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## Edge computing with POWERLINK

**EPSG presents edge-capable controllers at Hannover Messe**

The Ethernet POWERLINK Standardization Group (EPSG) will be taking advantage of the Hannover Messe to demonstrate the implementation of edge computing architectures for the Industrial IoT. In addition to edge-capable controllers, Booth F25 in Hall 9 will also exhibit a new rotary joint that can transmit POWERLINK signals at 100 Mbps contact-free.

Numerous EPSG members will have controllers on display that perform data pre-processing and send aggregated information directly to the cloud. These solutions make edge computing architectures easy to implement. Communication with the cloud relies on OPC UA transmitted via the AMQP or MQTT protocols.



At Hannover Messe 2017, the EPSG will be presenting controllers for implementing edge computing architectures.

### Contact-free rotary transmitter

Another highlight of the EPSG booth will be a live robotics demo featuring a contact-free rotary joint from SPINNER. These no-wear devices transmit POWERLINK data with the full speed of 100 Mbps. The bit error rate is less than  $10^{-12}$ . Increased cycle times due to faulty data packets like those that can occur in slip-ring systems are a thing of the past.



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## **EPSG certification and plugfest**

### **New POWERLINK-certified hardware**

**The recent Ethernet POWERLINK Standardization Group (EPSG) certification event and plugfest was a complete success. Numerous manufacturers tested new hardware for conformity with the POWERLINK specification. The event was held at B&R's headquarters in Eggelsberg, Austria.**



The EPSG certification event was a resounding success. Numerous manufacturers tested new hardware for conformity with the POWERLINK specification.

### **Maintaining a high standard of quality**

The EPSG regularly conducts certification events to maintain the consistency of the standard. Products that pass all of the testing scenarios receive an EPSG certificate. Component manufacturer Baumüller put several products from its b maXX family of servo inverters to the test, while DINA Elektronik certified its SL VARIO safety controller system and KUKA certified its POWERLINK interface for the KR C4 robot controller. Solutions from technology integrators BE.Services, HMS Industrial Networks, Softing and Wallner Automation were also represented.

### **Plugfest with different master systems**

The plugfest conducted in conjunction with the certification event tested the performance of solutions with various POWERLINK master systems. The tests with POWERLINK masters based on CODESYS were a particular highlight.

### **Networking at the EPSG user meeting**

The EPSG holds periodic technical workshops and user meetings that give members a forum for exchanging experiences and ideas. The latest EPSG user meeting was held in combination with the certification event, so participants had ample time to network and share experiences.

### **Upcoming events**

For those who are looking to get their products certified or who want to participate in a plugfest, there will be new opportunities on June 13-14 and December 12-13, 2017. Like previous plugfests, these will also be accompanied by an EPSG networking event to which all EPSG members are invited.

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## Industrial IoT around the world

**Submissions from 10 countries for the 4th Industrial Ethernet Award**

From Spain to Kazakhstan, there was no shortage of submissions for the 4th European Industrial Ethernet Award, hosted by the Ethernet POWERLINK Standardization Group (EPSC). Students from all across Europe stepped up to the challenge to create the most innovative POWERLINK-based automation project. Many of the student projects took aim at topics related to the Industrial Internet of Things (IIoT).



4th Industrial Ethernet Award: Students from all across Europe stepped up to the challenge to create the most innovative POWERLINK-based automation project.

The awards are organized by the EPSC together with partners OSADL, B&R and BE.services. „We're thrilled with the variety of projects the student teams have submitted,“ says Stefan Schönegger, managing director of the EPSC. „The level of interest confirms that open source technologies like POWERLINK are in high demand for industrial and academic applications.“

### Student projects: Passion for real-time communication

The seamless and consistent communication demanded by Industry 4.0 and the Industrial IoT have inspired students to explore topics like the combination of POWERLINK and OPC UA or real-time communication for biomechanical sensors. Other student projects involve a modular 3D printer and an ROS framework for collaborative robots.

### Updates and additional information

The students have until the end of June 2017 to complete their projects. Then an independent jury will evaluate which of them have the greatest innovative potential. For periodic updates about the awards, visit the Industrial Ethernet Award group on LinkedIn: [www.ethernet-powerlink.org/en/linkedin](http://www.ethernet-powerlink.org/en/linkedin).



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## Release of POWERLINK for CODESYS

The EPSG is pleased to announce the release of POWERLINK for CODESYS

Industrial control systems programmed with CODESYS can now easily be turned into a POWERLINK managing node. [BE.services](#)

provides a software package that contains the openPOWERLINK stack and a CODESYS runtime system I/O driver to interface with the stack. Users can configure both the managing node(s)

and controlled node(s) directly in CODESYS thanks to the POWERLINK for CODESYS configuration editor, available as a free package in the [CODESYS Store](#). This package provides all necessary tools and guidelines for an evaluation on Raspberry Pi and BeagleBone Black platforms. The best performance can be achieved on the Xilinx Zynq ZC702 board, using the advantages of FPGA technology. Evaluation of POWERLINK for CODESYS with a ZC702 evaluation kit is also possible by registering at [be-services.net/industrie-40/xilinx](http://be-services.net/industrie-40/xilinx).



Furthermore, BE.services offers a 3-hour E-learning course covering POWERLINK technology and network configuration in the [CODESYS IDE](#). This course is recommended for engineers, sales engineers, product managers and marketing teams who want to learn about POWERLINK technology. BE.services offers readers of the EPSG newsletter a special **10% discount**, which can be redeemed using the following coupon:

EPSC-PTC5x2j6

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