



Release Notes

RealityCapture



Version 1.2.1.116300 Tarasque

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This version was released due to changes in the end-user license agreement (EULA).

Version 1.2.1.116295 Tarasque

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Highlights:

- Console view extended with command line
- Create command sequences and add them to the app ribbon
- Export to Sketchfab at no additional cost using PPI license
 - (limitation 300k polygons and 1 x 4k texture)
- CLI license floating token is the same for all floating licenses
- Build expiry date extended to 5 years
- Support for colmap scenes
- Refactored UDIM export

Selected new features:

- New smoothing style that works on peaks
- New simplifying options
- Faster depth-map calculation during the Preview Model reconstruction
- Export material information when exporting FBX models
- Upload to Cesium ion through Map Wizard
- Added relative alignment precision options
- Bright background option
- Automatic brightness and contrast enhancement in 2D view
- Sort control points
- Select (non)registered images
- The Display contours option in the app ribbon
- Show component information in the 2D view
- Component name as a suffix for control points imported with a component
- License does not have to be allocated for a certain period of time
- Standard license activation can be deactivated in the application settings
- Several changes in reports
- Signed reports are exported for free

New CLI commands:

- Progress redirected to Command Prompt with printProgress
- Export selected components with two new commands: exportSelectedComponentDir, exportSelectedComponentFile
- Detect features with the command detectFeatures
- Export snapshots with the command exportSelectedCamerasSnapshots

- Print report lines into Command Prompt with printReport
- Delete control points, control point measurements, and distance constraints
- Set the image layer to an image or to multiple images with setImageLayer or setImagesLayer
- Remove the image layer with removeImageLayer
- Various editing options for selections

Selected fixes:

- Map Wizard refractor
- Exported FBX files now have smoothing groups defined
- Cesium 3D Tiles export changed to allow disabling GZip compression and triangle strip generation for improved viewer compatibility
- Texture names specify UDIM tile number last
- Models uploaded to Sketchfab are unlit
- Added option to disable density equalization for simplifying

Minor fixes:

- Fixed artifacts in texturing from images with masks
- Several Depth-Map calculation fixes
- Several cut-by-box fixes
- Several RCNode fixes
- Several small fixes in CLI
- Several SharpnessMap fixes
- Several Import/Export fixes

Version 1.2.0.18320 Tarasque

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This version extended the expiration date.

Version 1.2.0.17385 Tarasque

This version had changes in the code sign certificate.

Version 1.2.0.16905 Tarasque Patch

This version introduced a package of fixes to the official 1.2.0.16813 Tarasque release.

Selected fixes:

- Interaction need after a model import to determine if it is going to be cleaned out.
- Select an export option with just one click in the one-export dialogue.

Version 1.2.0.16813 Tarasque

This version was an official release. It contained the same features as 1.2.0.16790 Tarasque Pre-release and 1.2.0.16575 Tarasque Pre-release, with some additional fixes and tweaks.

Version 1.2.0.16790 Tarasque Pre-release

This version contained the same features as 1.2.0.16575 Tarasque Pre-release, with some additional fixes and tweaks.

Version 1.2.0.16575 Tarasque Pre-release

Highlights:

- Calculation of volume and area for arbitrary shapes.
- Users can now create custom height profiles.
- Contour lines computation and export.
- BETA: Orthomosaic rendering method along with advanced mosaic editing tools.

Selected new features:

- Faster depth-maps calculation (even 2x+)
- Now possible to create and export cross sections of the models.
- Ribbon improvements and color cursors auto-detection for more intuitive and smoother user experience.
- View context tabs are now always visible and extended with selection of view options and tools.
- One-export dialog grouping all export options, most recently used option and search function.
- Export and sharing options added to the main menu.
- Camera uncertainty ellipses now visible in the map view for each camera.
- Relative camera position uncertainties now visible in 1Ds for each camera.
- New Cut by Box tool for sharp box cuts and box booleans.
- Now possible to freeze simplification of the model edges.
- Added option to choose texture format and layer for Level Of Detail (LOD) model export.
- Several optimizations to LOD export (e.g. size and hierarchy of the exported LOD models).
- Now possible to filter images displayed in 2Ds view - you can drag and drop selections, add, subtract or intersect them or press delete to hide them from 2Ds view.
- Added option to frame images/cameras in the map view.
- Items can be deselected by right-click of the mouse.
- Minimized texture dimensions after fixed and adaptive texel size unwrap.
- Automatic markers detection supported for grayscale inputs.
- Updated database of coordinate systems.
- Now possible to enable slope shading on DTM and DSM.

