



SCENE

Version 6.2

Release Notes
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Introduction

FARO is pleased to announce the Release of

SCENE 6.2

SCENE LT 6.2

SCENE Capture 6.2

SCENE Process 6.2

We would like to thank all users who gave valuable input for the improvement of the former release. With this release, we deliver a new version of the FARO Laser scanner software that will improve your productivity, your mobility and ease of use in many directions.

Differences between the Members of the SCENE Software Family

SCENE

Complete workspace creation and manipulation tool. Contains all functionality of SCENE LT, and in addition the functions required for scan registration and export to SCENE WebShare Cloud.

SCENE LT

Free viewer, enables to view existing FARO scans and workspaces. SCENE LT can import CAD models in VRML format in order to compare them with the scan points. It also allows for exporting scan points into various file formats, and to SCENE WebShare Cloud. SCENE LT does not offer functionalities to filter scans, create objects for scan registration, or to perform scan registration.

SCENE LT offers the On-Site Compensation functionality. It is a procedure to test and improve the angular accuracy of the Laser scanner Focus^S 150 and Focus^S 350.

SCENE Capture

SCENE Capture provides everything you need to record your scans with the FARO scanner Freestyle^{3D}. It is designed to run on a tablet computer and is pre-installed on the tablet computer included in the Freestyle Objects kit. The scan data is stored on a microSD card, which makes it easy to transfer the data to another computer.

More features:

- Scanner calibration (does not replace factory calibration)
- White balance
- Capturing data
- Easy scan view
- Measure between points

SCENE Process

SCENE Process provides everything you need to process and finalize your entire Freestyle^{3D} scan project. Record your scans with the tablet computer and SCENE Capture, transfer the data and continue working with SCENE Process.

Because processing 3D data is a heavy operation for a computer, we recommend installing SCENE Process on a workstation or on a notebook PC with sufficient performance.

More features:

- Easy registration functionality

- Level functionality
- Split scan functionality
- Meshing functionality

SCENE WebShare Cloud

SCENE WebShare Cloud is a secure cloud-based solution for storing and sharing scanning data with different project partners.

Scan data published with SCENE WebShare Cloud must be prepared with the respective SCENE features.

SCENE WebShare 2Go 2.0

WebShare 2Go 2.0 is a portable version of SCENE WebShare Cloud.

64-Bit Support

The amount of data created by 3D laser scanners and the processing capacity to achieve a fluent workflow requires a powerful 64-bit computer.

Therefore, SCENE versions from 5.3 are only available for 64-bit Windows™ systems.

Windows™ XP

SCENE versions from 5.3 on do not support Windows™ XP.

Online Help and Video Tutorials

FARO's YouTube channel provides a variety of laser scanner hardware and SCENE software tutorials on the web. Access them from the Help menu within SCENE or with the following links:

SCENE tutorials:

<http://www.youtube.com/playlist?list=PL106990C972ED8232>

Focus^{3D} tutorials:

<http://www.youtube.com/playlist?list=PL1F9F3E5175BAE4A1>

Visit the FARO Customer Service area on the Web at www.faro.com to search our technical support database, which is available 24 hours a day, 7 days a week. The link to the technical support database is also accessible from the Help menu in SCENE.

New Features

This is a list of the most important new features of SCENE 6.2. For detailed information, please refer to the SCENE 6.2 User Manuals.

SCENE

On-Site Compensation

On-Site Compensation is a procedure to test, verify and adjust the compensation of the Laser Scanner Focus^S 150 and Focus^S 350.

It can be made available in the Workflow bar by activating the corresponding setting in *Settings > General > Show Scanning Category*.

SCENE LT

SCENE LT 6.2 provides the following new functionalities:

- A new user interface and the On-Site Compensation feature.
- Export Mesh option.

Bug Fixes and Improvements in 6.2.4

Licensing

- Soft Lock and dongle license update system now function more robustly.

SCENE

- Dialog boxes did not open in some cases, until SCENE window was resized. All dialog boxes open now, even when the SCENE window is not resized.
- Fixed a crash that occurred when a project is saved after points are deleted in a legacy project point cloud using the invert selection tool.
- Fixed a memory leak that occurred during the export of point clouds. This memory leak could have caused a crash.
- Fixed a bug that caused SCENE to stop functioning indefinitely during update of a point cloud.
- After reopening a project where points were deleted in a project point cloud using the invert selection tool, the remaining points are correctly rendered in the 3D view.
- Improved performance of WebShareCloud Export, Virtual Scan creation and registration in some cases.

