PROFINEWS

PROFIBUS & PROFINET news from around the world

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PROFINET and OPC UA Cooperation

by Michael Bowne - Wednesday, December 02, 2015

http://profinews.com/2015/12/profinet-and-opc-ua-cooperation/

Karsten Schneider, PI Chairman, and Tom Burke, OPC Foundation President

It is apparent today that the service-oriented architecture of OPC UA (Unified Architecture) will be a building block for the development of Industrie 4.0. In particular for communication with devices such as operator stations via the controller level or for production data from devices to corporate IT, especially in an environment with different providers. OPC UA becomes the link for the non-deterministic communication between different types of devices on this level and between levels. PROFINET takes over the transmission or deterministic real-time data and control-relevant acyclic data in automation systems. PROFINET and OPC UA are therefore already a perfect complement to one another today because PROFINET allows open communication based on TCP/IP in parallel without additional expense. For example: automation of a screwdriver control in real-time using PROFINET. Quality data such as tightening torques can then be transmitted to the quality management systems over the same cable via OPC UA.

PI Chairman Karsten Schneider is looking forward to the cooperation with OPC Foundation on the future-oriented subject: "In PI we see OPC UA as a complementary technology for PROFINET, the leading Industrial Ethernet standard in automation. The ability to run both services in one network will open entirely new possibilities and will be the foundation for mega trends like IIoT and Industrie 4.0."

Thomas Burke, President of the OPC Foundation, sees a number of synergies in the cooperation with PI: "The collaboration between PROFIBUS & PROFINET International (PI) and the OPC Foundation provides the solution for information integration and interoperability from the embedded world to the enterprise. Suppliers and end-users alike will benefit from this collaboration, and is part of the continuum of the partnership between the organizations reflected in other initiatives inclusive of FDI."

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CC-Link IE and PROFINET Cooperation

by Michael Bowne - Wednesday, December 02, 2015

http://profinews.com/2015/12/cc-link-ie-and-profinet-cooperation/

Digital communication using a fieldbus or Industrial Ethernet is already widely used in modern production plants and is an important building block for increasing productivity. The demand for intelligent communication will continue to increase due to megatrends such Industry 4.0 and IIoT. However, the heterogeneous landscape of Industrial Ethernet standards that has existed for years poses the problem that devices and machines of different communication systems are in themselves unable to exchange data. Machine builders are therefore forced to equip their machines with different networks, or plant owners are limited in their selection of suitable machines. Consequently to overcome this there has been a growing need for manufacturer-specific transfer specifications and complicated bespoke converters.

Karsten Schneider, PI Chairman, and Fumihiko Kimura, CLPA Chairman

With their cooperation, CLPA and PI aim to enable transparent and easy bi-directional communication between CC-Link IE and PROFINET devices through standardized interfaces. To this end a joint working group is being established to develop the necessary technical specifications to achieve this goal. When work on the specifications is complete, it will be available to members of both organizations for implementation.

"With the CC-Link Partner Association, we have gained a comparable partner whose networks are being used in many industries worldwide," said Karsten Schneider, Chairman of PI.

"This will give users more flexibility when building their IIoT, Industry 4.0, or e-F@ctory enabled

systems," confirmed Naomi Nakamura, Global Director of CLPA. "With the combined global network of CLPA offices and PI associations and the large number of available devices from members of both organizations, together we can open up additional markets for our members. As a result, the use of CC-Link IE and PROFINET will grow even faster."

[Download the White Paper](#)

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The Backbone for Industrie 4.0

by Michael Bowne - Wednesday, December 02, 2015

http://profinews.com/2015/12/the-backbone-for-industrie-4-0/

It is already clear today that PROFINET, with its openness for TCP/IP and its standard Ethernet based technology, has a future-proof architecture that forms a basic prerequisite for Industrie 4.0. Evidence of this is given in the ARC white paper "How PROFINET and Industrie 4.0 Enable Information-Driven Industries", which presents the background and motivation for the transformation of industry with possible solutions.

The growing challenges of industry, such as the need for shorter time-to-market and greater flexibility and efficiency, are not new and are not a surprise. Further technological developments such as digitization, cloud connection, and activities of standardization groups open up new solutions and new business ideas. All of these new solutions share a common requirement: availability of powerful, future-proof communication. Examples of this already exist today.

- Energy-saving production is only possible at a reasonable cost when switch-on/switch-off of energy and energy measurement can be easily implemented by a cross-vendor profile in the engineering phase.

- Besides the continuous device diagnostics, preventive maintenance (condition monitoring) of devices, machines and plant units requires easy "downward" penetration to comprehensive sensor data via IO-Link as well as a powerful communication path to the controller or an evaluation system.

