

Trimble RealWorks Survey is powerful office software from Trimble that imports rich data from your Spatial Imaging sensor and transforms it into compelling 3D deliverables. Powerful tools in RealWorks Survey manage, process, and analyze large data files containing millions of points, enabling you to produce high-quality deliverables that will impress and satisfy your clients.

Trimble® RealWorks Survey™ software enables you to register, visualize, explore and manipulate as-built or scene point cloud data collected with a Trimble Spatial Imaging Sensor. It incorporates precision tools, modeling, and empowering features suited to civil survey, building, heritage, and forensic applications, plus many different areas of the geospatial industry.

Advanced, but very easy to use, RealWorks Survey lets you:

- Manage, process and analyze large datasets
- Easily produce the results you need
- Easily export to the CAD design package of your choice
- Communicate your results via video generation and Google Earth export (kml format)

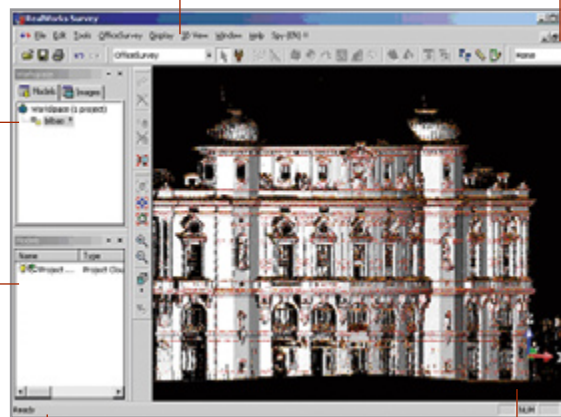
While RealWorks Survey is powerful enough to handle large datasets with ease, at the same time it is very easy to use: The software guides you through sophisticated data management and manipulation tasks step-by-step to ensure you always reach your objectives and those of your customers'.

The end result in RealWorks Survey software is the production of compelling 2D and 3D deliverables for direct output or export to CAD packages such as AutoCAD and MicroStation.

RealWorks Survey office software is your central solution for converting the data from Spatial Imaging sensors into the deliverables your customers need. Share your work using videos for productive project review. You can even sell or provide additional services by generating Google Earth 3D georeferenced models.

Toolbars put common actions just a mouse click away.

Familiar standard Windows interface.



Status bar.

Workspace and List windows allow quick and easy navigation through the hierarchical database. Simple, step-by-step tools such as the Easy Guided Step™ system make deliverable completion quick and easy.

3D View window provides multiple visualization modes for enhanced 3D scenes.



MANAGE, PROCESS AND ANALYZE LARGE DATASETS

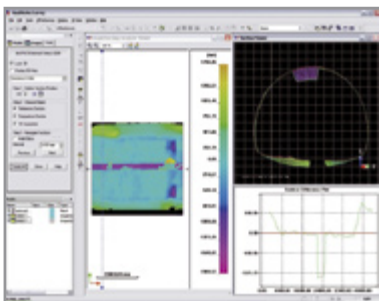
Advanced Inspection Tools

Compare as-built to design, pre-event to post-event, and more

The advanced inspection tools in RealWorks Survey are ideal for monitoring applications such as civil engineering (roads and bridges) and mining. The resulting deliverables provide richer, more detailed, and more helpful information for your clients.

Use the RealWorks Survey advanced tools to:

- Inspect as-built data, comparing it to the actual design.
- Generate and visualize inspection, detecting any variation.
- Obtain graphic visualizations of gaps and deformations for easy analysis.
- Import profiles and geometric primitives from a CAD design file in .dxf or .dwg, and export graphic files in .dxf and .dgn.
- Share information by printing results directly using the RealWorks Survey integrated print-out interface.



