Das Technologie-Netzwerk:
Intelligente Technische Systeme OstWestfalenLippe

it´s owl

PRESS RELEASE

it’s OWL connects people and machines for Industry 4.0

Hannover, 6 February 2018. Artificial intelligence, smart services and Work 4.0: For the factory of the future to become a reality, we need to better connect people, machines and IT. Concrete approaches and solutions are developed by the technology network it’s OWL – Intelligent Technical Systems OstWestfalenLippe in the north of Germany. Application examples will be presented by 49 exhibitors at the OWL Community Stand (Hall 16 A04).

How do we process the data from our machines to increase productivity and efficiency? How do we develop new services and business models? And how do we use new technology to improve working conditions and relieve pressure on employees? “Companies and research institutes at it’s OWL are working together to develop practical solutions for small and medium-sized organisations to meet these challenges. Only then can we tap into the potential benefits of Industry 4.0”, explains Prof. Roman Dumitrescu, Doctor of Engineering and Managing Director of it's OWL Clustermanagement GmbH. “Our new projects focus on artificial intelligence processes as well as digital platforms and their business models. Our third focus is designing modern workplaces together with employees. We will present initial examples at the Hanover trade fair.”

Data analytics – making machines intelligent

The Lemgo Research Institute Fraunhofer Application Centre IOSB-INA and Institute for Industrial Information Technology (inIT) at the OWL University of Applied Sciences will demonstrate new results from their research on an adaptable production system. The multi-vendor-system displays various ideas and solutions for intelligent automation. One example is using artificial intelligence for condition monitoring. Innovative, self-learning models should facilitate the work of humans in the digital factory and, for example, significantly optimise the process of plant monitoring and maintenance, ideally giving feedback on critical plant and machine conditions even before the loss of production. The algorithms and data capture systems developed at Lemgo not only enable you to identify behaviour, anomalies or time faults in the system, but also allow you to precisely locate them using sensor signals.

Using an anomaly detection system based on models learned from data, the system supports predictive maintenance at the manufacturing plant. A monitor at the plant displays the current status of the manufacturing process and detects any irregularities by analysing and visualising sensor data. For example, if an anomaly is detected in the tank used for filling the packaging material, the system can accurately calculate and display the suspected cause. The system supports the technician, for example, by indicating how a piece of machinery should be repaired or maintained.

New solutions in the area of data analytics will also be presented by the world market leaders in automation technologies: Beckhoff, KEB, Lenze, Phoenix Contact, WAGO and Weidmüller. Visitors to the trade fair will therefore get a unique overview of the

different solutions and the added value they provide. They will be able to experience them first-hand using a machine app with a virtual production environment. Weidmüller shows new solutions for direct communication between machines - including the communicative power supply PROtop, the remote access solution u-link and an innovative IoT controller. Beckkhoff demonstrates cross-company IoT-Communication, Vision-Applications and analysis of all process data on the controller or in the cloud. In this way, energy usage and machine status can be monitored and approaches of predictive maintenance as well as other services can be realized.

Heading towards smart services

The small and medium-sized mechanical engineering companies that belong to the leading edge cluster are increasingly integrating more services into their products. Within data analytics, needs-based services are being provided such as preventative maintenance and automatic ordering of spare parts. For example, BOGE Kompressoren can collect and analyse comprehensive performance data from high speed turbo compressors. Based on the analyses carried out on this collected data, hardware and software can be continuously developed and improved and offered to the customer as an individual solution. While the compressed air station is in operation, a detailed analysis of the actual energy savings is then carried out. The result: the compressed air station is run at maximum efficiency for the complete duration of its lifespan. The investment risk for the customer is minimal, as the installation of software or hardware updates is free. Only the actual measured savings are shared between BOGE and the customer.

Custom-made assistance systems

Whatever technological improvements are made, humans will always be at the heart of the factory. Assistance systems, intuitive operation processes and new development methods facilitate the work of the employees. it's OWL also offers new solutions and business ideas to meet this challenge, which start-ups can adopt to successfully establish themselves on the market.

