

Trimble RealWorks 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 Trimble RealWorks 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® software enables you to register, visualize, explore and manipulate as-built or scene point cloud data collected with a Trimble Spatial Imaging sensor.

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

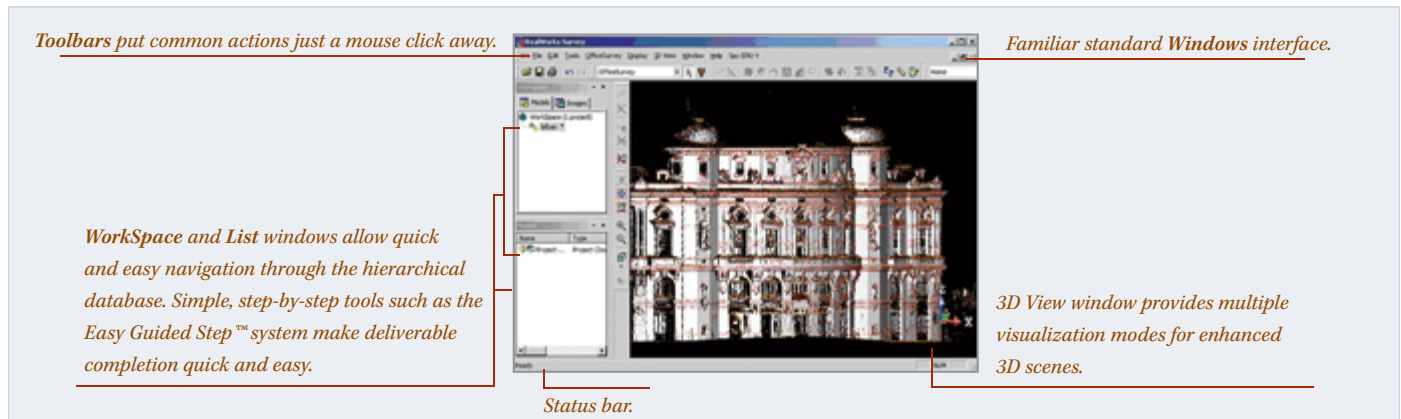
- Manage, process and analyze large datasets
- Effectively manage large data sets by using partial loading techniques
- Perform smart measurement – semi-auto clearance, projected vertical and horizontal
- Easily extract targets from scanned data
- Perform fully automatic registration
- Quickly check the quality of the targets
- Generate registration reports
- Efficiently integrate data from Trimble GNSS, Optical, and Spatial Imaging sensors

- Easily export to the CAD design package of your choice
- Communicate your results via video generation and Google Earth export (kml format)

While Trimble RealWorks 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 Trimble RealWorks software is the production of compelling 2D and 3D deliverables for direct output or export to CAD packages such as AutoCAD and MicroStation.

Trimble RealWorks office software is your central solution for converting the data from Spatial Imaging sensors into the deliverables your customers need. And you can share your work using videos and models in Google Earth for effective project review.



MANAGE, PROCESS AND ANALYZE LARGE DATASETS

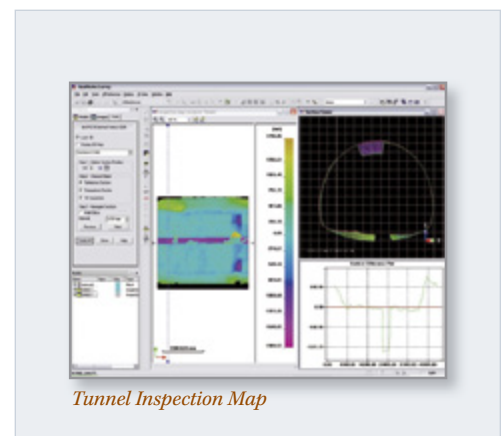
Advanced Inspection Tools

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

The advanced inspection tools in Trimble RealWorks 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 advanced tools to:

- Inspect as-built data, comparing it to the actual design.
- Generate and visualize inspection, detecting any variation.
- Obtain 2D & 3D 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 integrated print-out interface.





