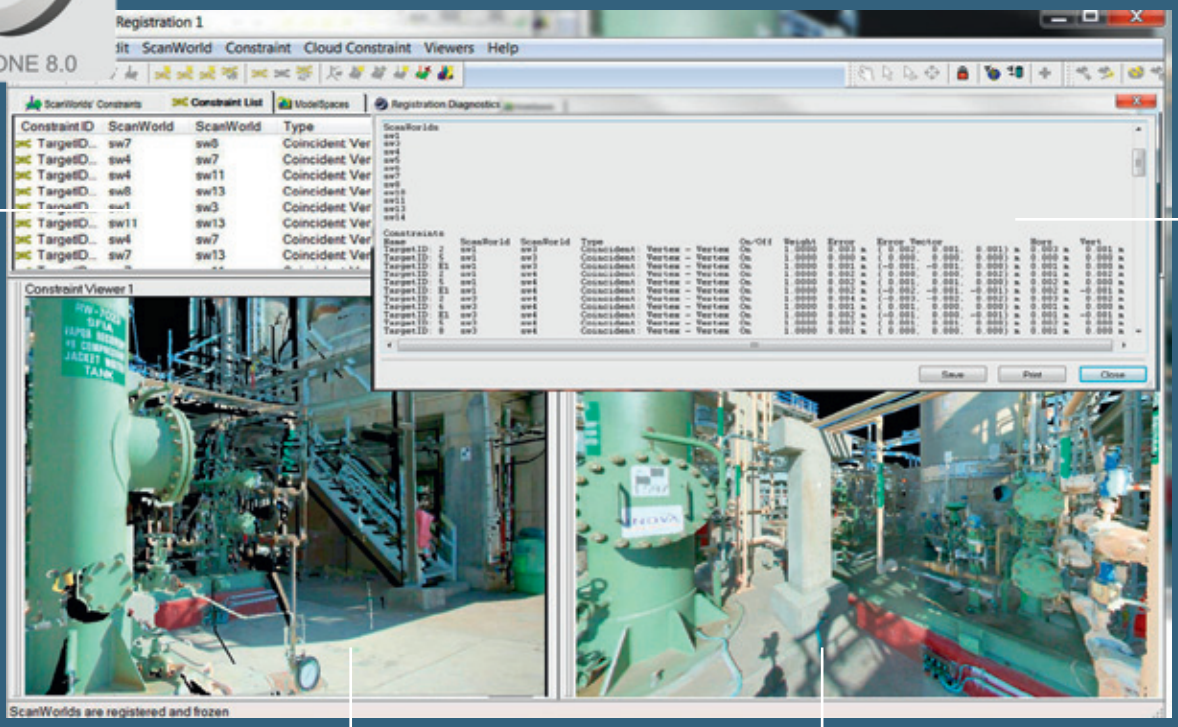
Leica Cyclone REGISTER 8.0

Laser Scan Registration and Geo-Referencing



User control of registration network, including target weighting, etc.

QA diagnostics provide data on translations, vectors and deviation statistics

Views from two observation locations are used to match control network targets

For Leica Geosystems quality, project results with complete statistical reports

Leica Cyclone REGISTER is the industry's most popular software for registering and geo-referencing laser scan data to a common coordinate system.

Accurate registration and geo-referencing is a must for successful High-Definition Survey™ projects. Cyclone REGISTER is the most rigorous, complete and productive software available for this important process.

Users can take advantage of registration options based on scan targets, scene features, overlapping point clouds, and/or survey data.

Cyclone REGISTER provides detailed statistics reports suitable for inclusion as project deliverables. Reports cover registration accuracy, error statistics and histograms for each target and/or cloud constraint.

Available automation features, friendly wizards and powerful algorithms provide unsurpassed office productivity, even for very large scan data sets.

Features and Benefits

- For use with Leica Geosystems and non-Leica Geosystems scanners
- Automatic target finding and fitting
- Easy geo-reference to survey or control data
- Complete in-office management and editing of traverse data
- Cloud-to-cloud registration standalone or with targets
- Wizard-based controls
- Detailed statistics and histograms

