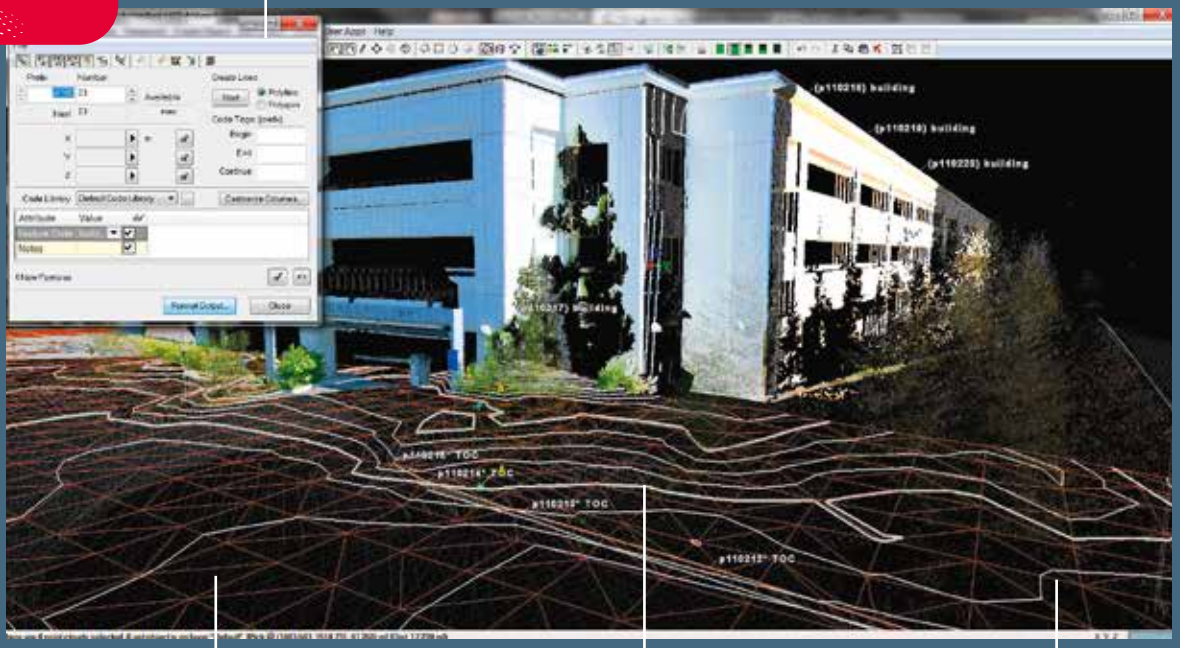
Leica Cyclone SURVEY 9.1

Processing laser scans into civil/survey deliverables

HDS™



For 2D & 3D civil/survey projects

Leica Cyclone SURVEY combines high performance with a rich set of survey-specific tools for analyzing laser scan data and converting the data into deliverables.

Cyclone SURVEY (a lower cost, survey-specific version of Leica Cyclone MODEL) boasts powerful visualization & point cloud navigation plus a complete tool set for High-Definition-Surveying (HDS™) applications in engineering, construction and asset management.

Cyclone SURVEY provides unmatched office productivity by automating many time-consuming tasks and even letting multiple users work on the same data sets simultaneously – thanks to Leica Cyclone's Object/Database foundation. Finally, Cyclone SURVEY reflects the data quality & accuracy-consciousness advantages that users worldwide expect from Leica Geosystems.

Features and Benefits

- New! iSTAR panoramic camera support
- Breakline generation from feature coded templates
- SmartPicks and Points on Grid
- Multiple, fast, convenient visualization modes
- Virtual Surveyor data collector emulation
- Contours
- Cross-sections, profiles
- TIN/Mesh creation, including grid option
- Volumes & areas
- Clearances
- Texture mapping and rectified orthophotos
- Full set of import/export utilities

- when it has to be **right**

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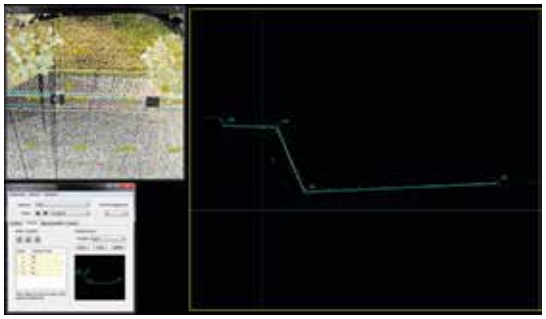
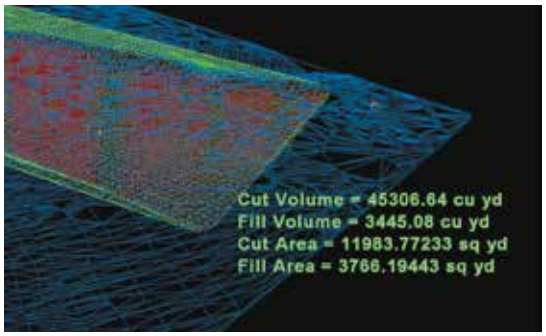


