

RELEASE NOTES

TRIMBLE REALWORKS SOFTWARE VERSION 9.0

System requirements

New Features and Changes

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Introduction

Trimble RealWorks (TRW) software is an integrated software suite for surveyors and engineers that takes advantage of the rich point cloud data sets provided by the Trimble TX8, Trimble FX and Trimble TX5 3D scanners and the Trimble VX Spatial Station. Trimble RealWorks is full-featured software that enables you to visualize, explore, register and manipulate an as-built scene of point cloud data. It incorporates a set of useful tools and empowering functions that are particularly suited to civil survey, building, heritage, forensic, plant and other applications. It also allows surveyors and engineers to produce compelling 2D and 3D deliverables for direct output or export to AutoCAD® and MicroStation®.

Trimble RealWorks software is available in a selection of formats ranging from a base version, which includes standard registration and contouring functionalities, to a full function version including all editions. The software 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.

With Trimble RealWorks Advanced, users have access to advanced registration features and can also leverage the powerful 2D/3D inspection tools as well as cross-section, ortho-projection and profiling features to produce compelling civil survey deliverables.

Trimble RealWorks Advanced-Modeler edition provides a fast and intuitive 3D modeling capability. It is particularly suited to civil engineering surveys and applications such as site refurbishments where modeled and textured structures enhance or complete the impact and scope of a surveyors' or engineers' final deliverable.

The Trimble RealWorks Advanced-Plant edition, which includes all modeling functions, provides powerful tools for various tasks specifically related to the power, process, plant and related environments.

The Trimble RealWorks Advanced-Tank edition includes all features included in Advanced-Plant plus additional tools specifically for the storage tank inspection and calibration market.

To further enable surveyors and engineers to communicate their results to clients and stakeholders, and to reach new levels of success, RealWorks offers its Publisher capability. With Publisher users can prepare self-contained packages that enable final clients, colleagues, and partners to visualize and explore projects in 3D as well as to measure and annotate. Trimble continues to also provide the RealWorks Viewer utility for visualization of RWP files.

System requirements

- Operating system: Microsoft® Windows® 7,8 and 8.1 - 64-bit
- Processor: minimum 2.8Ghz (Quad-Core) or higher, (additional cores with Hyper-Threading support strongly recommended)
- RAM: minimum 8GB (16GB and higher recommended)
- VGA card: OpenGL 3.2 compatible with minimum 1GB VRAM (3GB or higher recommended)
- 3-button mouse

Other requirements:

Solid State Drive (SSD) for maximum performance (pref. 256GB) – strongly recommended.

New Features and Changes

Enhanced Visualization

Description	New or changes	Feature	Benefit /comments
High density display	NEW	When not in a tool, TRW now uses the 'High Density (HD)' display: when you zoom in closely to see details, you can now visualize all the points in the area. You no longer need to load a pre-defined number of points. When using tools within TRW, The 'HD' button enables you to use this mode. When this button is not pressed, you can visualize the points that will actually be used in the tool. As before, you can type a number of points (in Millions) to change the amount of points to be used in the tool.	Enhanced detail visibility.
Elevation based rendering	NEW	New rendering option for displaying point cloud colored by elevation.	Ideal for identifying objects based on elevation.
Customizable cloud rendering	NEW	Added ability to adjust the brightness and contrast.	Enhanced detail display.
Station marker list window added	NEW	Added the station marker list window which allows you to define specifically which stations markers you would like to display.	Enhanced productivity especially when analyzing the registration of complex datasets or viewing regions such floors or rooms of a building.
Adjustable polyline width	NEW	Added in Preferences the ability to adjust the display width of Polylines.	Enhanced visualization makes identifying polylines much easier.

Import / Export

Description	New or changes	Feature	Benefit /comments
Support for import of DotProduct	NEW	Added support for DotProduct handheld scanner .dp file format.	Improved integration with scanner systems.

Support for Z+F and Rieggl scanners	NEW	Added support for Z+F .zfs and Rieggl .rsp file formats.	Improved integration with scanner systems.
Improved performance of PTX import and export	ENH	Improved performance when import and exporting PTX files to support more 3 rd party applications.	Improved import/export support.
Export TZF scans as images	NEW	Added the ability export TZF scans as images.	Improved exports.

