Operating & Processing Software

RISCAN PRO

for RIEGL 3D Laser Scanners

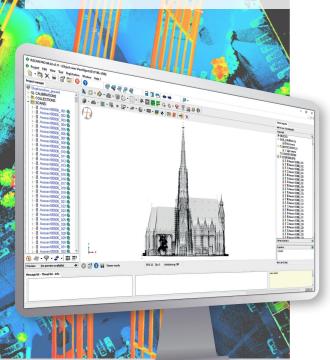
Key Features:

- 2D and 3D visualization
- geodetic tools
- automatic filtering
- automatic registration
- multi station adjustment
- colorization of pointclouds
- import/export in different formats
- RiPANO export
- create animations
- create plots
- simple meshing
- volume calculation

RiSCAN PRO is *RIEGL*'s software solution for Terrestrial Laser Scanning (TLS) projects. With advanced features for point cloud optimization, such as automatic registration, multi station adjustment, flexible filtering tools, data merging, and high-performance 3D visualization capabilities, RiSCAN PRO provides a fully integrated solution for producing accurate and refined TLS point cloud data.

With tools designed to optimize the acquisition workflow in the field, RiSCAN PRO provides the ability to perform real-time QA/QC of data coverage and scan registration in the field. Data is streamed in real-time from the scanner to the software, where all processing features required to produce a perfect point cloud are provided.

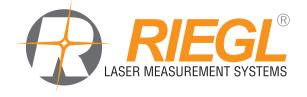
RISCAN PRO integrates sensor fusion and the transformation capabilities necessary to turn the data from multiple sensors into a seamless, colorized point cloud with a number of valuable attributes. These data can then be exported in a number of widely supported point cloud formats for further analysis and information extraction in software solutions tailored to each application.



visit our website www.riegl.com

Typical applications include

- Architecture & Facade
 Measurements
- As-built Surveying
- Agriculture & Forestry
- Topography Applications
- Archeology & Cultural Heritage
- City Modeling



Automatic Registration

Automatic merging of point clouds from different scan positions. Especially tailored for VZ-i Series Scanners, it enables fast registration of hundreds of scan positions with no user interaction necessary.

Multi Station Adjustment

MSA= Optimization of all scan positions, so that

- scan data from neighboring scan positions match
- GNSS measurements match scan positions
- measurements from tilt sensors match scan position's orientation
- scan data match externally surveyed control points statistically correct optimization with correct measurement accuracies

Flexible Filtering

Due to the fact that scan data is based on the *RIEGL* data base RDB 2, filtering can be done by many point attributes like reflectance, deviation, number of echos or by isolated points, range etc..

Coordinate Systems

Coordinate reference systems can be downloaded from the online EPSG database. User coordinate systems can be defined by supplying parameters or by importing point lists.

Enhanced Graphics

The state of the art 3D point cloud visualization based on the *RIEGL* RDB 2 point cloud file format allows to visualize each and every scanned data point in 3D whereas point colors are derived in real time from any of the additionally acquired point attributes such as amplitude, reflectance, deviation, or true color.

64-Bit Architecture

RISCAN PRO is a truly 64-Bit software that allows to utilize all available system RAM with the benefit of large scale parallel data processing and data visualization of billions of points simultaneously in one single 3D view.

ACQUIRE

VZ-Line scanner control

fully customizable parameters

- field of view
- scan resolution
- pulse rate
- image overlap

configuration of external cameras

scan and image data acquisition in real-time

real-time data transfer

real-time 2D preview

real-time data conversion

automatic target selection

target acquisition

reflector model estimation

- circular disk
- cylinder
- corner cube prism

VIEW

large dataset support

LoD (Level of Detail) support

2D, 3D, and panorama views

X-ray view

view by attribute:

- amplitude
- reflectancedeviation
- range
- true color
- echo

additional view types

- height
- distance to surface

animations

- 3D animations
- time lapse (4D)
- slice-trough animation

high resolution ortho plots e.g. geotiff export

The design of RiSCAN PRO's project structure enables smooth data transfer to numerous third party post-processing packages. The XML-based project file structure is published and well-documented, thus enabling open access to all project information in an easy way. *RIEGL*'s RDB2 pointcloud libary allows to access all scan data in a convenient way.