All new Alignment/Station Manager with a secondary Plan View window allows for easy creation of breakline from feature coded templates.



Ground surface TINs and other meshes are easily created and offer great value. Here is an automated report analyzing cut and fill quantities using before-and-after scan data of a ground surface.

Efficient Point Cloud Manipulation & Navigation

Leica Cyclone SURVEY has many features that let users work efficiently with rich laser scan data sets. Cyclone's Level of Detail (LOD) graphics display and visualization modes allow users to "see through" walls, apply shaded rendering, or enhance edges for improved comprehension of dense point clouds. Texture mapping tools allow users to accurately "drape" photos of the scanned scene onto point clouds for an even more realistic viewing experience. Cyclone SURVEY's friendly key plan and TruSpace panoramic viewing modes provide intuitive navigation and viewing options.

High-Performance Geometric Processing

Accurately produce a selected geometry type, such as planes and topographic surfaces. Least-squares fitting and quality-of-fit statistics ensure reliable results, while Cyclone's advanced memory management provides high performance.

Rich Tool Set for Civil/Survey and Other Applications

For excavation and grading, Surface Deviation tools provide accurate quantity calculations. Volume and area for cut and fill are precisely calculated. Output options include volumes, contours, and/or tables including elevation differences at a user-specified grid sample. A Clearance tool even finds and reports absolute minimum vertical and horizontal clearances for overpasses, bridges, interchanges, and overhead sign structures. A Virtual Surveyor tool emulates a data collector for creating topographic maps. An all new Alignment/Station Manager has the ability to generate templates to easily create breaklines, cogo points, and cross section lines. Also new is SmartPicks and Points on Grid to enhance the tool set for Civil/Survey deliverables.

Leica Geosystems HDS Software Family

Cyclone SURVEY is part of a full software family for managing laser scan data. Check the web address below for additional information.

Leica Cyclone SURVEY Specifications*	
Large point cloud mgt	3D limit boxes, slices, interactive visualization of massive data sets Cyclone Object Database Technology: fast efficient point cloud mgt.
Visualization	Full 3D fly, pan, zoom, rotate. Control color mapping using intensity, true-color, gray scale, color by elevation, one-sided (front or back), silhouette (enhanced edges). Map external photo to point cloud. Key plan and panoramic viewing.
3D Modeling	Least-squares fitting of 3D geometry. User defined error tolerance. Statistical QA reports
Animation	Create fly-through animations in 3D point clouds and models
COE	Seamless two-way data integration with AutoCAD and MicroStation
Import	Data from CAD via COE (Cyclone Object Exchange) Control data from ASCII formats & X-Function DBX, iSTAR*.nctri
Export	Point data in standard formats: XYZ, PTS, PTX, DXF, X-Function DBX, Land XML, etc. Point data in special formats: ZFS, TOPO pci & cwf Image and model data: COE, BMP, JPEG, TIFF

Hardware and System Requirements
Minimum Specifications **Processor:** 2 GHz Dual Core processor or better **RAM:** 2 GB (4 GB for Windows 7) **Hard Disk:** 40 GB **Display:** SVGA or OpenGL accelerated graphics card (with latest drivers) **Supported operating systems:** Windows 7 (32 or 64), or Windows 8 & 8.1 (64bit only) **File System:** NTFS **Recommended Specifications** **Processor:** 3.0 GHz Quad Core w/ Hyper-threading or higher **RAM:** 32 GB's or more 64 bit OS **Hard disk:** 500 GB SSD Drive **Large project disk option:** RAID 5, 6, or 10 w/ SATA or SAS drives **Display:** Nvidia GeForce GTX 680, Quadro K4000 or ATI Radeon 7850 or better, with 2GB's memory or more **Operating system:** Microsoft Windows 7 – 64bit **File system:** NTFS

* Reference the Leica Cyclone 9.1 Technical Specifications document for a complete listing of product specifications.

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www.leica-geosystems.com/hds

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