

Press release

IMMEDIATE RELEASE

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New gPROMS Process – process modelling and optimization for the digital world

Siemens enters process simulation & optimization market with technology-leading digital process twin capability

LONDON, 14 April 2021 --- Process Systems Enterprise (PSE), a Siemens business, today launched its rebranded gPROMS Process advanced process modelling environment.

Formerly known as gPROMS ProcessBuilder, gPROMS Process 2.0 is the first major release since PSE was acquired by Siemens. Eckard Eberle, CEO of Siemens Digital Industries Process Automation division, says “the significantly enhanced capabilities and functionality you see in this release reflect the substantial investment Siemens is making into product development within PSE to provide the process industries with a new generation of digital tools.”

Costas Pantelides, PSE CEO and architect of the gPROMS platform, says “The name change signifies a break with the past. Until now, ProcessBuilder has been an environment for sophisticated users who are typically running high-value, complex optimizations. This is the first release in a major, multi-year development programme that will bring the cutting-edge capabilities of the gPROMS platform to users across process organisations”.

The release contains significant new model library content, including a new polyolefins library to support online nonlinear control applications for polymers such as LDPE and HDPE; a new advanced model library for electrochemical reactors to support the optimization of clean energy and hydrogen systems; a data-driven model library for hybrid modelling that combines data-driven elements with first-principles models; new batch distillation and decanter models for speciality chemicals; enhancements to the multistream heat exchanger for LNG and other cryogenic process optimization and to PSE’s industry-leading catalytic reactors model library; and a unique new cyclic steady-state solver to speed up modelling of processes such as adsorption.

gPROMS Process makes use of an all-new integral gPROMS Properties that includes all industry-standard thermodynamic models plus PSE’s industry-leading SAFT- γ Mie, which allows accurate prediction of physical properties and phase behaviour with minimal experimental data. “With our extensive physical properties developments, we aim to provide the world’s leading materials modelling capability within a process simulator”, says Pantelides. “gPROMS Properties covers a wide range of system types, including strongly associating, polymers, active pharmaceutical ingredients, within a single properties package”.

gPROMS Process also supports the automatic generation of fast-solving surrogate models, a capability that has already been extensively proven on large-scale, multi-site optimization projects. A new interface to Siemens’ Computational Fluid Dynamics STAR-CCM+ product simplifies combining process and hydrodynamics models for detailed equipment design. Support for the gPROMS Web Applications Platform (gWAP) makes it easy to supply models to ‘non-modelling’ users across the organisation via web interfaces.

gPROMS Process is unique among process simulation tools in that it was designed from the ground up to support all aspects of the process lifecycle, from R&D to operations. Its comprehensive digital design capability makes it possible to explore the process decision space rapidly and effectively, and determine the optimal values for multiple design variables simultaneously to arrive at truly optimized designs in the minimum time.

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gPROMS Process models can be exported for implementation online within the gPROMS Digital Applications Platform (gDAP), for real-time monitoring, soft-sensing and real-time optimization applications coupled with plant data.

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