- Multiple security improvements when running Real-time Assistant.
- Improved results when using the Correct Colors tool.
- BETA: Now possible to detect misaligned cameras within Inspect tool.

New CLI commands:

- Added new CLI commands (setGroundPlaneFromReconstructionRegion, exportCrossSections, renameCrossSections, selectCrossSections, computeContours, exportContours, renameContours, selectContours, exportShapes, importShapesToSelectedOrtho, importShapesToOrtho, selectShape, addShapeToSelection).
- Introduced new key “allowReadOnly” for set command for enabling opening project multiple times.

Selected fixes:

- Selected component is now saved with the project.
- Map view ordering buttons are greyed out when irrelevant
- Hot selections are now shown in IDs when selecting in other views.
- ESC key cancels tools in 2D.
- Changing the layout keeps the focus of the view and ribbon.
- Fixed crashes of LOD models export.
- Fixed crashes on Cesium Ion upload.
- Fixed flipped UVs and rendering issues after importing a large model.
- Fixed incompatibility of exported non-georeferenced models with Cesium Ion.
- Fixed incorrectly exported depths and masks.
- Fixed importing UV indices from FBX file format.
- CLI command exportDepthAndMask now respecting XML parameters file.
- Fixed incorrect export into FBX with special characters in the path.
- Autosaving project now enabled by default.
- Fixed export of ortho-projection into .exr file format.
- Fixed UI artifacts for higher-resolution screens.

Minor fixes:

- Fixed incorrectly displayed texts in the exported reports.
- Several fixes to the behavior of silent commands - all unwanted dialogs now should be suppressed.
- Minor fixes in the application Help.
- Progress report now shows Resume when Paused.
- Selected model is now deselected by selecting another component.
- Fixed vertex color artifacts after simplification.
- Fixed simplify command not respecting current settings for reprojection.

Version 1.1.1.15122 Blaze

Version released after becoming a part of Epic Games.

[\[Capturing Reality is now part of Epic Games\]](#)

Thank you for being part of this great community.

Version 1.1.1.15012 Blaze Patch

This version contained a package of fixes to the official 1.1.1.14258 Blaze release.

Selected fixes:

- Moving keyframes in 4D animation tool now working correctly.
- Small fixes to real-time assistant.
- Drag & drop ortho projections into map view now working correctly.
- Now possible to export ortho-projections into .exr file format.
- Fixed DSM/DTM export with Depth (local) layer.
- Fixed incorrect behavior for commands exportDepthAndMask and exportSTMap.
- Fixed incorrect import of a model by parts.
- Added minor changes in Help section.
- Fixes to save and save as behavior.
- Removed artifacts when zooming ortho-projections in 2D view.
- Fixed behavior of control point editor.
- Fixed problems with stuck texturing.
- Fixed issues when changing layout.
- App returns errorlevel 0.
- Fixed incorrect behavior of progress bar after aborting the process.
- Fixed issue with opening scenes created in an anonymous PPI mode.

Version 1.1.1.14258 Blaze

This version was an official release. It contained the same features as 1.1.1.14247 Blaze Pre-Release, with some additional fixes and tweaks.

Version 1.1.1.14247 Blaze Pre-Release

Highlights:

- Real-time alignment assistant on a smart device with a local network processing (CLI users)
- Now you can open and work with the same PPI scene on different computers
- Autosave - your project is continuously saved so that you do not lose your work if something happens
- Possibility to resume model reconstruction after unexpected closing of the app
- CLI application can work without UI, with progress indication in the system tray
- Relative camera position uncertainty (ellipses) displayed in Accuracy report
- Added option to create model classification from labeled images (experimental)
- Better readability on high resolution monitors. Simply change zoom.