MANAGE, PROCESS AND ANALYZE LARGE DATASETS... CONT

Profiles / Cross-Sections

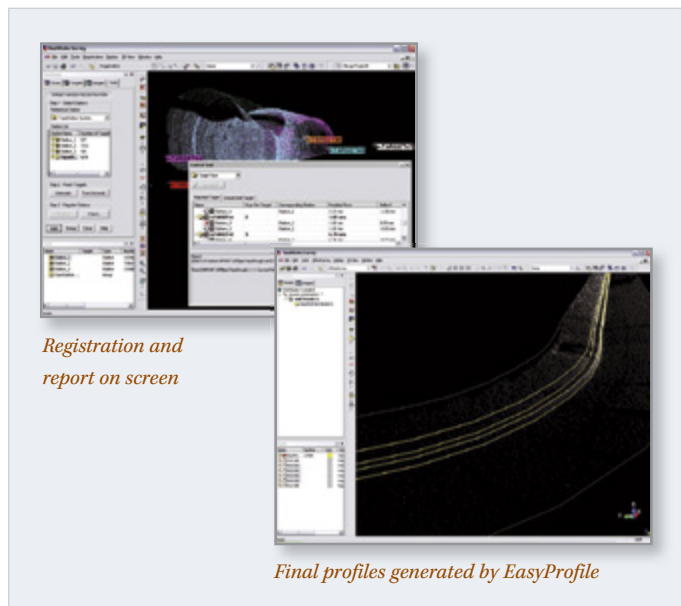
User-definable profiles for inspection and monitoring, and unique profile generation with EasyProfile™

In Trimble RealWorks, 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 point clouds or images. Image-based 2D-drawing is a highly effective method where the user draws directly over images in Station-based Navigation mode. By making full use of photo-realistic image information, 2D drawing becomes easier and 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.

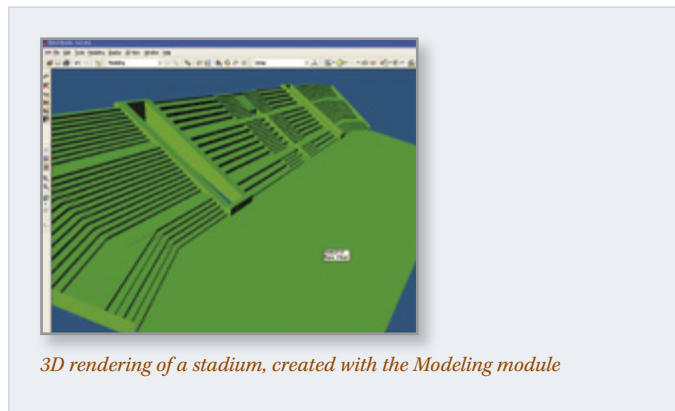


Modeling Tools

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

Trimble RealWorks 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 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.



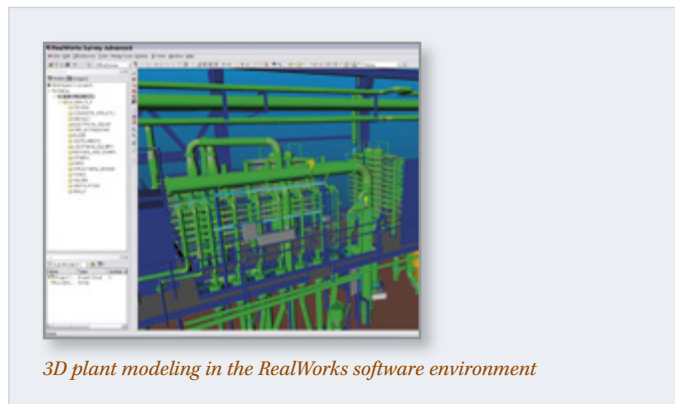
3D rendering of a stadium, created with the Modeling module

Plant Engineering

Trimble RealWorks includes a Plant module that brings the benefits of streamlined workflow to the world of engineering.

This module already includes the Modeling tools and provides in addition...

- The EasyPipe™ tool for automatic modeling of pipes by extracting points and fitting cylinders and elbows. Models are perfectly aligned and connected.
- Interactive steelworks tools that allow highly intuitive modeling of various beam types (H, I, U, T L). In addition, constraints can be applied based on pre-defined catalogs.
- Export of modeled objects to PDMS for integration to AVEVA and other software solutions.
- Export of pipe centerlines.



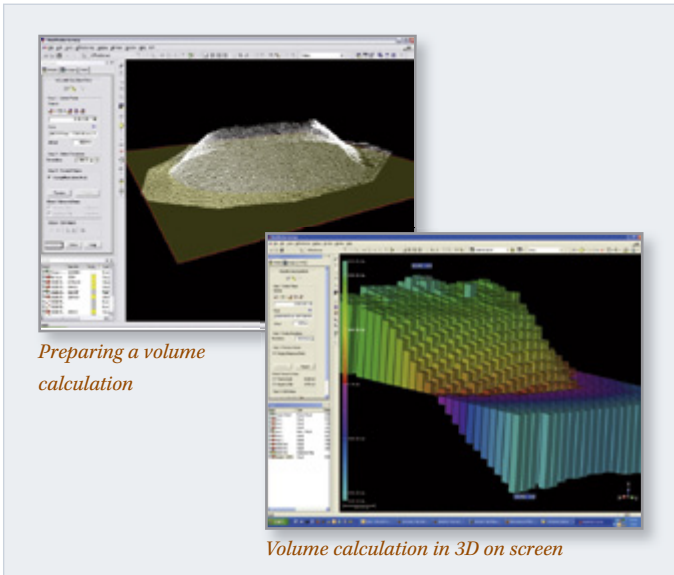
3D plant modeling in the RealWorks software environment

