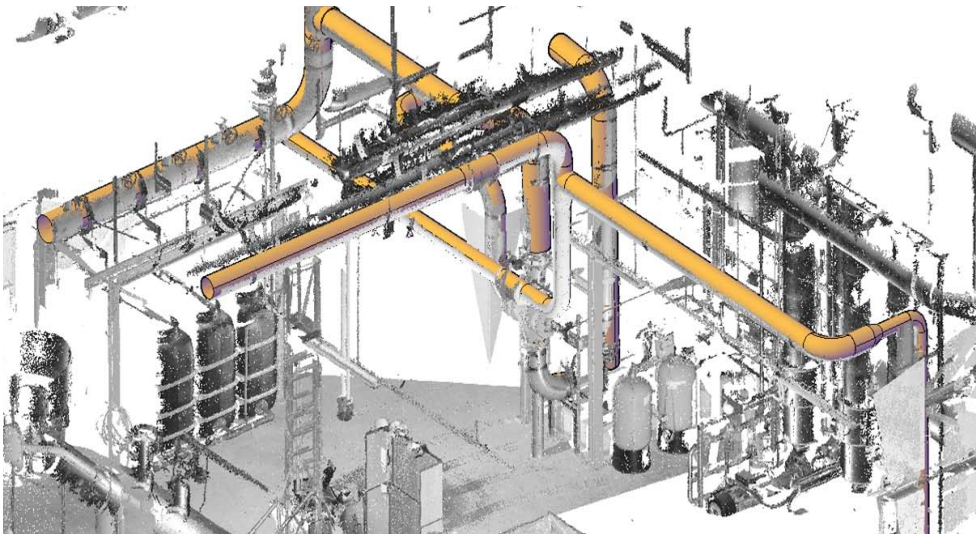


kubit PointSense Plant



Intelligent Plant design from laser scan data in AutoCAD

kubit PointCloud utilizes the latest Autodesk PCG engine, capable of handling more than two billion points in a DWG. Now users involved in industrial facility design can use enormous data sets efficiently in CAD, utilize kubit tools for pattern recognizing assets from the cloud and move directly into their familiar AutoCAD based piping design programs (Plant 3D, MEP, CADWorx, AutoPlant, etc.). This is in addition to kubit PointCloud's classic tools for modeling, managing and manipulating data sets in AutoCAD

A More Attractive Cloud:

The new "Smart Section" feature allows users to create a more visually appealing cloud from the native AutoCAD PCG file. This not only makes work easier on the eyes but improves point filtering and selection so that the correct points are clicked instead of a "point behind a point" situation.

Walk through a Pipe Run:

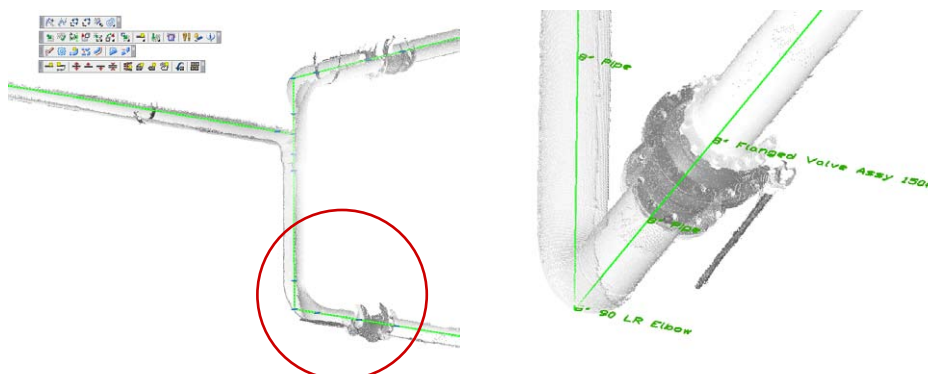
Automation and pattern recognition is essential for efficient use of point cloud data but too much automation can lead to costly errors. kubit's new "Walk the Run" tool guides a user through a run, pattern recognizing and suggesting insertion points for pipes, elbows, tees and inline fittings based on what is in the user's custom catalog. This semi-automatic approach keeps the user in control of the modeling process to ensure accuracy the first time through a run.

Intelligent Centerlines:

After routing a pipe run the user is left with native AutoCAD solids and/or the option to export an intelligent centerline. A native AutoCAD 3D polyline is derived with correct starting and endpoints for each pipe, elbow and fitting along a run. These items are also tagged with text for reference. The user can now use this routing line in combination with their intelligent piping packages.

Flexible Piping Catalogs:

The kubit team will provide the majority of standard catalogs needed for piping jobs in multiple industries. In case a fitting doesn't exist, the user can create custom patterns for their library. The software then learns to read this pattern within a run. This is excellent for custom built fittings.



