fiber and copper cables from operating environments to active equipment.

“There’s a clear trend in the use of both industrial Ethernet and fiber infrastructures in industrial networks. Our customers have been looking for a single solution to connect either fiber or copper cabling, or a combination of both,” said Loredana Coscotin, product marketing manager for industrial cable at Belden. “The enhancements to our MIPPs do just that – offering efficient, low maintenance and secure connections between cables and switches in performance-critical applications.”

The three industrial-strength MIPPs include:

- The MIPP Fiber Splice Box is designed to efficiently terminate various types of fiber cabling in a wide range of industrial applications. A single MIPP Fiber Splice Box allows for termination and patching of up to 72 fiber cables, saving customers both space and costs, especially in closed cabinets where space is a premium.
- The MIPP Copper Patch Panel ensures maximum reliability for PROFINET and other Industrial Ethernet networks. Together, through Belden’s MIPP and DataTuff® patch cords, copper cables can be terminated and linked to active equipment in an organized and structured manner. One MIPP Copper Patch Panel can terminate and patch up to 24 copper cables.
- For networks using both fiber and copper cabling in place, the MIPP Mix integrates the connection of both cabling infrastructures in one single solution. With high port-density and flexibility, the combination of copper and fiber ports can include up to six modules per device.

Each of the MIPPs are constructed of lightweight, high-strength aluminum in order to



securely protect the cabling connections under the harshest industrial conditions. The products' rugged design and UL 1863 certification delivers peace of mind to network engineers and system installers in environments, like power transmission and distribution, transportation, alternative power generation, machine building and automation.

"The features of our MIPPs support the next level of network availability required of industrial applications," adds Coscotin. "As network connectivity needs expand, with limited space available, we made versatile, high port-density a priority – along with the ability to easily install, maintain and update these space-saving modules, both now and in the future."

[Belden](#)

Connecting Devices - Wirelessly

For several years, the Anybus Wireless Bridge has been a popular solution to replace Ethernet cabling with a Bluetooth or WLAN connection. After the acquisition of the wireless gateways from u-blox/connectBlue in September, HMS Industrial Networks can now present an expanded suite of Anybus Wireless Bridge products for connecting industrial devices wirelessly.



The widened offering now consist of the following solutions:

- Industrial Ethernet over WLAN (point-to-point). 2.4 or 5 GHz
- Industrial Ethernet over Bluetooth (point-to-point or multi-point)
- Serial over Bluetooth (point-to-point or multi-point)

Solving network problems for system integrators as industrial Ethernet and serial links go wireless

By connecting industrial devices and networks over a wireless link, the Anybus Wireless Bridge family makes life easier for system integrators and automation engineers needing to create connections through e.g. hazardous areas, hard-to-reach locations, or moving installations where cables are not desirable. The Anybus Wireless Bridge is a proven solution to bridge popular industrial Ethernet standards such as PROFINET, EtherNet/IP, BACnet/IP and Modbus TCP, as well as serial networks, and provides users with a robust and maintenance-free wireless connection.

Depending on architectural needs, the Anybus Wireless Bridges can be used for point-to-point cable

replacement as well as for connecting several wireless nodes.

Industrial quality

“There are many wireless solutions on the market today, but few can offer the reliable and sturdy connections required for industrial use,” comments Niklas Selander, Product Manager at HMS. “The Anybus Wireless Bridge for Ethernet has been a popular product of ours for several years and as we can see that the industrial market is now becoming more receptive to wireless solutions, we are now expanding our wireless offering. The Anybus Wireless Bridge offering is now the third leg of our Anybus gateway solutions complementing the Anybus X-gateway™ and Anybus Communicator™ families.”

[HMS](#)

Control S7 PLCs over Ethernet with MPI Adaptor, Access PROFIBUS

Replaces CP communications processors to program, visualize and control S7 PLCs over Ethernet

Hilscher North America announces availability of the netLINK-MPI, an adaptor that enables direct communication between two or more PLCs over Ethernet. It's also possible to connect multiple PLCs that don't have an internal Ethernet connection, by using the netLINK adaptor.

Available as a directly mountable adaptor or as a DIN rail mount, netLINK-MPI not only replaces expensive CP communications processors but also frees up valuable slot space, enabling programming, visualization and control of S7-200, S7-300 and S7-400 PLCs over Ethernet.



The provided driver integrates into all common SIMATIC S7 engineering tools, such as STEP7 and TIA portal, as the PG/PC programming interface. The device is set up within the engineering tool or with conventional web browsers over the integrated web configuration pages. Full PROFIBUS diagnostics and Master Class 2 DPV1 services are available, enabling unrestricted DP Slave device configuration and parameterization in STEP7.

