

Achema 2018, Hall 11, Booth C3

Siemens, PSE to collaborate on model-based solutions

- **Strategic collaboration of Siemens and PSE extends integrated digitalization portfolio for process industries**
- **Close linkage of Comos, Simatic PCS 7 and Simit with PSE's gPROMS Advanced Process Modelling technology**
- **Integrated use of Advanced Process Modelling along plant lifecycle**
- **Model-based solutions are essential complements of the Siemens portfolio**

Siemens AG and Process Systems Enterprise (PSE), the Advanced Process Modelling (APM) company, today announced at Achema that they have signed a long-term collaboration agreement to bring the power of PSE's gPROMS APM technology to Siemens automation and digitalization offerings for the process industries. Under the agreement, the companies are bringing to market a new set of solutions for long-term equipment and health monitoring, soft-sensing, prediction of future process performance, real-time optimisation, and operator training incorporating high-fidelity models. The solutions are all based on the combination of process models that embody deep process knowledge with real-time as well as historical plant data.

Typical customer benefits of such applications include better operations through enhanced, up-to-the-minute decision support information; improved maintenance

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scheduling through run length prediction; improved economics from real-time optimisation; and improved asset integrity from better health monitoring.

The technologies are capable of driving next-level productivity enhancements to operations in the Chemicals & Petrochemicals, Oil & Gas, Refining, Pharmaceutical, Food & Beverage and Water industries. Future developments will see similar model-based approaches integrated over the whole lifecycle of a process plant.

At Achema, Siemens and PSE are demonstrating digital process twin technology for an ethylene plant, implemented using PSE's gPROMS Olefins Operational Excellence tools. Industrial application of such techniques on a large-scale ethylene plant has demonstrated a two percent improvement in yield. Also demonstrated are a soft sensing application and model predictive control for a continuous wet granulation tablet manufacturing in pharma.

Eckard Eberle, CEO of the Process Automation Business Unit (PD PA) and Director in charge of the Siemens booth at the Achema, says: "Siemens has already made Integrated Engineering a reality; by collaborating with PSE, we are taking a further step into model-based operations with two very complementary sets of technologies. This is digitalization at its best." Costas Pantelides, MD of PSE, says: "The combination of high-fidelity predictive models and real-time data is enormously powerful. This is a time of extraordinary opportunities for the process industries, made possible by the culmination of many years of development in advanced modelling and in the enabling computer science and mathematics".

Pantelides concludes: "There is an increasingly compelling case for capturing deep process knowledge in the form of predictive models, which can come naturally from R&D and engineering design activities, then using these within a digitalization framework to generate value at every step."

This press release is available at

www.siemens.com/press/PR2018060207PDEN

Joint Press Release
by Siemens and Process Systems Enterprise

A press picture of the contract signing is available from June 13th at
www.siemens.com/press/PR2018060207PDEN

For further information on Siemens at Achema 2018, please see
www.siemens.com/achema and www.siemens.com/press/achema2018

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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. With its publicly listed subsidiary Siemens Healthineers AG, 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.

Process Systems Enterprise Ltd (PSE)

PSE (www.psenderprise.com) is the world's foremost provider of Advanced Process Modelling (APM) software and services to the process industries. Companies apply advanced process models to explore the process decision space rapidly and effectively, in order to reduce uncertainty and make better, faster and safer formulation, process and product design and operating decisions. PSE is committed, through its gPROMS APM products, to defining, developing and driving the adoption of next-generation process modelling software and workflows capable of supporting industry digitalization strategies. The unique advantages of PSE tools are the combination of high-fidelity models, powerful mathematical optimisation and global system analysis capabilities, and high-performance computing (HPC) capabilities for rapid and robust solution of complex problems. Use of PSE's technology and services results in faster innovation, improved process and product designs, enhanced operations, reduced risk, more effective R&D and experimental campaigns and better capture and transfer of corporate knowledge across the organisation. PSE's own ability to innovate was recognised with the award of the prestigious Royal Academy of Engineering MacRobert Award for Engineering Innovation, the UK's highest engineering prize.

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