Enhanced Navigation

Description	New or changes	Feature	Benefit /comments
Zoom on mouse cursor position	ENH	Using the mouse wheel to zoom now uses the cursor position for the zoom center.	Improved usability.
Automatic center of rotation mode	ENH	Added option to use the cursor position as the center of rotation.	Improved usability.
Customizable actions for mouse buttons	NEW	Added the ability to customize the action for each mouse button from the preferences menu.	Improved usability by matching the mouse behavior to other software you may be using such as SketchUp Pro or TBC.

Scan Explorer

Description	New or changes	Feature	Benefit /comments
Extract models from Scan Explorer to TRW	NEW	Ability to extract shapes directly from Scan Explorer and create as Trimble RealWorks objects.	Improved workflow for modeling.
Extract models from Scan Explorer to SketchUp Pro	NEW	Ability to extract shapes and lines directly from Scan Explorer into SketchUp Pro.	Improved workflow for modeling.
Persistent annotations	NEW	Ability to create editable persistent annotations.	Improved communication. Annotation ability also applies to published projects.

Polylines from Scan Explorer	NEW	Ability to extract lines directly from Scan Explorer and create as Trimble RealWorks objects.	Improved productivity.
Added Spatial Sampling (keep details) option to Extract Points tool.	NEW	Added to the Extract Points tool the ability to sample the point cloud to keep full density on details while spatial sampling regular surfaces.	Improved productivity especially for buildings by reducing the size of the point cloud. Ideal for sending the point cloud to be used in software applications that don't have the ability to handle the large amounts of points that TRW can.

Registration

Description	New or changes	Feature	Benefit /comments
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Corner extraction in Target Analyzer	NEW	The ability to create a target by extracting a corner has been added to the Target Analyzer tool.	Improved productivity.
Registration Report	ENH	Registration>Report(Scan-Based) now supports both TZF scans and extracted scan points.	Improved productivity.
Refine Registration	ENH	Registration>Refine Registration using scans now supports both TZF and non TZF scans.	Improved productivity.
Cloud-Based Registration tool supports Clipping Box	ENH	The Clipping Box Extraction tool is supported by the Cloud-Based Registration tool.	Improved registration analysis.

Productivity Tools

Description	New or changes	Feature	Benefit /comments
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Freehand Segmentation	ENH	Ability to perform freehand “drawing” when using the polygonal option of the Segmentation tool by holding down the Ctrl key.	Improved productivity when performing segmentation of complex shapes, especially useful when using a touch screen.
Convert TZF scans to TRW images	NEW	Convert TZF scans to TRW images for texturizing meshes and for use as background images in the station based view.	Improved deliverables and visualization.
Clipping Box Extraction feature available	ENH	The Clipping Box Extraction Tool can now be accessed from Segmentation,	Improved productivity.

in more tools		Sampling, Frame Creation and the Polyline Drawing tool.	
Catenary Drawing tool	NEW	Catenary drawing tool added.	Ideal for drawing catenary objects such as power lines.
Pick Highest/Lowest point	NEW	Added ability to pick the highest or lowest cloud point in an area to tools that possess picking capabilities.	Improved productivity.
3 point Plane Orientation tool	NEW	New option for measuring the orientation of complex objects such as concave mobile phone antennas by pick three points.	Improved productivity especially when combined with the Clipping Box Extraction tool.

Inspection Tools

Description	New or changes	Feature	Benefit /comments
Added Cut/Fill color bar option.	NEW	Cutting plane functionality added to Scan Explorer.	Improved workflow for creating cross sections.
Export from Inspection Map Analyzer	NEW	Added the ability to export the items from the Inspection Map Analyzer tool Section Viewer as CAD objects.	More options for adding high resolution color to point clouds.
Rotate Section: Difference Plot	NEW	Option to swap the orientation of axes in the Section: Difference Plot in the Inspection Map Analyzer tool.	Improved productivity.

Modeling

Description	New or changes	Feature	Benefit /comments
Change diameter of pipe run	NEW	New tool for changing the diameter of an entire pipe run. Applies to cylinders and circular torus (bends).	Improved productivity for modeling pipe runs.
EasyPipe	ENH	Improved fitting performance. Maintains sag in pipe.	More robust fitting. No longer straightens sags in pipe resulting in a more accurate model.
Geometry Modifier	NEW	Added the ability to enter a specific value when rotating models.	Improved control for rotating models.
2D Drawing tool Snap	ENH	Added snap to line functionality to the 2D Drawing tool.	Improved productivity.

