



Trimble RealWorks

Version 11.3

This document contains summary information on new features, late-breaking product information, updates, and troubleshooting tips not covered in the Trimble® RealWorks® documentation.

Introduction

These release notes describe the features and enhancements that are new in version 11.3 of the Trimble® RealWorks software. For further support information, go to www.trimble.com/Support/.

System Requirements

- Operating system: Microsoft® Windows® 8.1, 10 – 64 bit
- Processor: minimum 2.8 GHz (Quad-Core) or higher, (additional cores with Hyper-Threading support strongly recommended)
- RAM: minimum 16GB (32GB and higher recommended)
- Graphics card: OpenGL 3.3 compatible with minimum 1GB VRAM (3GB or higher and OpenGL4.4 recommended)
- 3-button mouse

Other requirements:

Solid State Drive (SSD) for maximum performance (pref. 500GB) – strongly recommended.

Upgrade procedure

Install the software from this location (**Internet connection required during installation and license verification**): [Support and Downloads](#)

Version: 11.3

Date: 9 September 2020

New Features and Enhancements

Inspection			
Description	New or Enhanced	Feature Overview	Benefit /comments
Wall Verticality Inspection tool	New	The new Wall Verticality Inspection tool added to the Inspection tab enables you to inspect the plumbness and flatness of a wall. the first step is to define a vertical reference plane via a least-squares fit to a specific area of the point cloud, then compare the scan data to this reference plane. An inspection map indicates where the wall is in front of or behind the plane. The tool also generates a grid at user specified spacing for export and reporting.	Productivity. Quickly inspect the verticality of the wall.
New color layer in inspection map	New/Enh	In Surface To Model Inspection, when creating the inspection map, you can now choose to add a color layer to it. The tool computes an additional image using the point cloud rendering settings currently used in the 3D view: point color - true color, intensity, color-coded intensity, elevation, etc. -, which you can also combine with ambient shading. This image is then stored along with the distance layer in the inspection map object, enabling you to view it whenever needed. You just need to determine, for each particular use case, what type of information is the most relevant to add to the inspection - i.e., intensity, true color, elevation, etc.	Productivity, data quality. Locate yourself quickly in the inspection by displaying visual references.
Inspection Map Viewer	Enh	When opening an inspection map that has an additional color layer, the inspection map viewer now provides the 'Switch to color layer view' option to view this color layer. This is a convenient way to visually associate visual references with specific areas in the inspection map. When the color layer view is active, you can also click the 'blending' button to blend the color layer with the distance layer - using the last distance color bar - to have both sources of information in a single view. The percentage enables you to set the proportion of the color layer in the blending.	Productivity, data quality. Locate things quickly. Zoom in on some details and switch to and from color layer to better identify areas of interest.
Export inspection map color layer	Enh	In the Export>Export Inspection Map command, you can now tick the 'Export Color Layer' option in the dialog. This will write a second TIF file containing the color layer content. The two files have the exact same resolution and image size, so that you can still combine them in your CAD package for further analysis or reporting.	Improved Interoperability.

Meshing			
Description	New or Enhanced	Feature Overview	Benefit /comments
Create meshes of reduced size	Enh	The Mesh Creation tool now enables you to create a surface mesh of reduced size. Set the mesh size reduction between 'Lightweight' and 'High Detail' with the slider, the algorithm then adaptively replaces, in flat areas, the small triangles by some larger ones, therefore reducing the overall number of triangles in the resulting mesh.	Enhanced productivity, improved interoperability.
Edit Mesh: adaptive size reduction	Enh	You can now simplify an existing triangular mesh in the Mesh Editing tool. Either set a reduction factor or a desired number of triangles, then the algorithm will adaptively replace small triangles by larger ones in the flat areas, so as to reduce the overall number of triangles while keeping as many details as possible.	Enhanced productivity, improved interoperability.
Fill mesh holes	New/Enh	A new mode for filling holes has been added to the Mesh Editing tool. In this mode, simply position your mouse near an edge of the hole to highlight its boundary, then click to fill it.	Enhanced productivity, data quality. Quickly fill the remaining holes in your surface meshes.

Modeling			
Description	New or Enhanced	Feature Overview	Benefit /comments
SteelWorks: auto-detect beam model and fit	New/Enh	The SteelWorks tool in Model>SteelWorks has been modified to add an automatic workflow: select the catalog, segment the beam, then press 'Extract' to automatically select the model - e.g., the shape and size - in the catalog that best fits and will optimize its position with respect to the point cloud. The tool will also display the reference of the model found. Manual extraction is still available.	Automation, enhanced productivity. One possible workflow is to run the 'Auto-Segment Steel Beams' command first, then auto-detect in the SteelWorks tool.
SteelWorks: optimize model position and orientation	New/Enh	The SteelWorks tool also has a new step to optimize the fit to the point cloud. Given a model, the Adjust button computes the position and orientation of the model that best fit the point cloud in the least-squares sense. The Constrained Adjust will also compute the best fit position and orientation while maintaining the model's main axis.	Accuracy, enhanced productivity.