Tunnel Inspection Map

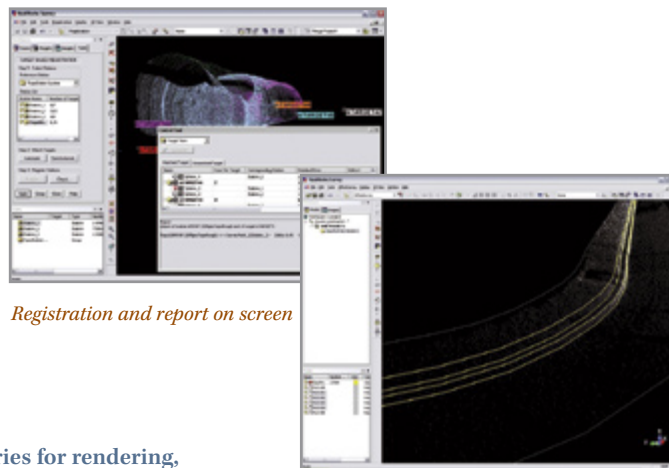
Profiles / Cross-Sections

User-definable profiles for inspection and monitoring, and unique profile generation with EasyProfile™

In RealWorks Survey, several constraints based on point clouds or models can be applied when generating profiles and cross-sections. For example, tunnel analysis data can accurately follow the tunnel center line. When working with lines and cross-sections, tools such as EasyLine™ and EasyProfile give you the next best thing to fully automatic creation of 2D drawings out of 3D data.

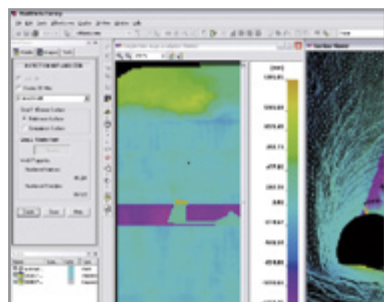
The EasyLine tool generates continuous polylines out of a point cloud, while the EasyProfile tool uses a pre-positioned profile (fitted to a cross-section of the point cloud) to track through the point cloud, making the process of extracting information faster.

EasyProfile automatically extracts from a point cloud rail tracks, side walks, street profiles, road median barriers and almost any other linear object. This unique tool works like this: Internally generated or CAD imported profiles can be positioned relative to the point cloud by using the Profile Matcher tool. EasyProfile, when activated, uses the matched profile to track through the cloud in both directions and at an angle. Feature lines are then automatically extracted according to break lines in the guide profile.



Registration and report on screen

Final profiles generated by EasyProfile



3D rendering of a stadium, created with the Modeling module

Modeling Tools

Create 3D forms and geometries for rendering, computation, and other finite element usage

RealWorks Survey can model diverse shapes to represent the as-built environment using simple CAD compliant geometrics. Data modeling makes the transfer of data for analysis packages faster. 3D models based on reality are the most efficient way to run simulations.

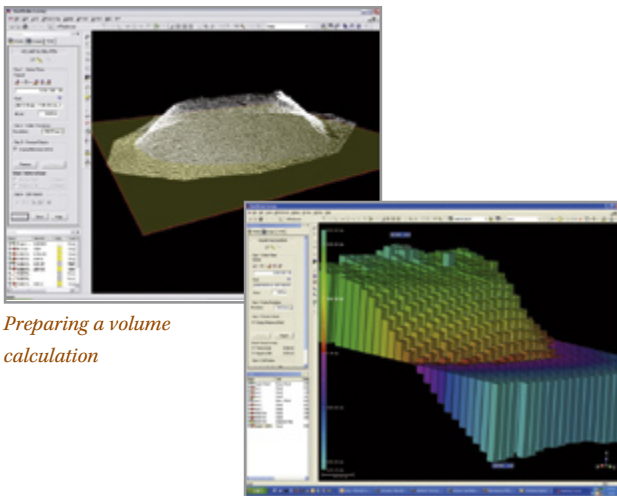
The RealWorks Survey Modeling module enables you to create partial or full models very quickly, and is particularly suited to applications where modeled geometries enhance or complete the impact and scope of final deliverables.

Volume and Surface Calculation

Extremely fast calculations to keep construction and mining work moving

RealWorks Survey generates volume calculations based on a high-precision grid method, whatever the density of the point-cloud. Surface area and volume features are integrated into RealWorks Survey results, which are displayed directly on screen.

Volume calculation includes cut and fill volume figures and can be calculated either between a scanned surface and a user-defined plane or between two scanned surfaces to assess the progress of a project on a regular basis. The final calculated results can be exported as slices, that is, as automatically generated polylines at user-defined intervals. A ready-to-print report is then automatically generated.



Preparing a volume calculation

Volume calculation in 3D on screen

Registration – Alignment

In RealWorks Survey you can easily register scans together using one of several methods: cloud-based, target-based, or geo-referencing.