- Plant availability can be increased by handling process data not only in the local controller but also by making it available to cloud applications for remote diagnostics and optimization. An open powerful communication, such as via OPC UA, is used for this.

Today's solutions already have important properties for these applications. But it's not just the requirements for transmission bandwidth and real-time capability that are increasing. The profiles available up to now with their semantics for operational data exchange will also be extensively expanded and standardized for the other phases of the life cycle of a device or plant. That can already be derived today from the results of the Industrie 4.0 platform.

PI will also approach these challenges in a proven manner. Users, manufacturers, and specification experts will advance the technology on the basis of real use cases. Of course, technologies such as TSN, IPV6, and OPC UA will be taken into consideration in the process and integrated suitably.

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ARC White Paper: Enabling Information Driven Enterprises

by Michael Bowne - Wednesday, December 02, 2015

http://profinews.com/2015/12/arc-white-paper-enabling-information-driven-enterprises/

Thanks to industrial Ethernet, manufacturers have access to data previously hidden by technical barriers that can be used effectively by both production and enterprise applications to measure and better understand what is happening in manufacturing processes, helping to cut costs and increase productivity. While Ethernet can greatly enhance data gathering from the plant floor, this is especially useful if the data are effectively evaluated using applications such as asset management.

Under the Profinet name, PI offers an all-encompassing suite of solutions for Ethernet in the process plant or factory. PI's technology portfolio makes it well prepared for future challenges. Currently, the organization is identifying the gaps and extensions of its concepts needed to meet the challenges of Industrie 4.0.

Download the White Paper

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Industrial Communication for Process Control

by Michael Bowne - Wednesday, December 02, 2015

http://profinews.com/2015/12/industrial-communication-for-process-control/

As a backbone, PROFINET is ideally suited for the merging of process data stored in control systems and field devices. This was reason enough for PI to merge these two market leading technologies from PI into a future-oriented solution that will enable operators of process-related plants to continue using proven installed technology and to simultaneously access the latest technologies and Industrie 4.0.

To achieve this goal, a corresponding multi-phase project with support of well-known users was launched within PI to establish PROFINET broadly in all sectors of the process industry down to the field level. The project objectives are, on the one hand, medium-term objectives, for the deliberate purpose of adapting to technologies currently undergoing development or specification. On the other hand, the use of PROFINET is already a reality for process-related applications that do not require explosion protection (such as the water/wastewater and food sectors). Here PROFINET as system bus not only carries out the backbone function but also already extends down to the field level, where it provides functions such as network diagnostics and topology detection. Already specified and thus foreseeable are products and solutions in which existing or new PROFIBUS PA segments can be connected to PROFINET via intelligent, cross-vendor standardized link components (proxy technologies) with little engineering effort. Work is currently underway on an update to the profile for PA devices that will enable direct connection of process field devices to PROFINET and the corresponding mapping for use in non-hazardous areas. As a particularly ambitious goal, current efforts for an Ethernet solution for hazardous areas and long cable distances are being intensively pursued.

Industrie 4.0 requires Industrial Ethernet as its "lifeline", and PROFINET is very well suited for that. The project launched by PI will merge PROFIBUS PA and PROFINET by first connecting existing PA solutions followed by gradual integration or development of PROFINET technologies needed for PA. This procedure will make PROFIBUS PA into a future-proof building block for Industrie 4.0 applications

in process technology.

Download the ["Industrial Ethernet in the Process Industry"](#) white paper.

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M12 L-coded for Device Power

