SIEMENS

Press

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Hannover Messe 2018, Hall 9, Booth D35

Siemens presents industry-specific implementation of the Digital Enterprise

- **Booth slogan: "Digital Enterprise – Implement now"**
- **The time for implementation has arrived: Focus on industry solutions**
- **Practical examples and applications demonstrate competitive advantages gained by merging the virtual and real worlds**
- **MindSphere-Version 3.0 on Amazon Web Services (AWS)**

At the Hannover Messe 2018, Siemens will be showcasing a comprehensive series of examples which demonstrate how users can harness the potential of Industrie 4.0 by implementing Digital Enterprise solutions. The focus of the 3,500-square meter booth in Hall 9 is on industry-specific implementation of Digital Enterprise solutions over the whole life cycle. Examples from aerospace, automotive, food and beverage, electronics and machine building as well as the chemical, fiber and oil and gas industries illustrate how companies of any size and from any industry can increase their competitiveness with individual digital solutions – through greater flexibility, efficiency and quality as well as shorter times to market. MindSphere Version 3, concrete use cases and references from Siemens and partners such as OEMs as well as the new global user organization MindSphere World will all be presented in the 700-square meter MindSphere Lounge. Siemens will also be demonstrating how producers can already benefit now from industrialized additive manufacturing, and showcasing Sidrive IQ, the new digital platform for the MindSphere-based evaluation of drive data. Also featured on the Siemens booth will be integrated solutions for industrial enterprises and infrastructure projects in the power utility sector, with the focus on smart energy management using MindApps.

At the booth, Siemens will be showing how today's companies can increase their competitiveness through digitalization – with solutions for digital twinning throughout

Siemens AG
Communications
Head: Clarissa Haller

Werner-von-Siemens-Straße 1
80333 Munich
Germany

the value chain, the open cloud-based IoT operating system MindSphere, and the world leading automation portfolio from Siemens. Integration and digitalization of the value chain provide sustainable competitive benefits through greater flexibility, efficiency and quality in nearly every industry. It provides new opportunities in terms of added value, innovative business models, and future-oriented methods of cooperation.

Siemens will be presenting MindSphere Version 3.0 at the exhibition, which is now available on Amazon Web Services (AWS). Version 3.0 offers a more powerful development environment with open programming interfaces (API/Application Programming Interface) as well as additional analytical features and extended connectivity. The show will also be used to introduce the new international user organization MindSphere World, which has 18 founder members. The aim of this group is to extend the ecosystem surrounding MindSphere throughout the world.

Harnessing the potential of digitalization in the discrete industries

“With the Digital Enterprise Suite we support both product manufacturers and machine builders from the discrete industries in achieving their digital transformation,” says Jan Mrosik, CEO of the Digital Factory Division. “It allows us to create a holistic virtual representation, the so-called Digital Twin, of products, production and performance. Through the knowledge gained from MindSphere, we are also able to continuously optimize the entire value chain of our customers. This applies not only to different industries and traditional producing methods, but also to new technologies such as Additive Manufacturing.” Additive manufacturing will also form a focus of this year’s trade fair presentation. Siemens is the world’s only supplier of integrated software and hardware solutions covering every phase of the additive manufacturing value chain. For users, this means that the entire digital process chain is depicted in a single integrated software environment. The tools required for engineering, simulation, product preparation and 3D printing are merged in an integrated system and can be accessed by means of a standardized user interface. This eliminates the need for data conversion and the associated possible loss of information content. This already offers users the possibility to achieve a rapid transition when scaling up from prototyping and small-series production on single machines to fully industrialized series production.

Siemens will also be showcasing a series of new apps surrounding the field of automation with Simatic systems. The new Simatic MindApps Machine Monitor, Notifier and Performance Monitor are special applications designed for MindSphere which allow users to tap into the benefits of cloud-based services and generate added value. The Simatic MindApps export the relevant data from producing machines or plants for analysis, process it to generate meaningful information and display it on dashboards, or use it as the basis for smart warning systems and message presentation. To ensure that this data is just as secure as the plants and infrastructure it serves, the "Defense in Depth" concept according to IEC 62443 protects against current and future cyber threats.
Siemens is launching a new soft starter generation for everything from the simplest to the most complex drive requirements in the form of Sirius 3RW5. This seamless range of devices designed to ensure a gentle startup for three-phase asynchronous motors from 5.5 to 1,200 kW can be used to implement efficient, future-proof machine concepts with the utmost simplicity and economy.

