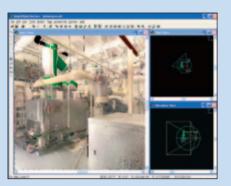
Leica CloudWorx 4.2 for Intergraph SmartPLANT® Review

Powerful, versatile solution for using laser scan data in Intergraph SmartPlant® Review



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is the first point cloud solution to provide Intergraph users with the convenience and added value of working with rich as-built laser scan data directly within Intergraph SmartPlant Review.

High-Definition Surveying™ or HDS™ (also known as laser scanning) offers the most accurate, complete, cost-effective way to collect and work with as-built information for existing facilities. Intergraph users have long enjoyed the capability to work directly with laser scan data within PDS using MicroStation-based CloudWorx solutions. Now they can enjoy the same benefits in Intergraph's latest design review platform.

Review and Visualize in Context with the Existing Environment

Users enjoy a virtual site presence within their native review environment. Project and design teams can review, visualize, and dynamically interact with real world "as-found" point cloud conditions and a fully-rendered PDS or SmartPlant 3D design model. The result is greater confidence in assessing a design's impact on construction and/or operations.

Powerful Point Cloud Management & Measurement

Leica CloudWorx for Intergraph SmartPlant Review users can quickly navigate and manipulate point cloud data. For any viewpoint, the application automatically selects the best set of data to load, plus it allows users ready access to all data without having to chop up scan data sets into smaller blocks. To quickly navigate to areas of specific interest, users can apply handy "Cutplane Slices and Sections" and/or spatial "Limit Boxes" and recall the defined partition on demand. Users can also use SmartPlant Review tools for direct measurement.

Automated Point Cloud Interference Detection

CloudWorx for Intergraph SmartPlant Review allows users to automatically detect clashes between modeled objects and point clouds, with results based on a user-defined tolerance threshold setting. All scan points indicating a clash within the defined threshold are visually highlighted.

High Accuracy Plus High Performance

The Leica CloudWorx for Intergraph SmartPlant Review application is based on Leica Geosystems' Cyclone point cloud foundation, which lets users enjoy both high accuracy and high performance point cloud management. Leica's point-based representation – in contrast to volumetric or "voxel" based representation approaches – preserves the highest accuracy of the raw scan data. From a performance standpoint, Leica algorithms treat data volumetrically for efficient processing, storage, and sharing.

Versatile Support of Multiple Scanner Formats

Intergraph users can take advantage of geometric scan data from any laser scanner via industry-standard ASCII-based data formats. In addition, Leica CloudWorx for Intergraph SmartPlant Review directly accepts, without any data format conversion, 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. This capability to accept native formats from the industry's most popular scanners provides users the opportunity to take advantage of increased office efficiencies via the largest network of scanning service providers and installed base of scanners.



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Features Benefits Large Point Cloud and Model Support **Point Cloud Management** Easy to Learn and Easy to Use Efficient loading By scanner location Integrated into existing SmartPlant Review design Visualization and work processes **Interference Checking** Navigation Short learning curve Check designs for potential interferences Cyclone Object Database Client/Server technology Fast, Accurate, Comprehensive, Reality-Based with point clouds - Fast data processing Highlight interfering points Comprehensive as-built data - Efficient data management User-defined parameters Efficient information extraction tools Rendering Higher confidence as-built projects using **Point Cloud Archiving** Level of Detail (LOD) graphics sophisticated environment visualization Point clouds as historical as-built record "Single pick" point cloud density control Supports Wide Range of Applications Intelligent memory management Concept validation Visualization Engineering and construction planning View point clouds with: As-is condition assessment for range of applica-- Intensity mapping tions including retrofit and revamp projects - True color Verify Designs with Detailed Point Cloud Data **Display Control** Facilitate adjustments to proposed retrofit designs Control over: for clash-free installation - Displaying point clouds Support construction monitoring - Snapping to point clouds Minimize or Eliminate Site Revisits Flexible point masking: Detailed point clouds archived in Cyclone database - Fence provide data on as-needed basis - Section (half-space) - Slice Workgroup Support - Limit box (volume clipping) Flexible licensing and enterprise usage options. Licensing options include node-locked, floating, Point Cloud Management or Leica EnterpriseElite subscription licensing. Limit Box Manager Database sharing via Cyclone-SERVER or via Cutplane Manager (sections, slices) Terminal Server access. Hide Regions Manager (fences) Layers in Cyclone database System Requirements Measurement - Support Intergraph Surface Processor: 2.0 GHz Pentium® 4 or higher RAM: 512 MB RAM (1GB or more recommended) Measuring Hard Disk: 2 GB 3D point coordinate Network card: Ethernet (Required for licensing) Point-to-point Display: SVGA or OpenGL accelerated graphics card Point-to-design entity Operating system: Microsoft Windows 7, Microsoft Vista (32 or 64), or Microsoft Windows XP (SP1 or higher) (32 or 64) File System: NTFS Compatible with Intergraph SmartPlant Review 2009-2010

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