The netLINK-MPI adaptors can program or change S7-PLC control programs and can serve to engineer HMI devices with WinCC visualization software. By supporting the “ISO on TCP” RFC1006 Ethernet protocol, any third-party or SIMATIC visualization station can be coupled to the PLC. Since standard TCP/IP protocol access mechanisms are used, remote maintenance and logging over a router is possible once the netLINK-MPI is integrated into the office or plant network and connected to the internet.

Power is supplied by a 24 V DC. If supported by the S7 PLC, the netLINK-MPI adaptor alternatively may be powered over the DSUB9 connector and its extra feed-through DSUB9 connector used to connect additional devices to the same MPI/DP network.

- Parallel communication to 32 PLCs with up to 16 TCP connections
- Direct PLC-to-PLC communication, also as projected connection
- Works with all S7 engineering tools including TIA Portal
- Web-based configuration, protocol support of RFC1006 and DHCP
- Full access to PROFIBUS diagnostics and services in STEP7
- Automatic DP/MPI baud rate detection

[Hilscher](#)

HARTING launches Next Generation Ha-VIS mCon Ethernet switches with Integrated PROFINET I/O Stack

HARTING's two newest, fully managed Ethernet switches – the Ha-VIS mCon 3000 Next Generation – have been optimized for fast deployment in the harshest industrial environments to support today's increasingly sophisticated network structures. These newest switches in the Ha-VIS mCon 3000 lineup deliver high availability, network security, monitoring and reliability and are designed for mounting on top-hat rails in control cabinets. With their PROFINET I/O stack, mCon 3000 NG switches can be deployed and incorporated seamlessly into existing and new PROFINET applications. These new switches also are compatible with other industrial Ethernet based protocols including EtherNet/IP. mCon 3000 NG Ethernet switches can be configured using a web interface, command line interface, SNMP or the multifunction button located in front, which provides additional options for fast, basic configuration. Ha-VIS mCon 3000 switches also are equipped with an SD card slot allowing for existing configurations to be stored as backup or for transferring to another SD card-equipped Ha-VIS mCon for fast commissioning.



The Ha-VIS mCon 3000 Next Generation comes in two models: the 3080-A with eight 10/100Base-T(X) RJ45 ports and the 3102-AASFP with eight 10/100Base-T(X) ports and two 10/100/1000Base-T(X) combo ports with SFP slots for either copper or fiber optic lines. All ports are managed, non-blocking and support auto-crossing, auto-negotiation and auto-polarity. With an operating temperature range of -40°C to +70°C (-40°F to 158°F) and features like Media Redundancy Protocol and Precision Time Protocol, these switches are well-suited for a wide range of applications and operating environments, such as factory automation and robotics, marine systems as well as wind and solar power installations.

[HARTING](#)

Moxa Rolls out Tiny 1588 PTPv2 Switches for Precise Motion Control

EDS-405A-PTP 5-port IEEE 1588v2 PTP managed Ethernet switches

Time synchronization is increasingly important for distributed systems in industrial automation. To meet this need, Moxa has implemented the latest PTP (Precision Time Protocol) technology in their new line of EDS-405A-PTP switches. The switches support the IEEE 1588v2 real-time clock, which is required to synchronize the clocks of all connected devices to sub-microsecond accuracy.

The EDS-405A-PTP is a 5-port IEEE 1588v2 PTP switch designed for real-time factory automation, process control, and motor control applications. When the EDS-405A-PTP is configured as a boundary clock, the switch can act as a slave related to the grandmaster clock, and simultaneously act as a master clock related to its local slaves. The managed switch uses nanosecond-accurate time stamps to modify its timing packets and synchronize clocks distributed over the network. This PTP switch can also act as a transparent switch that measures the residence time of PTP packets and modify the time stamps to improve synchronization accuracy. The EDS-405A-PTP not only eliminates the master clock's processing load, real-time synchronization also minimizes delays and disruptions to support precision control of robotic systems, now commonly used as part of advanced manufacturing applications.

The EDS-405A-PTP industrial Ethernet switch also supports Modbus TCP, PROFINET,



and EtherNet/IP protocols for easy SCADA/PLC management and monitoring, and features a fast boot up time of less than 10 seconds, and fast network recovery within 20 ms with a full load of 250 switches. Other management functions such as IGMP snooping, IEEE 802.1Q VLAN, QoS, RMON, and relay warning, make network planning more flexible and easy. The compact size, fanless design, and wide operating temperature range make the EDS-405A-PTP a perfect choice for device level networks in harsh industrial environments.