For detailed information see RiSCAN PRO's online help manual.

Main Features

PROCESS

data adjustment

- automatic registration
- MSA bundle adjustment
- image adjustment
- camera mounting
- camera model
- point cloud colorization

project georeferencing

- GeoSysManager 2
- EPSG online DB
- custom CRS
- engineering CRS

filtering

- single source points NEW
- dynamic objects **NEW** (people, cars, ...)
- mirror objects NEW (caused by glas facades or similar objects)
- by attributes (reflectance, deviation,...)
- isolated points
- octree
- terrain
- above/below plane

homogenization of scan data

- octree based point cloud
- x-ray prepared point cloud

ANALYZE

meshing

- smooth
- decimate
- texture

volume calculation

- mesh to point cloud
- mesh to mesh
- mesh to surface
- mesh to plane
- point cloud to plane
- cut & fill

surface comparison

- voxel comparison
- mesh to mesh
- mesh to surface

polyline creation

breakline tool

contour lines

sections

sphere fitting

plane fitting

EXCHANGE

export formats:

- .3pf
- .asc Crystalix
- .csv ASCII
- .dm Datamine
- .dtm SURPAC
- .dxf Autocad
- .e57 (w/ Reg & Imgs)
- .las 1.1-1.4 LAS
- .laz 1.2 LAZ
- .obj
- .pdf, .tif, .jpg 2D Plot
- .pod PointTools
- .pol Polyworks
- .pts, .ptx
- .rax RiALITY
- .stl Stereolithography

import formats:

- .3pf
- .csv ASCII
- .dp DotProduct
- .dxf Autocad
- .las 1.1-1.4 LAS
- .laz 1.2 LAZ
- .mpc Mantis
- .obj
- .ply
- .pol Polyworks
- .pts, .ptx
- .rdbx, .rdb RIEGL Database
- .rxp VZ-Scanners
- .sdw RIEGL ALS
- .stl Stereolithography
- .tif, jpg, bmp, images
- .vtp Polydata

Export as a RIEGL RiPANO Project

RIPANO is a software for fast and easy visualization of terrestrial laser scan projects. It allows CAD users to easily extract ortho views and plots for further use in CAD software. The software runs pluginfree in a browser or stand-alone on a Windows computer or a MacOS computer.

Note:

To export RiPANO projects with RiSCAN PRO a separate RiPANO export license for RISCAN PRO is required.







One Touch Processing Wizard

Task 1: convert scans
Task 2: filter scans
Task 3: register scan positions
Task 4: fine adjust project

Task 5: calibrate camera mounting
Task 6: colorize scans from photos
Task 7: mark single source points
Task 8: mark dynamic objects

Task 9: generate octree based point clouds

Task 10: create 3D views
Task 11: create ortho plots
Task 12: export as RiPANO
Task 13: export as LAS

Task 14: create video renderings

The One Touch Processing Wizard allows you to automate key processing steps. The result is a registered, adjusted, colored and homogenized point cloud.

It is especially helpful for beginners but also for standard users of the VZ-i series laser scanners – if they follow the recommended standard workflow but also for power users who have to process large projects over and over again.

System Requirements

Operating system:

CPU requirements:

RAM requirements:

Disk space requirements:

Graphics requirements:

Display resolution:

Windows 10, 11

Only Intel Core i Processors are supported.

Select a model with a high **Core Base Frequency** and a high **Max Turbo Frequency**.

A high number of **Performance Cores** is preferable.

Processors with the **KS** suffix in the Processor Number usually meet the above requirements e.g.: Intel Core i9 processor 14900KS

Minimum*: 16 GB

Recommended: 64 GB

Minimum*: 500 GB Solid State Drive Recommended: 2 TB Solid State Drive

Minimum*:

NVIDIA GeForce 20 series or Quadro with 8 GB GPU memory

Recommended:

Latest NVIDIA GeForce with 12 GB GPU memory

Minimum*: 1920 x 1080 pixels

Note:

3840 x 2160 pixels Ultra-High Definition (UHD) displays supported

*Minimum requirements apply for projects up to ~100 Scan Positions

Download Information

To download RiSCAN PRO, please navigate to http://www.riegl.com/ and click on "DOWNLOADS".

(Download after email registration only.)



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