Selected new features:

- Added an option to merge small parts when simplifying a model.

- Added possibility to select 2Ds view in all views.
- Application localization into Czech and Italian language.
- Added possibility to use custom names for image layers.
- Added possibility to rename created texture layers.
- Added a table with parameters for the selected texture layer.
- Sharper and more detailed models for scenes with high DOF and big redundancy.
- The application now gathers and sends some basic statistic data in a form of an operation log file to improve user experience (can be disabled in the Application settings).
- Map view now remembers multiple map provider credentials instead of allowing only one.
- Map provider URL path can now be parametrized using a template.
- Opened projects are now protected against accidental resaving from different instance or by a different user (read-only mode).
- Added an option to display Slope for the selected ortho projection.
- Reconstruction settings have been simplified.
- Improvements to the search function in the built-in Help section.
- Added possibility to choose layer used for texturing in the Color and Texture Settings.
- Recently used email remembered when activating a license.
- 2Ds view now shows selected Image layer.
- Simplification factor in level of detail export panel is now specified as a percentage.
- Clipping box now displayed with clue color.

New CLI commands:

- Added new CLI commands (headless, selectImages, setReconstructionRegionOnCps, scaleReconstructionRegion, moveReconstructionRegion, rotateReconstructionRegion).
- “Silent” command now suppresses also warning dialogs (e.g. Not enough video memory when displaying larger models in 3D).
- Project path added as optional parameter for “save” command.
- Added parameters to “load” command that handle opening autosaved projects.

Selected fixes:

- Fix to Recompute model render data. Now possible to recompute the render data for the current model or to change the Max points to display directly.
- Fix to exporting depth maps and ST maps.
- Map view now displays offline tile cache, even in case of a network error.
- Fixed camera rotation issues in Maya ASCII scene export.
- Unwrap tool now generates textures with non-mirrored surface features.
- Path to the normal map is now specified in the MTL file when exporting a model to OBJ.
- Now possible to handle errors during activation via command line interface.
- Image path now visible in 2D view even after zooming the image.

Minor fixes:

- Fix to ortho ruler display.
- Fix ortho depth map artifacts at a detailed zoom level.
- Removed “Don’t show me again checkbox” from the “Imported Model Is Dirty” dialog.
- Fixed empty transformation preset list shown in camera export.
- Fixed incorrect message shown when GPU driver is out of date.
- Simplification factor in the Level of Detail Export dialog is now specified as a percentage.

- Fixed progress bar flickering.
- Fixed control points snapping when using the Define Distance tool.
- Fixed behavior of “Less details” and “Show flags” checkboxes in 2Ds view.
- Fixes to Map view credentials setup dialog.

Version 1.1.0.12901 Blaze

This version was an official release. It contained the same features as 1.1.0.12571 Blaze Pre-Release, with some additional fixes and tweaks.

Version 1.1.0.12571 Blaze Pre-Release

Highlights:

- Now possible to import also accuracy for the measurements (e.g. import of PPK/RTK data)
- Import of Leica BLK3D data
- Import of Z+F scans (.zfs and .zfprj file formats)
- Point cloud classification (AI classify tool)
- Generation of Digital terrain model (DTM)
- Export Level of Detail (LOD) models
- Export models to Cesium 3D Tiles format
- Direct upload to Cesium ion

Selected new features:

- Added new Accuracy and georeferencing report template
- Application localization into Spanish, Korean, Chinese simplified, French
- Small components grouping and deletion
- New DSM /DTM export options - masking empty pixels using alpha channel, normalizing image and 2 modes of storing depth
- Export of point cloud classification
- Export model into .stl and .3mf file format
- Text file importer improved
- Added more color palettes for displaying DSM/DTM in 2D view
- Possibility to remove input image layer
- Possibility to choose image layer used for coloring
- New numbering formats for export to .obj, .ply, .xyz that support lossless export & import
- Shift + holding left mouse button rotates reconstruction region in 15deg increments
- Possibility to hide texture layer and show vertex colors
- Filter selection now does not reset reconstruction region setup
- Automatic setting for sampling method, supersampling and reprojection distance in texture reprojection tool
- Added option to perform reprojection during simplification in Simplify tool
- Added mesh and texture quality presets for Sketchfab upload
- Added Merge components button in the Alignment tab (removed from Alignment settings)

