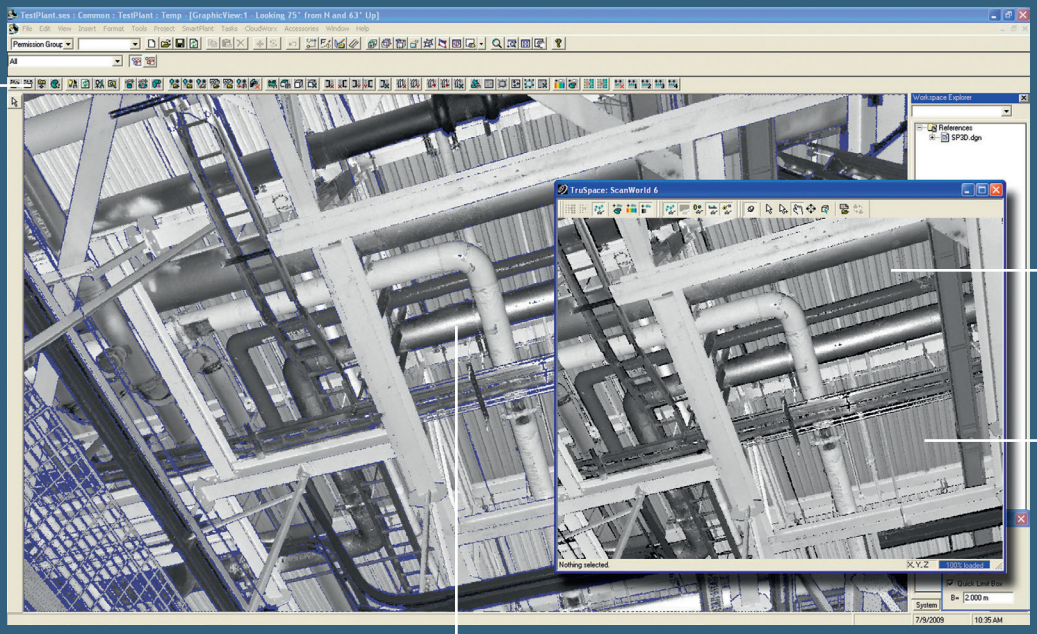
Leica CloudWorx 1.2 for SmartPlant 3D

Point Cloud Plug-in Software



Effective management and use of as-built laser scan data
Leica CloudWorx 1.2 for SmartPlant 3D is a plug-in for efficiently manipulating as-built point cloud data – captured by laser scanners – directly within SmartPlant 3D for better retrofit design, construction & operations. It provides a virtual site within SmartPlant 3D, for greater confidence in assessing potential construction and operational impacts of the new design.

Take advantage of the SmartPlant 3D interface and tools to shorten the learning curve of working with laser scan data. Leica CloudWorx and the powerful Cyclone™ point cloud engine let users efficiently visualize and process large point cloud data sets. Users can create accurate 2D and 3D as-builts, check proposed designs against existing conditions, perform critical construction & fabrication QA, and more ... all directly within SmartPlant 3D.

CloudWorx is faster and easier than other plug-ins. A unique TruSpace™ "view control window" provides intuitive, panoramic viewing so users can comprehend point clouds better. TruSpace also lets users manipulate point clouds faster and directly "jump to" nearby scanner locations. A unique Object Database architecture even lets multiple users access all the scan data without having to segment it.

Features and Benefits

- Fast manipulation of scan data
- Slices, Half-Space Sections, and Limit Boxes
- Find pipe center construction lines and diameter
- Accurate tie-ins, clash checking & reporting
- Direct measurements from point clouds
- Multi-user simultaneous network access
- Supports any laser scanner