by Michael Bowne - Wednesday, December 02, 2015

http://profinews.com/2015/12/m12-l-coded-for-device-power/

Uniform plug connectors facilitate connection when constructing systems and machines as well as during maintenance and repair. Thinking ahead to the life cycle of automation devices, the uniform voltage supply connection also offers major advantages to device manufacturers, which can significantly reduce their number of device variants. These were the reasons that PI opted for a change of generation that allows new IP 65/67 devices to be uniformly equipped with the M12 L-coded instead of the M12 A-coded or 7/8" plug connector on a power-dependent basis.
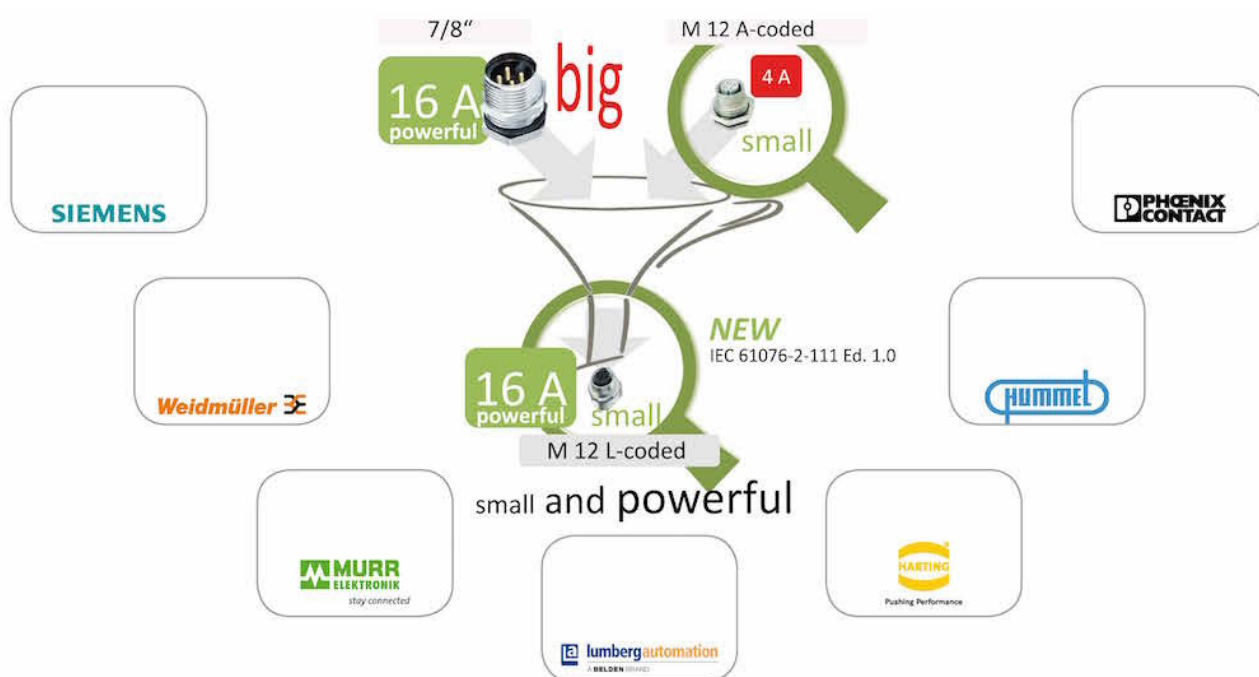
In the context of Industrie 4.0 this step also makes sense as it saves significant space on the device and in the installation compared to the 7/8" plug connector. The M12 L-coded is thus also a decisive step forward for miniaturization. The M12 L-coded is currently being internationally standardized and is already being offered by many connector manufacturers.

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Industrial Communication with PROFINET: E-book Now Available

by Michael Bowne - Wednesday, December 02, 2015

http://profinews.com/2015/12/industrial-communication-with-profinet-e-book-now-available/

The new edition takes into account the latest version of the PROFINET Standard V 2.3. It provides the reader with explanations of basic principles, helpful references, examples, and the mode of operation of PROFINET. In addition to learning about data exchange in RT and IRT communication, the reader will find out everything he needs to know about the diagnostics concept, engineering, conformance classes, and performance optimizations, as well as the user profiles of PROFINET. Other topics include the integration of existing fieldbus systems, the redundancy concept integrated in PROFINET, and device certification. An overview of the essential frames and data formats rounds out the book and serves as a reference to assist developers and commissioning engineers in their daily activities.

The *"Industrial communication with PROFINET"* book is available in English and German and can be ordered directly from the PI.

Download here **(members only)**

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IO-Link News

by Michael Bowne - Wednesday, December 02, 2015

http://profinews.com/2015/12/io-link-news/

North American Workshop

Comtrol recently hosted the 2015 IO-Link North American Competency Workshop. The workshop highlighted presentations and panels from recognized experts on the use and deployment of IO-Link, showcased manufacturers from all around the world, and was attended by many network engineers, system integrators and ultimate end users of this new standard in point-to-point serial communication protocol used to communicate with sensors and/or actuators. If you are not familiar with it, IO-Link allows three types of data to be exchanged — Process data, service data, and events. View a short clip of the workshop:

https://www.youtube.com/watch?v=RbHettB-c8E

Prague Workshop

On October 22nd - 23rd, 2015 IO-Link experts met in Prague for the 15th Interoperability-Workshop. With more than 50 participants from 21 companies, this was a new record participation. At this plugfest - organized by the IO-Link community – participants tested and ensured interoperability of products, interfaces, and tools under real-life conditions.

Subjects of test were the latest developments of sensors, actuators, and gateways in terms of the IO-link interface as well as the integration into different engineering tools. During the 2 days, the complete IO-Link spectrum of sensors, actuators, fieldbus specific masters as well as diagnostic tools and mobile integrations into IOS were seen.

In addition three expert groups went along with the workshop for discussions about the special topics "test systems, system integration and data storage". As always, there was a lot of room for discussing of ideas and exchange of experiences.