- Map view improvements - camera selections, using color cursors, placing ground control points

New CLI commands:

- New CLI commands (dtmClassify, export3dTiles, exportLod, importLeicaBlk3D, merge-Components, selectAllImages, deselectAllImages, invertImageSelection)
- RC CMD line is translated by the string translator before executing, i.e. CLI commands can be controlled using the variables and basic functions.
- Console outputs of the application can be redirected into the text files using getStatus command

Selected fixes:

- Fixed Unexpected program state error during alignment
- Fixed image sorting by index, name and path
- Fixed Autodesk navigation style
- Better progress reporting (smaller jumps) for certain tools
- Collision of point cloud (PTX) file format with Pentax RAW Image File format as a part of Windows Imaging Component codec
- OrthoProjection depth colormapping is smooth
- Fixed issue with memory not being properly released when unloading projects
- Fixed potential issue with memory when smoothing model
- Fix incorrect format of ASCII PLY export
- Fix swapping red and blue channels in ortho projection export to .exr
- Fix banding in DSM and DTM export to .exr
- Fix crash when exporting control points
- Fix lasso, and rect selection sometimes do not show selected vertices or they crash
- Fixed issues with Sketchfab upload
- Fixed error message when reprojecting to a non-unwrapped model via reprojectModel command
- Disabled reproject button in reproject panel when no reprojection type is selected
- Reprojection now creates new texturing layers instead of replacing existing layers
- Fixed source texture alpha transferred to target texture during reprojection
- Fixed possible failure when reprojecting from vertex colors
- Youtube video link shown in help page when being offline

Minor fixes:

- Cannot save project in Viewer mode via CLI anymore
- Fixed incorrect behavior of Distance tool on ortho projection
- Fixed selections occasionally losing their contents
- Fixed potential hard crash of app when using large selections
- Fixed potential smoothing failures on very small parts
- Fixed exporting sampled ortho projection with higher resolution
- Corrections to dialog when HDR images are imported
- Fixed memory leaks when using lasso selection
- Corrected report when using Check topology tool
- Fixed Incorrect selection when distance constraint is changed and clipping box is used

Version 1.0.3.10403 RC

Selected fixes:

- Issues with the Sketchfab upload.

Version 1.0.3.10393 RC

Highlights:

- Share reports to a cloud and manage them via your account (<https://www.capturingreality.com/my.cloud.reports>)
- Now possible to run up to 4 instances of RealityCapture at once
- User can use a high-level programming language to control the program flow, send command-line commands to an already opened RC instance
- Simplify tool allows reprojecting color and normal maps
- Export of STMap, depth map, and mesh mask images

Selected new features:

- Normal maps uploaded to Sketchfab
- Users can now import distance constraint definitions - this is helpful especially for rulers with coded target on each end
- Added 3D uncertainty of control points in reports
- Point uncertainty visualization in the Inspection Tool
- Image masks can now be loaded also as separate files and displayed as mask layer in a 2D view
- Color normalization on all texturing layers (16-bit/HDR images now supported)
- Reprojection from vertex colors into textures
- Texturing on all texturing layers
- Export 16-bit/HDR textures to single texture file
- Better texturing memory management
- Added option to define the ground plane with a reconstruction region
- Added new options for placing reconstruction region (from control points, from reconstruction)
- Exported texture naming more readable in case multiple layers are exported
- Option "Maximal reprojection distance" removed from Reprojection Tool, the reprojection distance is now calculated automatically
- Color reprojection is now enabled by default in the Reprojection Tool
- Coloring style now displayed in the Selected model(s) table
- Model export to GLB file format
- Improved image undistortion algorithm
- Improved mesh quality for scenes with single object in the middle of image (statues, full-body scans, etc.)
- Now you can use also Shift-Tab (besides Tab) to switch between image layers back and forth in 2D views
- Loading scene without having input images (the viewer mode) is much faster and does

not create thousands of mock-up images

- Faster scene loading from network locations
- Cached metadata get automatically invalidated after user/external image editing, no need to delete meta database files
- Faster image rendering in 2D views
- Improved texts in error messages with more additional information

