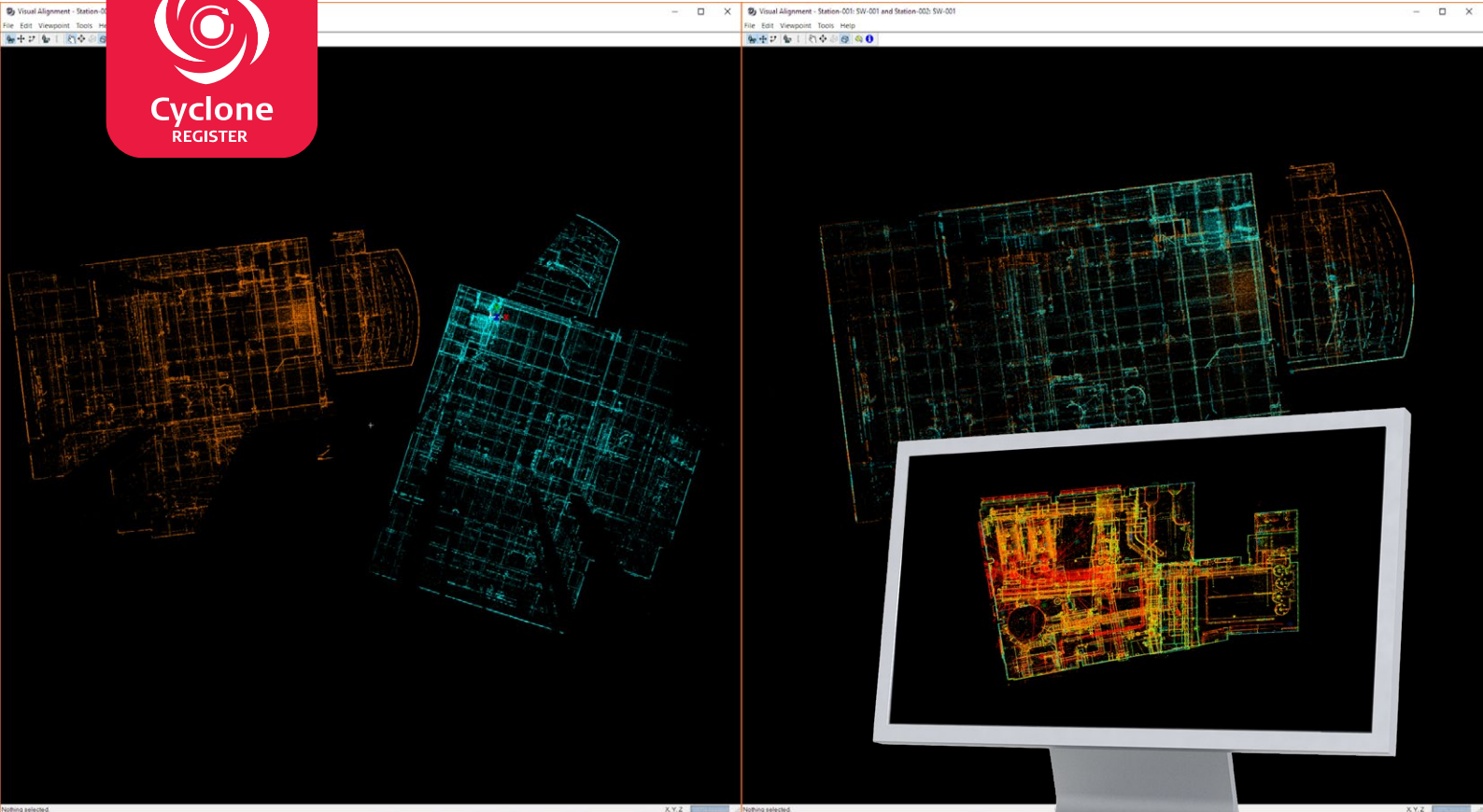# Leica Cyclone REGISTER
The gold-standard for point cloud registration

Speed

Available automation features, friendly wizards and powerful algorithms provide unsurpassed office productivity - even for very large data sets. Auto alignment allows fast and automatic alignment of scans at import or post import. Users can also take advantage of registration options based on scan targets, scene features, overlapping points and/or survey data to speed the registration process.

Scale

Cyclone REGISTER is the industry's best and most reliable solution to register large data sets. Whether you are working with a handful of scans or many thousand, Cyclone REGISTER is equipped to handle the task. Cyclone REGISTER accepts data from all your point cloud and imaging sensors with ease and lets you work with all your data simultaneously.

