



CLOUDWORX PDS®

PERFORM 2D AND 3D DESIGN WITH POINT CLOUDS

Benefits

- Fast manipulation of point clouds in PDS
- Tracing and auto-fitting of pipes, surfaces, 2D lines, polylines, and arcs
- Definition of accurate tie-ins
- Point cloud clash-checking against 3D CAD

PDS® is a comprehensive, intelligent computer-aided design/engineering (CAD/CAE) application for plant design, construction, and operations. Production-driven, it helps EPCs and owner operators deliver the best design possible – and do it more efficiently to reduce the total installed cost of the project.

The CloudWorx add-on uses the Leica Geosystems HDS Cyclone™ software platform to provide access to point cloud data inside PDS. This powerful combination enables you to perform a plant walkdown without leaving the comfort and safety of your office!

CloudWorx PDS® is the most efficient and popular plug-in software for using as-built point cloud data – captured by laser scanners – directly within PDS.

Take advantage of the familiar PDS interface and tools to shorten the learning curve for working with laser scan data. Efficiently visualize and process large point cloud data sets. You can create accurate 2D and 3D as-builts, check proposed designs against existing conditions, perform critical construction and fabrication QA, and more ... all directly within PDS.

In the past, users often struggled with point cloud manipulation. CloudWorx overcomes this with its powerful TruSpace viewing window. This intuitive, panoramic viewing window lets users “see” better what the point cloud represents, and acts like a super-control to drive point cloud visualization in PDS with unprecedented speed.

Point Cloud Display Control

To focus on particular areas of interest, easy-to-use tools define specific areas of 3D point clouds to display. For improved visualization, segments of point clouds can be selectively hidden using fences and user-defined cutplanes, slices, or 3D limit boxes.

Accurate Building Documentation

Slices through point cloud data facilitate the creation of planimetric and elevation drawings. 2D lines, polylines, and arcs can be best-fit to provide accurate results. Cross sections of point clouds can also be plotted directly, introducing an entirely new, accurate deliverable and reducing project cycle time.



As-Built Piping Models

Pipe fitting tools enable users to quickly create accurate, intelligent, as-built piping models, best-fit to the point clouds, in conjunction with tools in PDS. Tie-in locations for proposed retrofit designs are also easily identified. Planar surfaces can also be modeled from point clouds using CloudWorx fitting and region growing tools.

Detailed Information for Retrofit Projects

Engineers can use CloudWorx in retrofit design projects to check for potential interferences with point clouds that represent actual as-built or as-is conditions. The unparalleled detail provided by point clouds enables engineers to create 2D or

3D designs based on accurate, comprehensive information, providing time- and cost-savings throughout a project's various construction phases.

Civil Engineering Applications

CloudWorx also integrates with other MicroStation applications like Bentley's InRoads and GEOPAK to deliver solutions for civil engineering projects such as transportation infrastructure, land development, bridge models, and more. Users can extract 3D coordinates to represent site features that are easily identifiable in detailed point clouds. Original ground points can be extracted for topographic modeling.

Large Point Cloud Management	3D limit boxes, slices, interactive visualization of massive data sets Cyclone object database technology for fast, efficient point cloud management
Rendering	Level of Detail (LOD) graphics for real-time manipulation of high-density data sets "Single-pick" point cloud density control
Visualization	Intensity mapping and photo-quality true color TruSpace panoramic viewer <ul style="list-style-type: none"> 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 modeling <ul style="list-style-type: none"> Least-squares fitting; fit points inside fence; grow from pick; grow a piping run from picks; connection of piping run Planar surface (patch) modeling Best-fit 2D lines, polylines, arcs Flange tie-point location tool
Interference Checking	Check designs for potential interferences with point clouds Advanced clash management database system management

ABOUT HEXAGON

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.

Hexagon's PPM division empowers its clients to transform unstructured information into a smart digital asset to visualize, build and manage structures and facilities of all complexities, ensuring safe and efficient operation throughout the entire lifecycle.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 20,000 employees in 50 countries and net sales of approximately 3.8bn EUR. Learn more at hexagon.com and follow us @HexagonAB.