Advanced-Tank Edition

Description	New or changes	Feature	Benefit /comments
Vertical Tank Inspection tool	NEW	Streamlined workflow for creating inspection reports including verticality and roundness inspections.	New market specific tools. Market specific tools greatly reduced time for creating deliverables.
Horizontal Tank Calibration tool	NEW	Ability to create filling table for horizontal storage tanks.	New market specific tools.
Vertical Tank Calibration Tool	ENH	Improved sump computation.	Improved deliverable.

General

Description	New or changes	Feature	Benefit /comments
Start Page	NEW	Added start page which provides links to common tasks and resources.	Improved usability.
Removed Close button from Workspace and List	NEW	Removed the close button from the Workspace and List Windows to prevent accidental closure.	Improved usability.
Register Software	NEW	Added the ability to register Trimble RealWorks.	Improved customer service.
Warranty expiration notice	NEW	Added warranty expiration notice tray icon.	Improved customer service.
Texture mesh with panoramic images	NEW	Added prompt for converting tzf files to images when applying texture in the Mesh Edit tool.	Improved customer service.
Added Spatial Sampling (keep details) option to TZF based extraction tools.	NEW	Added to the Extract Points tool the ability to spatially sample the point cloud on regular surfaces while keeping full density on details such as edges.	Improved productivity especially for buildings by reducing the size of the point cloud. Ideal for sending the point cloud to be used in software applications that don't have the ability to handle the large amounts of points that TRW can.

RESOLVED ISSUES

General

[SAVE] Resolved issue with not being able to save project on some computers

[POST-PROCESSING] GPU was not being used, only CPU

[SEGMENTATION] Resolved issue with errors on specific cases

Scan Import and Export

[IMPORT-EXPORT / E57] E57 export and import now support non-English characters

[IMPORT / E57] Improved robustness when importing specific gridded E57 files

[IMPORT / FLS] Import of raw FLS files now support non-English characters

[IMPORT-EXPORT / PTX] Improved performance of PTX import (conversion to TZF format) and export

[IMPORT / PTX] Improved robustness of import (PTX files from LaserControl and Scene)

[EXPORT / PTX] Color not exported in [0;255]

[EXPORT / LAZ] Corrected internal errors in LAZ export which resulted in multiple warning messages

Office Survey and Modeling

[EXPORT / KMZ] Resolved issue with the export to Google Earth only supporting the first object

[IMPORT / DWG] Resolved issue with the size of cylinders

[IMPORT / DWG] Improved robustness on specific cases (files containing nurbs)

[EXPORT / DXF-DWG] Resolved issue with color information when exporting

[EXPORT / DXF/DWG] Some extrusions were not properly exported as Solid DXF/DWG

[EXPORT / DXF/DWG] Fitted planes could not be exported in mm

[EXPORT / DWG / INSPECTION MAP] Resolved issue with errors in the DWG export in Files>Advanced Exports in case of cylindrical inspection (inversion, wrong angles)

[TWIN SURFACE INSPECTION] Corrected errors with polyline drawing inside "twin surface inspection"

[EXPORT / INSPECTION MAP] Resolved issue with missing coordinates in exported txt files

Registration

[REGISTRATION / CLOUD-BASED] Fixed accuracy issue with large coordinates (e.g. in state plane coordinates)

[REGISTRATION / RMX] Register stations from RMX files now works on all stations, even when with no TZF file

[REGISTRATION / ORIENTATION] Resolved issue with running the orientation tool after undoing a previous re-orient caused an error & corrupted project

[REGISTRATION / ORIENTATION] Fixed accuracy issue when picking New Origin

Scan Explorer

[SCAN EXPLORER] Scan Explorer could not start on some computers

[SCAN EXPLORER] Visual artifacts when dataset had small TZF scans

[SCAN EXPLORER] Improved robustness when extracting points with 'remove coincident points' option

[PUBLISHER] Mixed up reduction with file size

[SCAN EXPLORER] Closing project in TRW would not close it in TSE

RealColor

[REALCOLOR] Improved matching behavior with imported FLS files (scan doesn't reach the zenith)

Miscellaneous

[DISPLAY] Light direction can now be changed using buttons

[VIDEO CREATOR] Wrong viewport size

[PROFILE MATCHER] Improved robustness when working with a mesh

[TOOLBAR-EDIT] CTRL+C / CTRL+V shortcuts not managed (CTRL+A works fine) in toolbars edit field

END