Simplicity

Cyclone REGISTER brings unparalleled simplicity to complex point cloud registrations. During or even post-import, users can improve their auto-alignment speeds and accuracies via SmartAlign by manually placing scans in their approximate positions or automatically connecting them by time captured or distance between scans. For users who prefer a graphical display of their data during registration, Visual Alignment allows them to position scans based on common geometry via an easily legible high-contrast visualised point cloud.
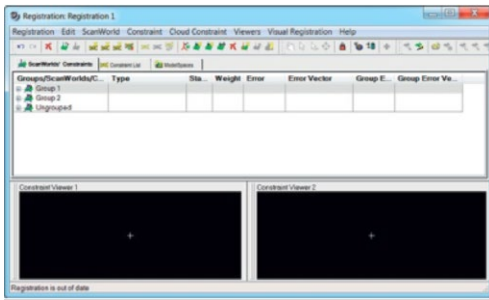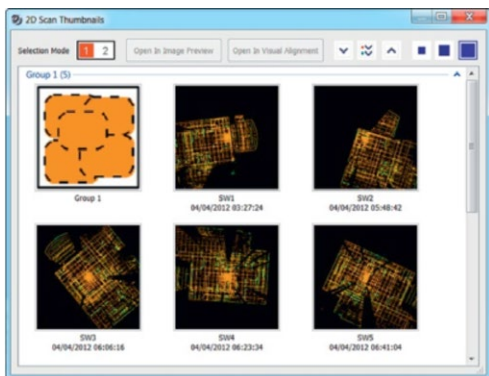
- when it has to be **right**

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Leica Cyclone REGISTER

Auto Alignment tool aligns point clouds together and creates and opens a registration automatically for fast and simple registration completion.

A scan thumbnail window provides the user with a clear view of all scans within a project. Scans can be viewed and aligned visually right after import.

Auto Alignment	Automatically creates cloud-to-cloud alignments and automatically creates and opens a registration workflow window.
SmartAlign	Place scan positions on your sitemap (whatever it is, satellite image, hand sketch, etc.) to enhance productivity and accuracy of Auto-Align results.
Visual Alignment	Includes the 2D thumbnail view and the Visual Alignment window.
Target management	Target-based registration; geo-reference data to survey control data; highly optimised wizard-driven capability.
	Accurate results via bundle adjustment techniques.
	Extract spherical, planar and black/white targets.
	Automatic overlap and target finding wizards.
	Optimised target acquisition and registration workflows.
Constraint management	Cyclone Object Database Technology provides fast, simple, scalable point cloud data management.
	Create cloud constraints from complete or partial point clouds.
Traverse management	Office-side traverse management.
	Add, remove, edit targets, re-run traverse etc.
Registration Diagnostics	Overall accuracy reports.
	Individual target constraint error reporting.
	Cloud constraint Root Mean Square (RMS) error and error histogram.
Import	Point cloud data formats: XYZ, PTS, PTX, LAS, E57, ZFS, DP, FLS, SLW, IXF.
	Project data from Leica ScanStations, Pegasus systems and BLK360 imaging scanners. Cyclone REGISTER is compatible with the BLK360 Data Manager as well as BLK360 WiFi import.
	Direct Import of Cyclone REGISTER 360 Projects* to improve success with difficult registrations or to bring data into your Cyclone MODEL, SURVEY and other downstream workflows.
	Image/Camera and model data: COE, BMP, TIFF, JPEG, PNG, NCTRI, SPH
	Control data from ASCII & X-Function DBX
Export	Point cloud data formats: XYZ, PTS, PTX, E57, DXF, PCI/CWF, DBX
	Image and model data: COE, BMP, TIFF, JPEG, PNG
	Publish directly to a JetStream server, and/or TruView Enterprise and TruView Cloud.

SYSTEM REQUIREMENTS

Operating system	Windows® 7 (32 or 64 bit), Windows®* 8 & 8.1 (64 bit only), Windows® 10 (64 bit only)	
HARDWARE	**MINIMUM**	**RECOMMENDED**
Processor	2.0 GHz Dual Core processor or better	3.0 GHz Quad Core w/ Hyper-threading or higher
RAM	2 GB (4 GB for Windows 7)	32 GB's or more 64 bit OS
Hard disk	40 GB	500 GB SSD Drive
Large project disk option		RAID 5, 6, or 10 w/ SATA or SAS
Display	SVGA or OpenGL accelerated graphics card (with latest drivers)	Nvidia GeForce GTX 680, Quadro K4000 or ATI Radeon 7850 or better, with 2 GB's memory or more
File system	NTFS	NTFS
Note	Ensure that minimum requirements for both publishing and viewing are observed for best results.	

Leica Geosystems AG
Heinrich-Wild-Strasse
9435 Heerbrugg, Switzerland
+41 71 727 31 31

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