Features

- IEEE 1588v2 standard hardware timestamp technology
- Supports both IEEE 1588 Boundary Clock and Transparent Clock
- Sub-microsecond precision accuracy
- Ethernet recovery < 20 ms with up to 250 switches
- Supports EtherNet/IP, PROFINET, and Modbus/TCP protocols for easy PLC and SCADA integration
- -40 to 75°C operating temperature range (T models only)

[Moxa](#)

ProfiSwitch X5 – 5 Channel Customizable Baud Rate Hub

ProfiSwitch X5 is the first ProfiHub to include the ability to run multiple baud rates with in the same network, by 1 Controller. This transparent hub modernizes any PROFIBUS installation, by allowing channel baud rate customization with in one network, with the ease of adjusting a rotary switch.

The ProfiSwitch X5 stands alone against all existing repeaters and hubs in the PROFIBUS market. It eliminates traditional PROFIBUS network baud rates constraints associated with spur lines, additional resistance, single master systems, poor cable segments and cable length limitations. Design limitations associated with legacy systems or new build systems are eliminated, creating the capability for unprecedented customizable network designs.

One main PLC can now act as a workhorse with the ability to extend the network further, spur line hot swap, reduction of repeater installation, all without limiting speed performance. The advanced technology of the ProfiSwitch X5 converts the main channel to other transmission speeds and acts as a transparent proxy without disturbing the host system (comparable with PA links). With limitless applications, the ProfiSwitch X5 will become your go to device for creating networks without traditional limitations.

Siemens integrates new power supply in networked automation applications

- Compact Sitop PSU8600 with integrated Profinet communication
- Outputs with overload protection and individual monitoring for high reliability
- Complete integration into TIA (Totally Integrated Automation)
- Support of power management and condition monitoring
- Modular expandability without additional wiring effort

With the new Sitop PSU8600 Siemens presents its next-generation power supply system: It is the first power supply capable of being completely integrated in networked automation applications and the Totally Integrated Automation Portal (TIA Portal). This reduces the outlay for engineering and operation considerably. The Ethernet/Profinet interfaces enable users to individually set voltage and current for up to 16 outputs, for example. Depending on requirements additional modules, such as those for buffering short power failures, can be added without wiring effort. Several integrated functions support condition monitoring and power data acquisition, thus enhancing both availability and efficiency. For this reason, the Sitop PSU8600 is particularly suitable for industries that have high requirements in terms of reliability and integration, such as automotive, food and beverages, and pharmaceutical industries, as well as in plant and custom machine building.

The advantages of the new Sitop PSU8600 can be summarized as follows: With a narrow width of only 125 mm, the three-phase base unit with 40 amperes and four individually monitored outputs features a particularly space-saving design. The output current threshold can be set from 0.5 to 10 amperes and the output voltage from 12 to 28 volts. By means of a connector for system data and the supply of energy (System Clip Link) users can expand the power supply without any additional wiring effort by up to three modules for additional outputs and two buffer modules from the Sitop PSU8600 modular system. This enables short power failures up to 600 ms to be bridged, thus avoiding any further damages.

Engineering, configuration and operation are simplified to a high extent thanks to integration in the TIA Portal. Comprehensive operating and diagnostics information is available through the integrated Profinet interfaces. This information can be evaluated directly via Simatic S7 and visualized in WinCC. Standardized S7 function blocks for Simatic controllers and ready-made WinCC faceplates are available as free downloads for fast integration in user programs. Integrated condition monitoring functions provide information about the operating status and warn the user at an early stage, for example, of overloaded outputs, excessive temperature, system overload or power failure. This enables the user to meet in-time preventative measures, avoid faults, and enhance availability. Several functions support efficient power management: These range from the actual current and voltage value captures, individual on/off switching of outputs via PROFIenergy (for example during idle times), up to complete integration in power management systems.



With the new Sitop PSU8600 Siemens presents its next-generation power supply system: It is the first power supply capable of being completely integrated in networked automation applications and the Totally Integrated Automation Portal (TIA Portal).

[Siemens](#)

PI Conference puts the focus on the users

The program for the 4th PI Conference on March 11-12, 2015, at the Technik Museum in Speyer (Germany) is set. In this 25th anniversary year of the founding of PI (PROFIBUS & PROFINET International) Germany, the program, whose motto is “Network of the future – Partner of users for 25 years”, will feature expert workshops on different technologies as well as presentations.



Presentations at the event will focus on application reports on the technologies of industrial communication with PROFIBUS, PROFINET and IO-Link. These will be supplemented by use scenarios of application profiles such as PROFIsafe, PROFIenergy, and PROFIdrive. Facets such as the network, architectures, data exchange, devices, and systems will be examined against the backdrop of the complete life cycle of a production plant – from the planning, configuration, and engineering phases to active operation.

For the first time, the 2015 PI Conference will offer technology-specific workshops in addition to presentations. On the basis of real-world examples and demo models, these workshops will provide users with in-depth insight into the benefits, handling, and use of the technologies.

