

Atos and Siemens introduce Digital Twin solution within the global pharmaceutical industry

Atos, a global leader in digital transformation and Siemens, a global engineering leader, are working together with the pharmaceutical industry to improve production with an innovative solution based on a digital replica of the pharma production process. Currently being tested in the pharmaceutical industry, this innovative “Process Digital Twin” for pharma manufacturing – powered by IoT, AI and Advanced Analytics – is designed to provide improved efficiency and flexibility in the manufacturing of pharmaceutical products.

Based on the pilot study, this potentially disruptive solution opens up new opportunities, such as a sustainable process development – reducing overall experimentation time and waste, ensuring constant quality and moving to new “quality by design” models to get the product right the first time. The solution also offers optimized measures for process quality and reliability.

The production and release of pharmaceutical products are complex and lengthy processes. To meet these challenges, one of Atos and Siemens’ global pharmaceutical partners has decided to test a new innovative solution, built and developed through a joint investment and business collaboration from the Atos-Siemens strategic global alliance. The “Process Digital Twin” is a complete virtual

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replica of a specific step in the manufacturing process, connected with IoT sensors installed on the actual plant.

It generates volumes of complex data and gives an instant view of all details of the operations. By pairing virtual and physical representations of the process, and using predictive models and real-time analytics, Atos and Siemens are helping the pharmaceutical industry to reinvent key elements of the manufacturing environment.

“We are delighted to bring digital technologies to the heart of the global pharmaceutical industry, helping it meet the multiple health challenges of today and tomorrow.” says Paul Albada Jelgersma, SVP, Global Head of Codex services for IoT & Siemens MindSphere at Atos. “With the Process Digital Twin developed by Atos and Siemens, a solid digital footprint of pharmaceutical products is created throughout the process development cycle, starting from the design phase, all the way to production.”

“Digitalization at every point along the value chain will likely help the pharma industry get pharmaceuticals from the lab to the patient more swiftly.” says Rebecca Vangenechten, Head of business Pharmaceutical Industry at Siemens. “This was a challenging journey where the partners created the basis for future process development & manufacturing, based on science, technology and innovation”.

Atos provides its expertise in IT infrastructure, consulting, integration and data science, notably from its Codex expertise in AI and IoT solutions and services – while Siemens provides its Digital Enterprise expertise in OT systems for Pharma, notably with Simatic Sipat for real-time quality monitoring and StarCCM+ & HEEDS for process modeling & simulation.

The nature of Atos and Siemens' pre-integrated Digital Twin solution allows it to be deployed to production processes of any scale or complexity. By adjusting the technological building blocks Atos and Siemens can replicate Digital Twin use case to every new client – within pharmaceutical, chemical, process manufacturing industries and other markets – more efficiently.

Background information

Change at the top of the Pharma Vertical at Siemens: Rebecca Vangenechten, 35, assumed responsibility for the pharmaceuticals sector business, which is headquartered in Karlsruhe, at the start of April. The Belgian succeeded Bart Moors, who now works at Siemens as head of Comos Industry Solutions. "New illnesses call for new cures and growing competition requires faster, leaner processes in all areas of pharmaceutical companies. Particularly the digitalization of pharmaceutical production is helping to shorten time-to-market while also improving quality," Vangenechten said. And this is precisely where Siemens Pharma brings its expertise to bear: Digital Enterprise is a portfolio for the digital transformation with solutions for the specific demands of the pharmaceutical industry. With both management and pharmaceuticals expertise from her education and professional experience, Vangenechten is ideally prepared for this position. After earning a master's degree in bio-medical sciences, she went on to earn another master's degree in global management. She began her career at Siemens in July 2009 as a Business Development Consultant at Siemens in Belgium, working with end customers in the pharmaceuticals industry. She then spent five years working as Global Account Manager for a large company in the chemicals and pharmaceuticals industry at the Siemens locations in Frankfurt and Karlsruhe. Before taking on her current position as head of the Pharma Vertical, Vangenechten was responsible for Process Automation in the Middle East Region.

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