



ISO 15926

Lifecycle data for process plant

For 3D models, Bentley is developing an ISO 15926-based model management system that will allow users to execute model-centric plant design in a distributed environment using different 3D modeling systems.

A Bentley White Paper by Ken Adamson

Ever since CAD and 3D modeling were first computerized, there has been a need to exchange 2D and 3D geometry information between different CAD systems. In order to provide a common file format for this geometry information exchange, the development of standards began.

The industry required a standard that could record changes to a process plant throughout its life – a data warehouse that would contain information about:

- The requirement for a process plant and changes to the requirements
- The design for a process plant and changes to the design
- The physical objects that exist in a process plant and changes to these physical objects

As a result, ISO 15926 “lifecycle data for process plant” was proposed. The ISO 15926 initiative has been steadily increasing in maturity ever since, and with that increase in maturity so the interest and the adoption of this important standard has gained acceptance throughout the plant industry. By going beyond data handover, ISO 15926 is fast becoming the standard for interoperability and collaboration between complex data models of all types, including both 2D and 3D data models.

With the broad industry acceptance of this standard, organizations are now looking to software provid-

ers to support the standard within their product offerings so the plant industry can move to delivering content using this open standard. This paper outlines the benefits of adoption that this standard brings to the industry, how Bentley is responding to the challenge, and where the industry is heading.

Background

The ISO 15926 initiative is an outgrowth from other ISO initiatives that have defined particular domain data models in the process industry. The early 1990s saw the definition of ISO 10303 (STEP) with Part 221 defining the 2D schematics environment, Part 227 the 3D model, and Part 231 the process engineering content. ISO 10303 Part 227 has been successfully implemented as the XM-pLant data model and has been used as the basis of conversion from one plant design system to another for several years now.

ISO 10303 Part 221 took a more generic approach to model definition and was the basis for the offshore oil and gas data model initiatives driven by the POSC Caesar organization (<http://www.posccaesar.com/>). To unify these various data models, ISO 15926 was created as a standard description of plant-related objects that provides a standard vocabulary and description that can be inter-

changed across diverse systems and across the lifecycle of the asset or facility.

To date, POSC Caesar and Det Norske Veritas, known as DNV (<http://www.dnv.com/>), have been the principle driving forces behind the creation and maintenance of the ISO 15926 standard. More recently, the FIATECH consortium (<http://www.fiatech.org/>) joined forces with these two organizations to accelerate adoption of the standard by the industry and identified multiple areas in the FIATECH Capital Projects Technology Roadmap (<http://www.fiatech.org/projects/roadmap/cptri.htm>) where the benefits of the use of the standard can be gained.

Usage and benefits

Some examples of the business benefits that can be realized through adoption of the ISO 15926 standard include:

- Selection of best-fit software for each organization. Different organizations have different software needs and being able to select the software and systems that provide the most benefits for an individual company’s internal work process and practices without being limited to a proprietary format or a particular software vendor means that the organization can focus on the best tool for the job. This saves unnecessary