With its chosen theme for the conference, PI is not only looking back at the past technology developments of PROFIBUS, PROFINET, and IO-Link. Rather, the presentations at the conference will also point out future developments and the change that automation technology is undergoing.

Detailed program and registration information can be found at: www.pi-konferenz.de.

PROFIday Netherlands - where the industry can be proud!

On Thursday November 13th, PROFIday Netherlands took place. 150 industrial visitors found themselves in the Evoluon in Eindhoven. The 23 participating PI Netherlands members organized a wonderful day, where visitors were able to attend an educational program. With the varied program, there was something for everyone. See the full report here.



Representatives from the Chamber of Commerce, Frank Kramer and Tom Bouws provided the opening. As co-authors of the report “Smart Industry”, they informed visitors of the opportunities in Smart Industry. We must not confuse Smart Industry with Industry 4.0; they are related to one another, but not the same.

The definition “Smart Industry” was defined as a high degree of flexibility in production. Examples from the consumer world include the smart thermostat Anna, 3D printing components, and customized cabinet production. They also highlighted a number of industrial applications, such as the integration of sensors in a forklift, a solution for automatically monitoring a refrigerated display, and also a self-learning robot. In all cases, sensors and the exchange of information played a leading role. For the industrial market, the introduction of Smart Industry is a conversion for businesses, where new revenue models can be introduced.

'Smart Industry' plan

The Tuesday before the PROFIday, the Smart Industry Action Agenda was presented to Minister of Economic Affairs Henk Kamp. A small summary of this was covered in the talk at PROFIday. Leading in this plan is to secure all existing knowledge, accelerate the establishment of Field Labs (practical test centers of companies and research institutions investigating automation, flexible manufacturing and zero defect production, big data, and customer intimacy).



After this general introduction Rob Hulsebos made the connection directly to industrial networks. "Let's not reinvent the wheel" was the message to the Chamber of Commerce, "but use the knowledge of industrial communication which is already far with development." As a networking expert, Rob Hulsebos described his vision of industrial networks in 2020.

Important topics were standardization, Industry 4.0 / Smart Industry, Internet of Things (IoT), TCP / IP V6 migration, cyber security, and the cloud.

After the first break the group was divided into three rooms, each with a different topic. Within PI, Jaap Westeneng of Endress+Hauser, Walter Stoops from Pepperl+Fuchs and Theo Bervoets from Auma organized a joint presentation about the integration of HART into PROFIBUS DP. Step by step questions were answered; How do we integrate HART devices in PROFIBUS and PROFINET networks? How can we customize the existing installation that is guaranteed for the future and how we get access to HART and PROFIBUS devices and what can we do with them?

IO-Link

On the PROFIday there was a lot of attention on IO-Link, an international standard according to IEC61131-9 guidelines which uses a three wire connection and M12, M8, and M5 connectors. IO-Link also belongs to the PI organization, which ensures a large number of suppliers that support the protocol. That IO-Link is a wonderful addition to industry 4.0 was told by Marcel Vennemann from Turck. Peter Wienzek from ifm Electronic also explained the basics of IO-Link. Afterwards, Edwin Slot directly showed this in practice through a demonstration not only with components from ifm but also other members.

Safety

Safety was also a topic due to its criticality for massive movements, like bridges, harbor cranes, and conveyors. Components in applications must be able to come to a guaranteed stop or at least realize a safe speed. Otto Waagmeester from SEW-Eurodrive gave a concise explanation on why certain controls are preferred.

Signal quality

Many members were present with components that contribute to signal quality. Quality was a subject that

was well represented at PROFIday NL. First, Charles Preeker from Weidmüller gave the visitors a checklist on how to create the best possible network. Maurice Felten from Felten Wire & Cable Solutions gave the crowd advice on how to convert signals from copper to optical fiber. Finally, Sjoerd Hakstege from Phoenix Contact and Eric Leijtens from TE Connectivity gave presentations on wireless and contactless connectivity (respectively).

Bart Pape from Systeme Helmholtz discussed troubleshooting and diagnostics while Bas de Koningh gave a number of tips to set up a proper PROFINET infrastructure.

Robust and proven

There was also plenty attention for the PROFIBUS, as people are not always searching for the latest innovations in a conventional market. Often this means an investment in a proven technology so a talk with a basic explanation of PROFIBUS also attracted plenty of attention. PROFIBUS has enough features to go on for decades. The possibilities were shown in a workshop from PROCENTEC, whereby specific failures can be searched and resolved in a network.

It was a day full of discussions and the visitors were enthusiastic about the lectures, workshops, and knowledge sessions. With enough room for questions within the program, it was a successful day. In addition to a successful day we as PI Netherlands can contribute to Smart Industry with knowledge by bringing companies and end users together.