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PROFI-Events in the Middle East

by Michael Bowne - Wednesday, December 02, 2015

http://profinews.com/2015/12/profi-events-in-the-middle-east/

PROFI-Day Dubai

PI Middle-East had its second PROFIday event in the region on November 9th. After Kuwait in August, the latest was held in Dubai. "We are planning to make such an event every quarter per year in the main cities in the Gulf", said Ali Magboul, Chairman of PI Middle-East. Objectives of the events are to improve knowledge for end-users, manufacturers, and system integrators, and share applications stories…

Marco Frxihöfer, from Indu-Sol covered the topics of grounding and PROFINET validation. Andrew Verwer, from VTC spoke on PROFIBUS system design and PROFIBUS PA instruments. Finally, Sayed Fahad from Automate Co. showed some application stories on PROFIBUS projects they've completed.

Click below to open gallery

PROFI-Day Sohar - Jan 20

A similar event is scheduled for Wednesday January 20, 2016 at the Crowne Plaza Sohar, Oman.

Details and Registration

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New Products

by Michael Bowne - Wednesday, December 02, 2015

http://profinews.com/2015/12/new-products-2/

Click the headlines for more information

New I/O Device with Small Footprint

GE's Automation & Controls solutions today launched its new, enhanced RSTi-EP input/output (I/O) device, providing a new combination of performance and maintainability in a minimal footprint. The modular, flexible, high-density solution offers industry-leading PROFINET connectivity and usability in a footprint smaller than any other I/O device available today.

First PROFINET Controller Solution with IRT

The PROFINET controller with IRT functionality is based on the netX family of **Hilscher**. Through the netX platform, the IRT functionality is not only accessible for implementations with the ASIC, it is also provided in products already on the market such as PC cards, OEM modules, and customized modules. As a result, practically any (industrial) PC is able to speak IRT and control time-critical applications.

Mobile PROFIBUS Diagnostics and Cable Testing

Softing increases the comfort for its mobile PROFIBUS Tester 5 (BC-700-PB) by providing additional language versions. In addition to English and German Softing's proven PROFIBUS tester 5 now also supports French, Italian, Polish, Portuguese and Spanish. Test results are shown clearly and easily understandable on the graphic display when the device is operated in stand-alone mode, and can be exported for extended analysis in PC mode.

Mobile Industrial Ethernet Diagnostics

Softing's new software product *busCHECK Analyzer IE* allows mobile PROFINET diagnostics for acceptance testing and troubleshooting. *busCHECK Analyzer IE* is a software product for mobile diagnostics of Industrial Ethernet networks, in particular PROFINET. Users can carry out automated acceptance tests and create test reports.

Performance boost for industrial heating system

Siemens has equipped its Siplus HCS modular heating control systems for switching and controlling heat emitter arrays and elements with considerably higher output power and power density. Via the TIA Portal (Totally Integrated Automation) engineering framework and Profinet/Profibus communication, the heating control systems are easy to integrate into the automation network.

Ethernet to the Edge

Innovasic has demonstrated a low complexity Ethernet concept to bring Ethernet to the edge of industrial, building, transportation, and automotive networks. This concept, dubbed the "low-complexity

Ethernet node", minimizes power, area, and cost enabling even the simplest of "things" to be directly connected to an Ethernet network without a processor.


Platform Passes Latest PROFINET Tests

Innovasic is pleased to announce that its multiprotocol Industrial Ethernet solution, the RapID Platform Network Interface, has passed both EtherNet/IP and PROFINET conformance testing. The PROFINET RapID Platform solution passed v2.31 for both Class B (RT) and Class C (IRT) devices including the highest level of Net Load testing – Net Load Class III.

16 Port IO-Link Master with PROFINET

Balluff's new PROFINET powered 16 port IO-Link master is designed for scalability in your distributed architecture while providing ease of use for I/O and smart sensors alike. The industry's first 16-port IO-Link master can host up to 480 configurable I/O on a single PROFINET node when combined with Balluff's expandable IO-Link hubs. Thus, enhancing the controls architecture to promote modularity today and built-in scalability for the future.
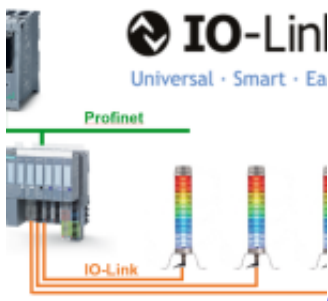
Control your Smartlight via IO-Link

Based in Karlsruhe, the software company **Codewerk** designed a modular concept that allows an easy integration of IO-Link master and devices into PLCs. They offer a free download of function blocks and libraries which allow control of a Balluff SmartLight with Siemens PLCs S7-1500 and S7-1200 and IO-Link. Codewerk offers the entire download package for free.

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