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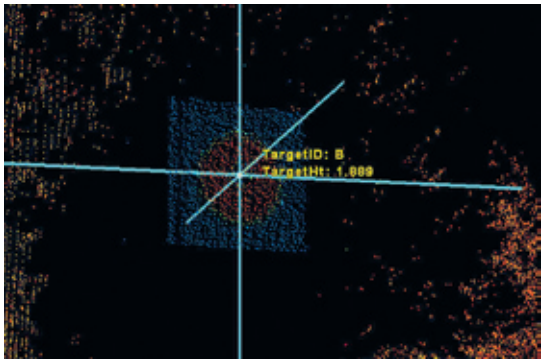
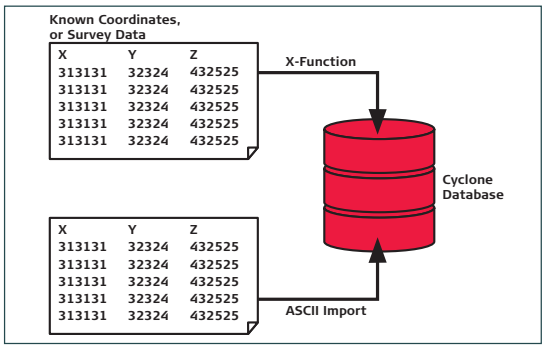


Interactive target acquiring algorithms are used to establish exact center points of targets for control from each observation location. Users define target names and heights; labels display these for ease of use.



Users can utilize Leica X-Function compatibility or standard ASCII importing methods to integrate external control data into their scan data registration. This offers a convenience and accuracy unmatched in the industry.

Automatic Target Finding, Fitting and Matching

The automated target finding wizard finds and extracts the exact center point of visible targets. Users review thumbnail views, verify and modify the fit. An automated matching method creates constraints between all setup positions, greatly enhancing the productivity of the entire registration process.
This automated process can be used with hundreds of scan positions and thousands of targets. It is most useful with phase-based scanning in interior, industrial and congested urban settings where total collection ranges are restricted. Testing shows it reliably finds and fits more than 90% of the targets within the specified range and angle of incidence.

Manage Field Collected Traverse Data

For scanners with dual-axis level compensation, users can deploy standard survey traverse methods while scanning in the field. This collection method provides for automated registration. Cyclone REGISTER provides complete, in-office traverse management capability for managing, editing, and cleaning up field collected traverse data.

Powerful, Easy-to-Use Cloud Registration

Cyclone REGISTER's wizard based controls provide an easy to use method, ensuring the highest level of productivity and highest accuracy in the industry. Unique cloud-to-cloud constraints technology can be used standalone or in conjunction with targets to further optimize the overall registration.

Detailed Registration Diagnostics

Leica Cyclone REGISTER reports the overall accuracy of the registration. Detailed registration statistics include the error for each target constraint and the Root Mean Square (RMS) error and error histogram for each cloud constraint.

Leica Geosystems HDS Software Family

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

Leica Cyclone REGISTER 8.0 Specifications*		Hardware and System Requirements
Constraint management	Cyclone Object Database Technology: fast efficient point cloud mgt. Create cloud constraints from complete or partial point clouds	**Minimum Specifications** **Processor:** 2 GHz Dual Core processor or better
Target management and registration	Target based; geo-referenced to survey control data; highly optimized, wizard driven cloud-to-cloud capability. Accurate results via bundle adjustment techniques Extract HDS Spherical, Planar and Black/White targets Automated overlap and target finding wizards Optimized target acquisition and registration workflows	**RAM:** 2 GB (4 GB for Windows Vista or Windows7) **Hard Disk:** 40 GB **Display:** SVGA or OpenGL accelerated graphics card (with latest drivers) **Operating system:** Windows XP (SP2 or higher) (32 or 64), Microsoft Vista** or Windows7 (32 or 64)
Diagnostics	Overall accuracy reports Target constraint error reporting Cloud constraint Root Mean Square (RMS) error and error histogram	**File System:** NTFS **Recommended Specifications**
Traverse data mgt.	Office-side traverse content management Add, remove, edit targets, re-run traverse, etc.	**Processor:** 2.5 GHz Dual Quad Core i7 or higher **RAM:** 4 GB for 32 bit OS and 8 GB's or more 64 bit OS
Import	Data from CAD via COE (Cyclone Object Exchange) Control data from ASCII formats & X-Function DBX	**Hard Disk:** 1 TB SATA **Large project disk option:** RAID 5, 7, or 10 with SSD drives
Export	Point data in standard formats: XYZ, PTS, PTX, DXF, X-Function DBX, Land XML, etc. Point data in special formats: PTG, PTZ, ZFS, TOPO pci & cwf Image and model data: COE, BMP, JPEG, TIFF	**Display:** Nvidia GeForce250 or ATI 6850 or better, with at least 1 GB memory **Operating system:** Microsoft Windows7 64 bit **File System:** NTFS

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* Reference the Leica Cyclone 8.0 Technical Specifications document for a complete listing of product specifications.

** Some systems may not support Windows Vista's Desktop Windows Manager (DWM) with Leica Cyclone and must be operated in Windows Classic Look.

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www.leica-geosystems.com/hds

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