PanoMap™ Intelligent Laser Scanning Interface to SmartPlant® 3D

PanoMap, CSA’s powerful laser scan viewer, displays scan data in a seamless, photo-realistic view. It provides effective access to the LSSM (Laser Scan Space Manager) database which manages the laser scans with no limit to the number of scans.

Using this technology, CSA has developed a bi-directional interface to and from its LSSM database to Intergraph’s SmartPlant® 3D (SP3D) design environment.

Views within SP3D

- 3D scan displayed with highlighted intelligent pipeline in wireframe
- Pipeline model to be reviewed within scans
- 3D scan displayed with highlighted pipeline shaded
- 3D scan displayed within SP3D

www.csaatl.com
Types of Access Formats
The interface to SP3D is provided in these formats:

- Photo-realistic scan representation providing user-friendly interface to support design retrofit functions
- “Point Cloud” data with applied intensities
- Intelligent 3D models created using PanoMap Laser Scan Intelligent Modeler
- 3D CAD surface representation

Point Cloud Interface
Within the SP3D project, the user selects a desired volume of design for extraction from the LSSM database.

To provide the best view of scanned data, the user also has available the original scanner view locations.

The Point Cloud data with intensity is extracted and provided for design work. Selected Point Cloud data can be manipulated in any view.
Intelligent 3D Models from Laser Scans

This support is provided using the PanoMap Laser Scan Intelligent Modeler. Using this modeler, the data provided to SP3D uses standard SP3D libraries and specifications, and is fully available for design within SP3D.

PanoMap Provides the Following Functionality

- Specification-driven modeling functionality using laser scans
- Automatic fitting of piping components
- Specialized component libraries oriented for automatic fitting of the components into laser scan space
- Automatic pipe routing capability to complete the pipe runs
- Powerful support for small bore piping, instrumentation, flexible pipes, tubing, etc.
- Piping libraries and specifications fully consistent with SP3D technology

3D Surface CAD Interface

The LSSM database also contains a surface 3D CAD representation of the laser scan space.

This representation provides an alternative, more easily visualized format of the laser scan data. The interface to SP3D is similar to the Point Cloud data interface.

The surface CAD representation is provided in Intergraph SmartPlant Review as well.
Interface from SP3D to PanoMap

PanoMap provides extensive functionality to access laser scan databases, specifically designed to manage large-scale laser scan databases. The user can export from SP3D design project to PanoMap and use a variety of PanoMap functions. These functions include:

- User-friendly visualization of the design against scan space using a realistic, photographic-quality viewing format
- Powerful laser scan measurement and dimensioning capability
- Easily viewed interference checking with obstructing elements clearly color-coded
- Intelligent labels and tag numbers
- Access to other electronic documents and databases
- Equipment rigging and removal simulation
- Construction reviews using laser scans with new design

For more information contact Olga Burger  burger.o@csaatl.com

770-955-3518
Construction Systems Associates, Inc.
www.csaatl.com