Registration

- Cloud-to-Cloud Expert settings are now applied correctly to Automatic Registration.

WebShare Cloud

- During the WebShare Cloud Export, no dialogs are opened automatically anymore.
- Fixed a crash that occurred when the gap filler view option of the WebShare Cloud export and scan overlays or layout layers are activated for the creation of the Overview map.

Freestyle

- The 'Stray Point Filter' now removes less good points, resulting in an overall increased scan point density.
- The colorization quality in the 'Color Smoothing' processing step is now improved.
- Meshing function now produces a smoother result.
- Fixed a crash that occurred during processing of scans.
- Fixed a bug in the Freestyle on-site calibration, which caused the calibration to return an error message for some Freestyle devices.

Recap Export

- Updated SCENE to the latest Autodesk ReCap libraries to prevent crashes that occurred when exporting projects with older versions of the libraries.

Bug Fixes and Improvements in 6.2.3

General

- SCENE now does not crash:
 - when importing projects with point clouds.
 - when loading scans. An error message (Error 246) is displayed instead, along with details that can be forwarded to customer service.
 - when loading scans in Quick View.
 - if a project is closed when 3D views are opened.
- SCENE now processes non-metrical units correctly. The processing settings now correctly handle non-metrical units.
- Mirror-velocity dependent parameters are supported.
- SD card transfer has been improved and does not display an error anymore for projects that do not contain scans and for situations where a registration is performed.

Freestyle^{3D} Data

All scans and scan point clouds processed in versions before SCENE 6.1, will be correctly updated during processing.

Meshing

It is possible to create meshes after creating scan point clouds using the context menu command.

Clipping Boxes

It is now possible to export 3D selection using clipping boxes without getting a timeout.

Bug Fixes and Improvements in 6.2.2

General

- SCENE functions correctly if you delete a project point cloud while a view is open.
- SCENE does not crash during installation of licensed applications.
- SCENE displays the project dashboard correctly after an auto save is loaded.
- 3D view is updated correctly when a manual white balancing is performed.
- SCENE can be closed during a save operation.

- Export of E57 files containing special characters is now possible.

Registration

If the automatic registration performed after processing does not register all scans correctly, a message is displayed with information about the failed registration.

Meshing

- Measurements between points on a mesh are stored in the Measurements folder of the mesh.
- When the “Number of triangles” value is changed in the Meshing dialog, no other setting is changed.

On-Site Compensation

- After process completion the connection to the scanner is suspended.
- The process is now more tolerant to bad horizontal alignment of scanner towards targets.

Bug Fixes and Improvements in 6.2.1

SDK

The SDK performs the same angular compensation check as SCENE.

Known Issues

SCENE

Full resolution HDR scans

The LDR images that are created after applying pictures can only be exported as original format (.bmp) and not as .jpg or .png

Clipping Boxes

Clipping boxes are not rendered correctly with layout plans.

Problems with Intel graphics cards

We recommend to use NVIDIA or AMD graphic cards.

If you use the Intel graphics card, use vendor-specific graphics driver and not the standard Microsoft driver.

Project Point Cloud

- If a scan project was processed with pre-SCENE 6.1 versions, all scans must be processed with SCENE 6.1 to create a mesh in this project. The recommended workflow for processing in SCENE 6.2:
 - Switch to new SCENE 6 User Interface
 - Process all FARO Laser scans and imported scans by recreating the scan point cloud using the process task in the “Processing” tab
 - Ensure “Create scan Point Clouds” is checked

- Process all Freestyle scans by opening the scan's context menu and selecting **Operations->Process scan**
- Delete project point cloud
- Build project point cloud.

Recap export

Freestyle scans are not considered during Recap export.

- **Workaround for a whole project:** Create virtual scans of the Freestyle^{3D} data and start the recap export.
- **Workaround for a single scan:** Export the Freestyle^{3D} data into e57 format and import those files into recap.

SCENE WebShare Cloud Export

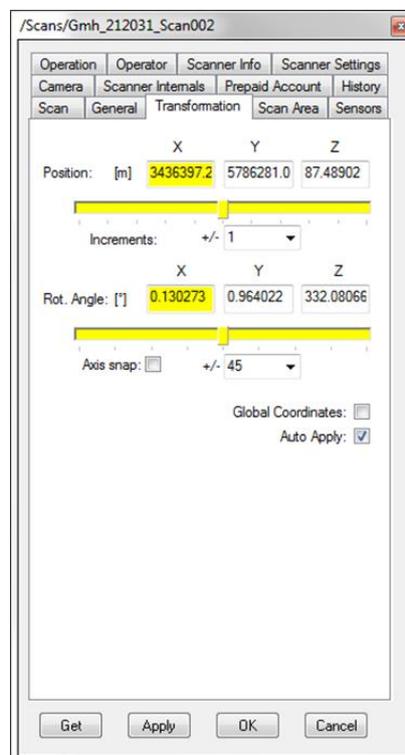
SCENE WebShare Cloud export fails for projects in a path with Unicode characters.