Individual entry into digitalization for verticals of the process industry
It’s time to leverage the potential and benefit from the advantages of digitalization in order to optimize the entire value chain in the process industries,” emphasizes Jürgen Brandes, CEO of the Process Industries and Drives Division. This applies just as much to new (greenfield) plants as to long-standing legacy (brownfield) plants. An important first step is to make consistent use of static and dynamic data already existing in the company to create transparency across the complete life cycle as the basis for optimization. “Thanks to our profound electrification and automation expertise, we support companies in implementing their individual digital transformation. Our offering is tailored in each case to the added value and the business models of our customers.” This is where the new Siemens “Digitalization Consulting” concept comes into its own. This entails working together with customers to sound out the digital scope of the company over the entire value chain and draw up a digitalization roadmap including a calculation of the investment needed.
The digital twin of a process production plant plays an instrumental role here. Digital twinning takes place during the engineering phase and continues to be updated and enriched by additional data over the complete life cycle of the plant. The ongoing analysis of process data and additional smart sensor data from the field level of a

production plant creates a whole new dimension in terms of transparency, enabling a significant improvement in terms of maintenance and servicing. The digital twin also offers decisive benefits when it comes to commissioning. This is where Version 9.1 of the simulation software Simit enables even simpler combination of virtual plant commissioning and operator training, speeding up actual commissioning by as much as 60 percent and reducing unwanted downtime periods to a minimum, particularly during plant conversion and migration processes.
Another innovation featured at the Hannover Messe is Sidrive IQ, a new digital platform for the evaluation of drive data using MindSphere. It provides plant and machine operators with a whole new dimension in data transparency for installed drive systems, simplifying fleet management and optimizing servicing activity. The continuous analysis of data saves time and enhances plant availability, for instance by the early identification and remedy of possible error sources. These benefits make Sidrive IQ the basis for greater drive technology efficiency and productivity across the entire life cycle.
Time-Sensitive Networking or TSN is another theme featured on the booth. This permits even more robust, reliable and standardized Ethernet communication between automation devices, even under extreme network loads. Profinet network infrastructures will be gradually upgraded in future to integrate basic TSN technology. As a first step towards this goal, Siemens will be demonstrating how TSN-based OPC UA PubSub (Publisher/Subscriber) is used on the control level using the example of a robotic trade fair model.

Smart energy management

Frictionless production runs and continuous processes are impossible to imagine without a constant energy supply. The ever-increasing demand for energy from industry requires new solutions to reduce energy costs by improving efficiency, resulting in increased competitiveness. One focus of the Siemens booth in Hanover will be on the benefits of seamless interaction between reliable and safe power supply solutions, communication-capable measuring devices and sophisticated analytics. This produces the required energy transparency vital to optimum energy management. “This also includes finding smart ways of dealing with the rising flood of data which already exists in the power distribution sector today,” says Ralf Christian, CEO of the Energy Management Division. “Using Digital apps, we can offer our customers smart analytical tools for more efficient operation.” Using the

Spanish automotive manufacturer Gestamp as an example, Siemens will be demonstrating how improved transparency has led to energy savings of 15 percent and to a significant reduction in CO_2 emissions. The data captured is then fed to MindSphere. The MindApp Energy Efficiency Analytics calculates the energy requirement, suggests measures to reduce the load where appropriate, and uses real-time rendering of consumption data from several locations to help to optimize the plants and manufacturing processes in order to reduce the overall energy consumption of the business. “In industry’s search for new ways to reduce production costs, in-house production of electricity is becoming more and more attractive in addition to optimized energy efficiency,” explains Ralf Christian. At Hanover, Siemens will be showing how companies can flatten their demand peaks, exploit fluctuating electricity prices, and generate additional revenue, for instance by participating in the energy balancing market. Issues such as demand response, battery storage systems and control of microgrids are part of the solution.

In addition to the main booth in Hall 9, Siemens is also collaborating closely with its partners in Hall 6 to showcase its PLM software portfolio. Visitors to the “Integrated Energy Plaza” in Hall 27 will be able to find out how the whole integrated system works - from energy production, through distribution and storage to energy demand. In this context, Siemens will be showing its electromobility highlights: Visitors will be able to discover complete solutions for the charging infrastructure and find information on components, charging management systems and complete end-to-end solutions.

This press release and a press picture are available at
www.siemens.com/press/PR2018020169COEN

For further information on Siemens at the Hannover Messe 2018, please see www.siemens.com/press/hm18 and www.siemens.com/hannovermesse

Contact for journalists
Katharina Zoefeld
Phone: +49 172 5876725; e-mail: katharina.zoefeld@siemens.com

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Siemens AG (Berlin and Munich) is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for 170 years. The company is active around the globe, focusing on the areas of electrification, automation and digitalization. One of the world's largest producers of energy-efficient, resource-saving technologies, Siemens is a leading supplier of efficient power generation and power transmission solutions and a pioneer in infrastructure solutions as well as automation, drive and software solutions for industry. The company is also a leading provider of medical imaging equipment – such as computed tomography and magnetic resonance imaging systems – and a leader in laboratory diagnostics as well as clinical IT. In fiscal 2017, which ended on September 30, 2017, Siemens generated revenue of €83.0 billion and net income of €6.2 billion. At the end of September 2017, the company had around 377,000 employees worldwide. Further information is available on the Internet at www.siemens.com