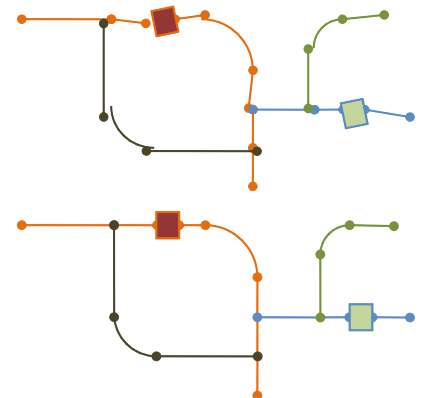
Piping the point cloud made easy in CAD:

- Intuitive steps for modeling piping systems or deriving connection points and linking to industry standard piping design software packages
- Catalog driven pattern recognition for industry standard components or user created fittings
- No need for expensive, complex software outside of AutoCAD
- Clash detection support between solids and cloud data
- Support for insulated pipe runs

Classic kubit PointCloud tools:

- Utilize two billion points with the AutoCAD PCG Cloud Engine
- Improve visual quality of scan data in CAD with Smart Sections
- Efficient cloud management: Slicing clipping, coloring, masking and naming sections

Schematical illustration of function "Apply Constraints"



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Requirements

Operating system	depends on the used AutoCAD version, we suggest a 64-bit Windows operating system
Platform	AutoCAD and all AutoCAD based verticals, e.g. Civil 3D, Architecture or Map 3D starting from version 2010 up to 2012. Please contact the kubit sales department if you are using older Autodesk products.
Hardware requirements	computer: graphics board as suggested by Autodesk, processor at least 2.5 GHz, RAM at least 3 GB; laser scanner: type depending on the tasks camera: common digital camera
Data requirements	registered, meaning toward each other, oriented scans
Supported point cloud formats	kubit PTC and Autodesk PCG
Supported external scanner data formats	Riegl RiScanPro projects (RSP), Leica (PTZ, PTS, PTX), ASCII, with AutoCAD 2011 also LAS and Faro (FLS, FWS)
Supported image formats	all image formats supported by AutoCAD, e.g. TIF, BMP, JPEG, PNG oriented images from Riegl, RiScanPro projects, Trimble RealWorks Survey Orthophotos, Reconstructor Orthophotos

Functions of PointSense

- Managing point clouds
- Importing different scanner data formats (ASCII, Leica, Riegl)
- Importing orthophotos (Reconstructor, Trimble RealWorks)
- Defining, processing and managing of layers and zones of point clouds
- Importing oriented images from Riegl projects
- Clash detection
- Create ortho-images from point clouds
- Flattening of drawings

2D modeling

- Adapting line/polyline – with restrictions
- Adapting polygon
- Drawing arcs and circles through 3 points UCS independently

3D modeling

Cylinder

- Adapting cylinder
- Auto recognize pipes, elbows, flanges, valves, reducers, tees and more
- Locate accurate tie in points for all objects
- Use provided piping catalogs or create your own fittings for pattern recognition
- Export intelligent centerlines for use with piping design packages
- Export native AutoCAD solids, e.g. 3D solids
- Adjust pipe diameter for insulated runs
- Assure coaxial and coplanar axis runs for design software
- Dynamic 3D labeling of user-defined point cloud areas and flexible database creation without modeling (e.g. for asset management)
- Mend all gaps and irregular alignments along modeled pipe runs “Apply Constraints”

Plane

- Adapt plane – with restrictions
- Draw plane

- Change plane – extend (two planes)
- Change plane – intersection line (two planes)
- Change plane – intersection point (three planes)
- Change plane – change boundary

Working with images

- Image orientation
- Insert oriented image (kubit ORI format)
- Insert raster image
- Manage control points (define, import, adapt size)
- Set UCS according to view
- Camera view and navigation
- 3D drawing with oriented images and surfaces (point cloud, plane, cylinder)
- 3D drawing – with two oriented images (two-image evaluation)

PlanarView

- Independent Windows program for the display of the point clouds within a photo-like, planar view
- Coordinate transfer between PlanarView and AutoCAD
- Freely definable AutoCAD command macros
- Distance and coordinate tap
- Coloring according to intensity, space or original RGB

Trial versions

You may test the programs without obligation, free of charge. You will find more information including a request form at www.kubit-software.com. Or just send an e-mail or call us!

References

kubit PointSense Plant is being used by worldwide:

- **CMDS - Construction Management & Design Services, Inc.**
- **DEEM First**
- **EN Engineering**
- **JE Dunn**
- **Marmac Field Services, Inc.**
- **National Park Service**
- **PrecisionPoint, Inc.**
- **SNC-Lavalin Inc.**
- **T. Baker Smith, LLC**