

# AVEVA Laser Modeller

From laser scans to digital as-built plant, in one integrated process

**Owner Operators need to fully understand the as-built condition of their plants, to ensure the plants operate productively, to address safety and regulatory compliance, and to launch brownfield upgrade and revamp projects.**

Unfortunately, for many older plants this is a significant challenge. As-built status is rarely known with any degree of completeness or accuracy. Information is often unreliable or hard to access; frequently in the form of paper or scanned documents. Transforming these operations-critical resources into a digital as-built plant is a manually intensive, lengthy and costly process. In recent times, the advent of laser scanning has speeded the process up, partially unlocking the digital potential of as-built information; however, modelling the laser data has remained a labour-intensive undertaking.

AVEVA Laser Modeller™ is the first solution to fully address this challenge, by rapidly and cost-effectively transforming laser scan data into intelligent, as-built 3D plant models. Compatible with laser data from leading vendors, it automates most aspects of the modelling process, producing a fully validated AVEVA PDMS™ 3D model, at a fraction of the time and cost of conventional techniques. Accelerating the modelling process in this way unlocks the ability to capture an accurate and comprehensive digital version of the physical plant.

Laser Modeller combines with other AVEVA laser data solutions (AVEVA Laser Model Interface™, AVEVA IntelliLaser™), information management solutions, and Integrated Engineering and Design solutions, to create a powerful, digital as-built plant, where brownfield information is truly evergreen.



Photo-realistic laser scan data is a useful visualisation tool, but Laser Modeller adds huge engineering value, by enabling it to be converted directly into an intelligent, as-built, 3D PDMS plant model



## Business Benefits

- Huge productivity gains through greatly reduced costs and compressed timescales.
- Exploits the value of existing PDMS catalogues and specifications.
- No need to produce expensive intermediate 3D CAD geometry models.
- Produces validated and intelligent PDMS 3D plant models using operator's preferred component catalogues.
- Model produced is fully compatible with the full range of AVEVA's integrated engineering and design solutions.
- Enables subcontractors to provide brownfield engineering services.
- Works with laser scanning data from the market's principal laser scanning vendors.
- Easy-to-use, intuitive user interface and workspace.
- Supports wide range of industry engineering specifications and national design codes.

# Overview

Laser scanning technology has advanced rapidly and can now capture visible 3D data to extremely high levels of accuracy and resolution over considerable distances. However, laser scan data has no inherent engineering intelligence. It cannot understand tag data or line numbers, or identify specific equipment. Integrating laser data with an existing 3D plant model can help provide the missing intelligence, but if there is no model available, building one is an expensive and lengthy undertaking.

The solution is to use Laser Modeller to directly generate an intelligent PDMS 3D model, eliminating unnecessary and time-consuming manual intervention. There is no requirement to create intermediate geometry in order to build the 3D model. Instead, the laser scan data is intrinsically linked with PDMS component catalogues, creating an intelligent and validated 3D model. The model accurately reflects the as-built facility and also forms the basis of a common digital infrastructure for all as-built information and deliverables, through integration with AVEVA's information management and Integrated Engineering and Design solutions.

Laser Modeller forms a part of a full solution that includes both products and services. The products can include an optional capability to validate the relationship between the laser point cloud data and the PDMS as-built model, by overlaying one on the other, using AVEVA Laser Model Interface. The services accommodate wide variations in operators' engineering work processes and data structures, providing tailored deployment appropriate for each distinct operational environment.

## Key Features

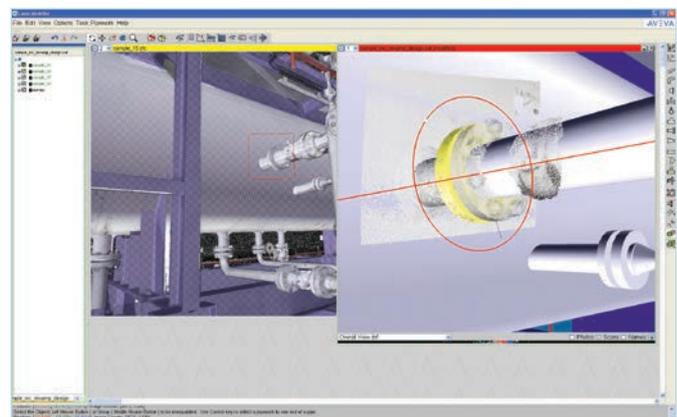
- Visualises 3D point cloud data sets, panoramic laser scan images and site plans simultaneously, in the user workspace
- Creates an intelligent 3D plant model of the as-built plant from laser scan data
- Generates intelligent 3D plant components for piping, steelwork and equipment items, component by component
- Enables editing and manipulation of intelligent 3D plant model in user workspace, including: extend, intersect, rotate, mark-up, annotate
- Enables as-built PDMS model to be fine-tuned to meet the needs of the client's engineering conventions and site-specific requirements
- Enables additional validation of data through optional use of AVEVA Laser Model Interface



Laser Modeller produces the intelligent 3D as-built model by selecting a standard component from the PDMS catalogue, corresponding to the geometry derived from the laser scan data. In this example, we show pipework...



...in this example, steelwork...



...in this example, an equipment nozzle. Again, the laser scan data and intelligent 3D PDMS modelling are clearly shown.



AVEVA Laser Modeller is one of AVEVA's Design products, which create 3D models for detailed design and produce all associated deliverables

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