

Bentley, Siemens Partner to Add Value for Plant Owners

You work in a polyethylene processing plant and come in to work to find that a critical piece of equipment looks like it's about to fail. Production has been throttled to buy a little time, but you need to determine, quickly, how to get back to full capacity. Where do you look for the equipment data? How do you figure out why this particular piece of equipment was installed? Learn its maintenance history? When you *do* find this information, can you trust it?

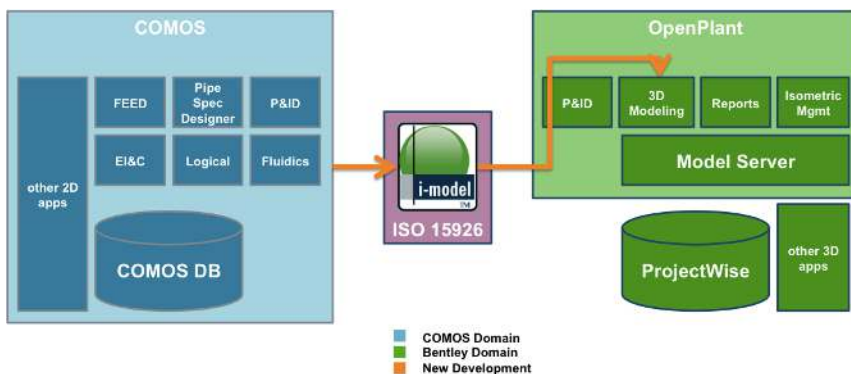


Image courtesy of Bentley Systems, Inc.

Under an agreement announced today at the Hannover Fair, Bentley Systems and Siemens Industrial Automation are extending their strategic partnership to advance interoperability and data availability for the process industries by integrating OpenPlant and Comos. When complete, this interoperability will ensure that designers, engineers, constructors and operators have all of the relevant information for an asset, both 3D and conceptual/2D in a form that is easily accessible, complete and accurate across the lifecycle of the plant.

Aligning the Conceptual & Physical

OpenPlant is Bentley Systems' next-generation plant design solution, built from the ground up to use the ISO 15926 data model. OpenPlant's 2D and 3D design and engineering analysis tools are used to model pipe networks, equipment, structural supports, cable trays and raceways, while the broader Bentley portfolio is used to design roads, buildings and other features of the plant site. The resulting model of the plant can be used far beyond design, for downstream activities such as construction and operations, and is an important asset of the overall project.

Comos is often used alongside 3D plant modeling solutions to manage design data, tying together P&IDs, electrical and instrumentation, control systems and other information in a single, consistent hub to give design engineers and operating personnel the appropriate data at each phase of a plant's lifecycle. When Comos is integrated with SIMATIC PCS 7 for automation, Siemens provides a complete process, instrumentation and control system workflow, from system design through automation, operation and maintenance.

The interoperating OpenPlant and Comos will enable plant designers and owner/operators to validate Comos P&IDs, electrical schematics and other data against the 3D model in OpenPlant and manage markups from 3D back to Comos, creating an effective round-tripping mechanism. Legacy models as well as models from third party systems can be incorporated in the design workflow through i-model containers. This maintains the value of existing asset data and can jump-start new designs. Later phases of this project will allow Comos users to do offline editing of P&IDs and other schematics.

"Bentley and Siemens extend their partnership to advance interoperability for the process industries."

OpenPlant users will ultimately be able to integrate their electrical and instrumentation design workflows with Comos, and see those designs tied more directly to plant management. With this agreement, Bentley and Siemens create a bridge for plant data that spans from conceptual engineering to operations and maintenance.

Downtime Isn't an Option

We've long believed that much of the value created in the design process is lost in the handover to operations. The interoperability between Bentley Systems OpenPlant and Siemens Comos forges a much closer connection between the conceptual design of a production process and the controlling instrumentation of an operating plant. This coupling will enable owners and operators to recapture some of this lost value and create new value through the smoother flow of information during the plant's operational life.

“Designers, constructors & operators have all relevant information... in a form that is easily accessible, complete & accurate.”

Back to your dilemma: that malfunctioning piece of equipment. In an integrated Comos/OpenPlant environment, you begin troubleshooting with Comos process and performance catalogue data and the most recent diagnostics from SIMATIC PCS 7. You use Bentley Navigator to explore the 3D model of the plant, perhaps including a recent laser scan point cloud, to fully understand the physical layout. You use Comos P&ID or

OpenPlant PowerPID to refine your idea for the fix. You design in OpenPlant Modeler to ensure that your fix works in the physical, 3D world. You iterate between 2D and 3D to ensure consistency since a disconnect between the 2D concept and the 3D, purchased and installed equipment could be disastrous. Along the way, you may collaborate visually with Bentley Navigator or at the data level via the Comos Platform. You may even send models to iPads or other mobile devices to work with suppliers and others on the plant floor. At the end of the day, you've created a viable solution that takes into account the conceptual, physical and attribute data for your process. You get the line back to 100% operating efficiency as quickly as possible.

“An ISO 15926-compliant data model maximizes value ... in CAPEX & OPEX for owners & contractors.”

With this interoperability project, Bentley Systems and Siemens will provide engineering firms and operators in the process industries access to a complete, consistent and accurate digital plant asset. The information mobility created by using an ISO 15926-compliant data model maximizes value in the capital expenditure phase, when design data is created and must be consistent across many disciplines. During the much longer operational life of the plant, when operating expenditures are tuned to maximize profit, consistent data can significantly improve maintenance workflows. This is an exciting development for asset owners-operators and their contractors, and we'll be watching with interest to see industry adoption.

This brief was created by Schnitger Corporation at the request of Bentley Systems, Inc. The analysis and opinions presented here are those of Schnitger Corporation. For more information or to comment, please visit www.schnitgercorp.com.