Manipulators improvements	Enh	You can now change the size of the 3D manipulators in Preferences>Tools. This way, you can tune their size so that they are always easy to click when modifying geometry, limit boxes etc... Each manipulator now gets highlighted to let you know which manipulator will be active. When moving the Modify Shape manipulator, the corresponding value is now shown in the info box. The radius manipulator for the cylinder is now located at the center to avoid mis-selection with the length manipulator.	Ease of use.
Modify Geometry and Intersect improved	Enh	It is now easier to pick geometries in these tools: only the geometries of the required types are now considered, even when other geometries or point clouds are displayed.	Ease of use.

Registration

Description	New or Enhanced	Feature Overview	Benefit /comments
Refine Registration using Scans : results improved	Enh	The algorithm in the Refine Registration using Scans command has been improved when working with TZF scans: more accurate and predictable refinement results, including in the case of large closed loops, e.g., stations that connect around a building block.	Improved accuracy.

Classification

Description	New or Enhanced	Feature Overview	Benefit /comments
Auto-Classify Tunnel	New	You can now clean the scan data acquired in a tunnel by running the 'Auto-Classify Tunnel' command under Edit>Point Cloud. This automatic process separates different types of objects inside the tunnel - e.g., vehicles, people, pipes, etc - and the tunnel itself, which can also be segmented into the tunnel envelope and the ground in the same operation.	Productivity. Avoid tedious segmentation work on tunnel data, especially on curved tunnels. You can then fully exploit the scan data on the extracted tunnel envelope and ground in further processing, e.g., inspection tools, mesh, etc.

Imports/Exports

Description	New or Enhanced	Feature Overview	Benefit /comments
Import FLS scans as full-dome scans	Enh	When importing FLS scans, you can now choose to import them as full-dome scans. This creates a scan grid that goes up to the zenith. You will then see the full sky in ScanExplorer. This will also enable you to run the RealColor tools, in case you wish to re-colorize scans using panoramic images from external cameras.	Improved interoperability, data quality.
Export station to RCP with full resolution		Improved the resolution of the gridded/structured RCP file.	Improved quality of exported data.
Export station to E57 in spherical coordinates		Improved quality of gridded/structured E57. Pixels with no depth are exported (Color is exported).	Improved quality of exported data.

General

Description	New or Enhanced	Feature Overview	Benefit /comments
Vertical Clearance measurement improved	Enh	The algorithm in the vertical clearance measurement (upward and downward) in Home>Measure has been improved. It now gives more accurate and consistent results by leveraging the full data density.	Improved accuracy.
Re-use limit box	Enh	A new 'Restore Last Limit Box' button has been added to the 'Limit Boxes' window. This activates the limit box that was active the last time you used the functionality.	Improved productivity. No need to store or redefine the limit box. Quickly get back to the last area you focused on.

Resolved Issues

Scan import (structured formats): fixed high disk space consumption (issue introduced in version 11.2).

Trimble X7 data import: fixed issue of some wrongly colored lines in sky areas.

Trimble TX8 data import: scan colorization was done without image blending in version 11.2.

TDX Import: Improved support with Base version of Trimble RealWorks.

JOB Import: fixed crash introduced in version 11.2.2 when importing .job files. JXL import worked fine.

DXF/DWG Import: fixed crash on some datasets exported from RealWorks

ASC/XYZ scan import: resolved an issue where a small amount of points were not imported or had wrong coordinates

DotProduct Import: now supporting paths containing non-ASCII characters

RSP import: now supports files from Riegl RiScan version 2.8.

Send to AutoCAD : now supports version 2021 (support for version 2015 and 2016 discontinued).

Publisher: fixed data corruption issue when project name contained Asian characters. Scan Explorer could not start.

IFC export: fixed error in volume unit (caused a warning when importing in Revit).

Close: fixed crash when closing some projects with a significant amount of scans per station.

3D Inspection: fixed computation issues when the project has large coordinates.

Inspection Map Analyzer: generated 'Colored Mesh' was not rendered correctly (issue introduced in version 11.2).

Volume Computation tool: fixed instability after doing Shift Project.

Shift Project: resolved issues where delete Frame created some instabilities.

Polyline: 'Alignment Stationing' properties were not visible in version 11.2.

Send to SketchUp: polyline with disconnected parts are now sent correctly.

Import/Export: TSPX format no longer supported

Legal notices

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Release notice

This is the September 2020 release (Revision A) of the Release Notes. It applies to version 11.3 of the Trimble® RealWorks software.