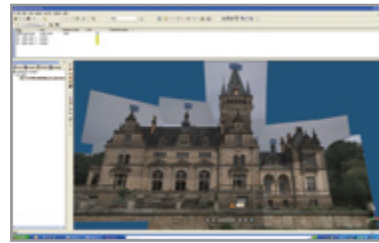
For registration via the geo-referencing tool, you can assign known coordinates to various points in all scans to be registered. For example, the points can be target centers, known points, or survey points from other instruments.

For cloud-based registration, pick the same points in two different scans with the option of automatically refining the registration in a second stage.

In target-based registration (when appropriate) you can benefit from fully automatic station-to-station registration with quality control reporting. Target-based registration applies to traverse/station setup and free stationing/resection, as well as un-leveled stationing.

If you used Trimble Spatial Imaging sensors with a traversing method to capture the data, the alignment is done automatically.

For quality assurance purposes, the Target Analyzer tool can be used to check if there are enough targets or survey points, to modify or delete those that are incorrectly fitted, and to create additional targets in the point cloud where such a target is identified visually as scanned. For results reporting, use the Entity-Based Registration Report tool to generate a full quality control report in .rtf format.



Realistic rendering is an easy way to share information from the field, to the office and to customers

EASILY PRODUCE THE RESULTS YOU NEED WITH THE EASY GUIDED STEP SYSTEM

The Easy Guided Step™ system will easily bring you the results you need from your collected data sets. This Trimble-exclusive workflow is based on a step-by-step approach for every analysis to be carried out.

When you begin a task on a data set, you first select what information you would like to extract. When you begin a task on a data set, you first select the information that you would like to extract. Then, the EGS displays the results, prompting you to adjust parameters if necessary. You can then preview the results before saving them. The EGS will almost guarantee that your customers will get the results they need from the data set.

For example, to extract a volume from a point cloud:

1. Define the reference for the volume.
2. Set up the resolution you need.
3. Select the cut and fill part requested and preview the volume.
4. Edit the volume if needed. (Optional step to optimize the results.)

Then simply create. You can extract the results in various forms, including customizable reports, or export them in your customer's favorite CAD packages.

The EGS system is unique to RealWorks Survey. Not only does it offer a convenient workflow; it also increases productivity in Spatial Imaging data management to an unsurpassed level.



IN-FIELD CHECKS AND QA

Compelling, graphic deliverables available on paper in minutes ... or for export to a CAD package

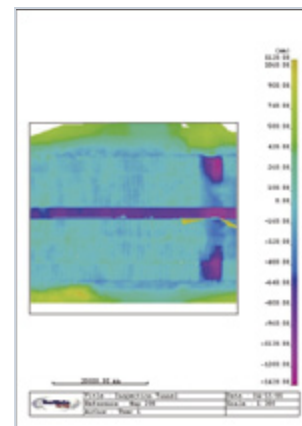
Direct Print-Outs, Export to CAD, Text and Spreadsheet Reports

All graphic results are available for printing and exporting directly from RealWorks Survey using the print-out interface, including legend, title, map scale and inset. Results are also exportable to major CAD packages, such as AutoCAD and MicroStation. Written reports in text, Word and Excel formats can also be generated. Trimble RealWorks Survey offers maximum flexibility in your reporting requirements.

RealWorks Survey also includes powerful communication tools such as movie generation and Google Earth export, which enable you to be more productive when sharing information. You can also provide value-added services to the decision makers or project stakeholders.



Cross-section print-out



Inspection Map print-out

REALWORKS SURVEY CONFIGURATIONS

RealWorks Survey software is available in two customer versions. The Standard version allows surveyors and engineers to offer enhanced deliverables in both 2D and 3D format, which clients can then, for example, visualize, manipulate, print, or partially edit. The Advanced version enables users to generate advanced deliverables and offers additional productivity tools and options. To provide customers with advanced deliverables, to familiarize new users with the RealWorks Survey Suite of products, and/or to share the data from a 3D scanner or spatial station, a Viewer version of RealWorks Survey is available for download from www.trimble.com/spatialimaging.shtml.

SYSTEM REQUIREMENTS

- Intel® Pentium® 4 or later processor or compatible, 2 GHz (3 GHz or higher recommended)
- Microsoft Windows XP (Professional or Home Edition with SP1 or SP2), Windows 2000 Professional with SP4
- 1 GB RAM (2 GB or higher recommended)
- 128 MB 3D Open GL graphics board
- CD-ROM drive
- 3-button mouse

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