Export

- When trying to export a project located at a path that contains special Unicode characters, the export currently fails with an out of memory error.

Geo Referencing

Geo referencing of scan projects may introduce very large translations for each individual scan of the project. For example, a scan may be translated thousands of kilometers along the X and/or Y axis, as shown in the following screen shot.



These translations may lead to problems with 3D visualization. This can also affect SCENE WebShare overview maps and the export of scan points. The export of scan points with very large translations might be inaccurate.

To avoid problems with the 3D visualization, we strongly recommend avoiding such large translations on individual scans.

If you need large translations, the best way is to apply them to the workspace (or at least to a scan cluster which is as far up in the project hierarchy as possible).

To transfer large translations away from individual scans, use Operations ▶ Registration ▶ Move clusters to Center of scans from the context menu of the workspace (or a scan cluster that is far up in the project hierarchy). This function computes the barycenter of all scans below the selected object and transfers the translation of the barycenter into the selected object. The global position of the individual scans will stay the same while local translations will be reduced to a necessary minimum, so visualization problems are also reduced.

3D View

- After switching from SCENE to another Windows Program and back with e.g. Alt + Tab, the frame rate in the 3D View drops by about 50%. The frame rate can be restored by changing the point size in the view options and clicking ok.
- SCENE might suffer from instability issues on systems with some AMD/ATI graphics cards when opening one or more 3D views and the *Advanced Textures* option is enabled:

This option is disabled by default and can be found under Tools ▶ Options ▶ View. You may enable it, but if you experience problems when opening 3D views, disable it again. Stereoscopic view is now working even if Advanced Textures is disabled. NVIDIA users should enable *Advanced Textures* without any problems.

- Rendering performance with NVIDIA Quadro graphics processors: On systems equipped with NVIDIA Quadro graphics processors, rendering performance in 3D view may be slow or intermitted. In order to improve rendering performance, start the NVIDIA Control Panel application (available in the Windows™ Control Panel) and select the global preset 3D App – Game Development under 3D settings ▶ Manage 3D settings ▶ Global Settings.
- When a 3D View is opened out of a Planar View, it is not possible to create a virtual scan.

Point-to-Point Measurements in SCENE

When a scan or scan folder is rotated, existing point-to-point measurement objects are not updated, which might lead to incorrect distance measurements for these measurement objects. We therefore recommend not to make point-to-point measurements until scan registration is complete.

SCENE Process: scans may be lost

If Processing is started on a scan and is stopped before 3D data are shown, this scan may be lost. Workaround: wait until the 3D data is shown, then stop processing.

Computer System Recommendations

Processing scan data is a demanding task for both the software and the computer system. To allow SCENE 6.2 acting as a high performance system, the computer hardware needs to comply with these requirements.

SCENE 6.2 works with Windows™ 7, 8, 8.1, and 10.

FARO recommends the following hardware specifications.

Minimal system specifications

- Processor: 64-bit (x64) with at least 2-gigahertz (GHz) (For example, Intel Core i7)
- Graphics Card: OpenGL 4.1, or higher, at least 2GB Memory

- Main Memory: At least 16GB
- Hard Disk: 256 GB Solid State Drive
- Display: 1366 x 768
- Operating System: 64-bit Windows 7 or higher

Recommended system specifications:

- Processor: Quad-core x64 Intel Core i7/Xeon, 8 physical cores
- Graphics Card: Dedicated graphics card, Open GL 4.1 or higher, at least 4 GB Memory, optional for stereo rendering: Nvidia Quadro
- Main Memory: At least 64GB
- Hard Disk: 512GB Solid State Drive + Regular HDD
- Display: 1920x1080
- Operating System: 64-bit Windows 7 or higher

To make use of the stereoscopic 3D viewing capabilities, a NVIDIA Quadro graphics card, a 3D monitor or 3D projector as well as the suitable 3D goggles are required.

To make use of the SpaceMouse support, a 3DConnexion SpaceMouse device with the latest drivers is required. The User Manual describes how to do the settings.

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