Volume and Surface Calculation

Extremely fast calculations to keep construction and mining work moving

Trimble RealWorks 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 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.



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.



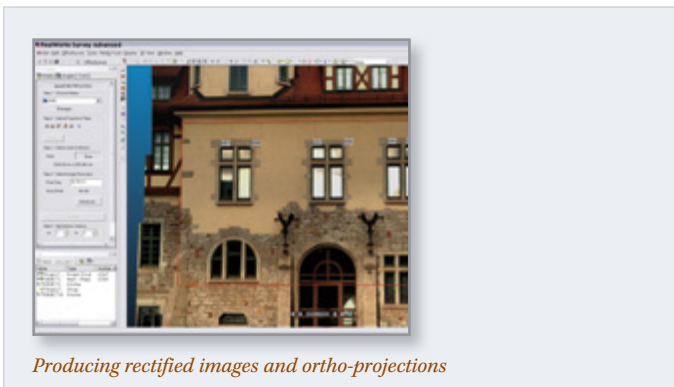
Ortho-projection and image rectification

Use the Ortho Projection tool to project a point cloud or (textured) mesh onto a plane as an ortho-projection.

For increased productivity in the case of multiple facades, use the Multi Ortho Projection tool to simultaneously create ortho projections along a polyline corresponding to the walls of a building for example.

And the Image rectification tool will allow you to easily create photo-realistic rectified images captured from the station view.

Export ortho-projection and images to CAD



Trimble FX and CX data processing

Trimble RealWorks is optimized to handle data captured with the Trimble FX and CX scanners

- Manage huge data sets efficiently
- Extract specific parts of the point cloud (by station, by zone)... use filters to extract pertinent data... excess points are rejected, kept points present homogenous spatial resolution
- Extract targets with just a few clicks!
- Processing of data in batch mode means that computers can run for extended periods without human interaction.
- Fluent data transfer to Trimble LASERGen
- Ability to generate preconfigured data for LASERGen server



Registration – Alignment

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

To further increase productivity, registration of Trimble CX and FX datasets can be achieved in unattended full auto mode. "Checker" flat targets, as well as spherical targets, are auto-detected and automatically matched after extraction. Stations are then registered in batch mode.

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.



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 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.

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

1. Define the reference for the volume.
2. Indicate the desired resolution.
3. Select appropriate cut and fill; then 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 to your preferred CAD package.

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

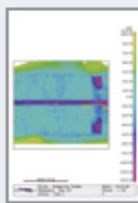
IN-FIELD CHECKS AND QA

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



Cross-section print-out



Inspection Map print-out

All graphic results can be printed directly from Trimble RealWorks 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 offers maximum flexibility in your reporting requirements.

RealWorks also includes powerful communication tools such as movie generation and Google Earth exports, providing added value for decision makers and project stakeholders.

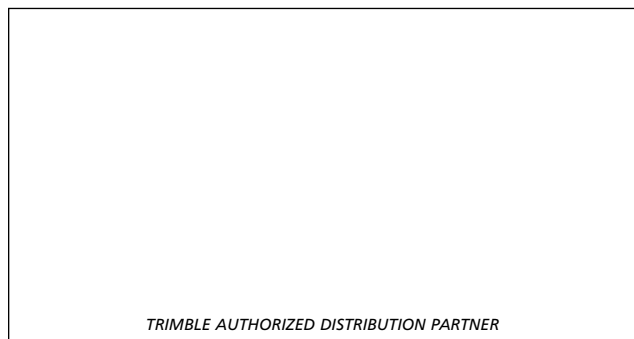
TRIMBLE REALWORKS CONFIGURATIONS

Trimble RealWorks software is available in different versions and licensed components which may vary over time. To allow customers to view advanced deliverables, to familiarize new users with the RealWorks suite of products, and to share the data from a 3D scanner or spatial station, the free Trimble RealWorks Viewer 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) or Microsoft Vista.
- 2 GB RAM (4 GB recommended)
- 256 MB 3D Open GL graphics board
- DVD-ROM drive
- 3-button mouse

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