This has led to the foundation of Assembly Solutions at OWL University of Applied Sciences. The start-up from Detmold develops and configures customised assistance systems to be used by small and medium-sized companies in production, assembly and logistics. Via a projection, the worker can see information on individual operations at the workplace, on items being assembled, on work equipment as well as grab containers. The system can be operated using a multimodal interface with voice, gesture or key inputs. For HORA, a company that produces control valves, Assembly Solutions implemented an assistance system for the assembly of a wide variety of customised actuators. By connecting to the ERP system, the order information is sent directly to the employee and projected in their field of vision. This allows training times to be reduced and assembly mistakes to be avoided. An assistance system used in the manufacture of BOGE Kompressoren significantly increases process assurance and quality, by connecting to, among others, Wi-Fi controlled screw driving technology for torque monitoring and documentation of screw joints.

Virtual development of new workplaces

The Fraunhofer Institute for Mechatronic Systems Design IEM demonstrates how augmented reality can be used in the development of new production workplaces. The company Hella, for example, uses modules made of cardboard that the production planners and constructors use to test and optimise the process of assembling a new headlight. However, this can only be carried out once the prototypes of the components that are to be assembled are ready. With this new technology, the workplace can now be designed beforehand and therefore much earlier. Using data goggles, the planners can see the individual parts and are thus able to virtually mount the headlamp in the real production environment. As a result, the development of the workplace is significantly more efficient, quicker and more cost-effective. Visitors to the Hanover trade fair will be able to see the benefits for themselves at a demonstration.

Exhibitors OstWestfalenLippe Joint Booth Hannover Masse 2018

Companies: Assembly Solutions, Beckhoff, BOGE, Böllhoff, CAE Innovative Engineering, CLAAS, Contact Sofware, DENIOS, Drücker, G. Kraft Maschinenbau, KEB, Krause DiMaTec, Lenze, mediaprojekt, Phoenix Contact, Solihde, steute, target Industria, topocare, Torwegge, WAGO, Weidmüller

Research Institutes: CoR-Lab und CITEC Universität Bielefeld, Fraunhofer IEM, Fraunhofer IOSB-INA, Institut für industrielle Informationstechnik Hochschule OWL, Institut für Systemdynamik und Mechatronik FH Bielefeld

Start Ups and Start Up Initiatives: Clip Hut, One Sales, Semalytics, Syqlo, Value Desk, Viafly, Startup Region_OWL, InnovationslaborOWL, Founders Foundation, garage 33, knOWLedgeCube, Technologiefonds OWL

Netzwerke und Organisationen: Clarion/ FMB Zuliefermesse Maschinenbau, Digital in NRW – Das Kompetenzzentrum für den Mittelstand, Energie Impuls OWL, IHK Ostwestfalen, IHK Lippe, it‘s OWL Clustermanagement, OstWestfalenLippe GmbH, OWL 4.0, OWL Maschinenbau, WEGE Wirtschaftsentwicklungsgesellschaft Bielefeld

Further information and pictures: www.its-owl.com

The Leading-Edge Cluster it’s OWL

In the technology network it´s OWL, more than 180 companies, research institutes, and organizations are working together. In 47 projects, they develop approaches and solutions for intelligent products and production processes. The spectrum ranges from automation and drive solutions over machines, vehicles and devices to networked production facilities. The projects provide new technologies for smaller and medium-sized companies by means of an innovative transfer concept. Awarded in the Leading-Edge Cluster Competition of the Federal Ministry of Education and Research, it´s OWL is regarded as one of the greatest initiatives for Industry 4.0 in Germany.

it´s OWL makes an important contribution to ensure value and employment in OstWestfalenLippe. Since the start of the technology network in 2012, the companies have created 7,200 new jobs. Six research institutes and 23 new courses have emerged. 34 companies have been established.

Learn more about it’s OWL: www.its-owl.com

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