- when it has to be **right**

Leica Geosystems

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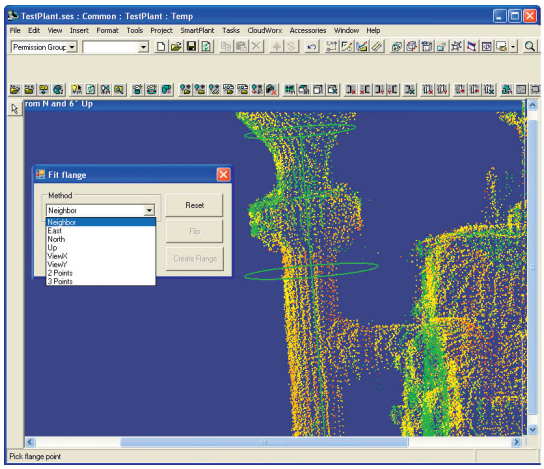

Intelligent point fitting tools assit in finding flange faces at pipe centerlines. This ensures users can identify exact and accurate tie-points, a very important part of modeling as-built piping.

Conceive and Design in Context with the Existing Environment
Design teams can conceive, design, visualize, and dynamically interact in context with the real world "as-found" point cloud conditions. Users experience a virtual site presence within SmartPlant 3D.

Powerful Point Cloud Management & Measurement
Users can quickly, efficiently, and effectively manage vast amounts of point cloud data. "Cutplane Slices and Half-Space Sections" and/or "Limit Boxes" provide a quick and easy way to navigate point cloud data. Measurements are taken using familiar SmartPlant 3D measuring tools.

3D As-Built Modeling
Pipe center lines and diameters are automatically generated by selecting a single cloud point on the pipe surface. Using these construction lines and the SmartPlant 3D native modeling tools, users can create catalog-based intelligent as-built piping systems. Users can also use the point cloud points to model structures, duct work, electrical tray systems, vessels and equipment.

Automated Point Cloud Clash Detection and Reporting "Clash Manager"
CloudWorx provides powerful clash detecting and reporting tools for checking point clouds against SmartPlant 3D models. All interfering points within a user-defined region are visually highlighted and itemized. The clash manager creates a database for managing, tracking, assigning and classifying clashes. A powerful navigation feature lets users easily pull-up isolated views of any clash.

Versatile Support of Multiple Scanner Formats
Leica CloudWorx for SmartPlant 3D users can take advantage of spatial scan data from any laser scanner via direct import of industry-standard ASCII-based data formats. In addition, Leica CloudWorx for SmartPlant 3D directly accepts, without any data format conversion steps, compact native data formats from the industry's most popular scanners. These include all models of Leica Geosystems HDS time-of-flight and phase-based laser scanners, all Cyra scanners, and selected scanners from other vendors.

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Large point cloud mgt	3D limit boxes, slices, interactive visualization of massive data sets Cyclone Object Database Technology: fast efficient point cloud mgt.
Rendering	Level of Detail (LOD) graphics, "Single pick" point cloud density control
Visualization	Intensity mapping, True color, TruSpace panoramic viewer ■ Select view point from key plan ■ Drive CAD viewpoint from TruSpace ■ Quick limit box in CAD from single pick in TruSpace ■ Send point picks from TruSpace to CAD commands ■ Include background image Limit boxes, slices, cut planes
Measurement	3D point coordinate, point-to-point, point-to-design entity
Modeling	Pipe center construction line generation Pipe diameter Drive native modeling commands using point cloud pick points Flange Tie-Point Location Tool
Interference Checking	Check designs for interferences with point clouds using SmartPlant clash tool and highlight interfering points

Hardware and System Requirements
Processor: 2 GHz Dual Core processor or better
RAM: 4 GB for 32 bit OS and 8 GB's for 64 bit OS
Hard Disk: 1 TB SATA
Large project disk option: RAID 5, 7, or 10 with SSD drives
Network card: Ethernet (required for licensing)
Display: NvidiaGeForce260 or ATI 5600 or greater (with latest drivers)
Operating system: Microsoft 7 or Vista* (32 or 64), or Microsoft Windows XP (SP2 or higher) (32 or 64), or Windows 2000 (SP3 or higher with up-to-date patches)
File System: NTFS
Intergraph SmartPlant 3D Support: SmartPlant3D 2009-2011 R1
* Some systems may not support Windows Vista Desktop Windows Manager (DWM) with Leica Cyclone and must be operated in Windows Classic Look.

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