New CLI commands:

- importHDRimages
- exportDepthAndMask
- exportSTMap
- shareReport
- settings for color normalization for image selection (enableColorNormalization and enableColorNormalizationReference)
- defineDistance now accepts distance definition from a file
- correctColors now accepts image layer name as a parameter
- Improved parsing of command-line arguments
- importModel now supports FBX file format

Selected fixes:

- Error “Corrupted or missing depth map” during reconstruction
- Out of CUDA memory during depth-map computation (multi-GPU CUDA driver problem)
- Incorrect rendering of laser scans in 2D image view
- PPI access denied issues during export. The PPI version will inform about scene inconsistencies, like image manipulation, prior to export. It will also recommend steps for getting the scene back to the consistent state.
- Error when creating a preview mesh in PPI
- Issue where georeferenced laser scans imported as draft were not georeferenced after alignment
- Watermark in DSM ortho export in PPI
- Error when using the Duplicate model tool in PPI
- CLI export of camera registration to Autodesk Maya format
- Loss of recommended display scale after resetting the ground
- Large disk space consumption during reprojection
- Display of only positive values in displacement maps
- Slow Sketchfab upload due to texturing, now reprojection is done instead
- Export of undistorted images with wrong alpha
- Unavailable undistortion options in FBX export
- Scaling/transformation issue with import of a reconstruction box
- Texture layer options rendering in 2D image view ribbon
- Resetting panels to its default state - the panels did not reset sub-options which were not displayed as default.
- Image orientation/rendering/alignment of images taken with Huawei smart phones (invalid Exif value)
- Map wizard automatically reset alignment options like „merge components only“
- Incorrect behavior of the selectModel command
- Invalid argument when using integer PIN as a parameter for the getLicense command

- Crashing during saving parameters .xml from the Export Model dialog
- Not saving control points when importing a component via CLI
- Ignoring integer parameter when using the simplify command
- RGB values in LAS export normalized to 16-bit values

Minor fixes:

- Not preserving the export option Same as XMP when reexporting
- Crash when texturing imported model with default settings
- Incorrect behavior when the pivot was clicked into the void (far distance) - it was set behind the camera and not in the front of it
- Red error issue when accessing read-only images
- Jet palette refreshing issues in ortho/laser scan views
- Progress bar rendering issues in the console view - this fixes the cases when the progress bar was not displayed or was displayed with a wrong name
- Dot progress indicator rendering artifacts in a 3D view
- Scene load progress indicator
- Back jumps of progress report after UV unwrap in texturing

Version 1.0.3.9696 RC

Highlights:

- Image layers: now it is possible to automatically use different images for alignment, meshing and texture generation
- Screen grabber supports voice recording
- Color correction across images [Just for one 8-bit image layer. Multi-layer 16-bit/HDR planned for next release]

Selected new features:

- User can drag and drop image folders to the application
- Added new coordinate system "The same as XMP" for all exports
- New image undistortion export option which is preserving camera intrinsics
- Add 16-bit texture reprojection

Selected fixes:

- Laser scans processing fix for PPI
- Fixed red error caused when importing non-HDR image via HDR import dialog
- Fixed ignored component index during CLI export
- DSM ortho export in licensed project is now without watermark ... as should be [PPI only]
- CLI - exportRegistration to Maya not working

Version 1.0.3.9303 RC

Highlights:

- Brand new Pay-Per-Input [PPI] licensing model

Version 1.0.3.9128 RC Pre-Release

Highlights:

- MapWizard - new step-by-step wizard for processing drone data and creating georeferenced maps
- Map reports - export of reports for georeferenced ortho projections, their display in a map
- Support of 16-bit/HDR images for import and texture creation
- Improved Texture reprojection tool: added generation of displacement and normal maps, trilinear sampling and supersampling
- Improved CLI functionality - many new commands
- Localization into German (UI, Help, Reports)

Selected new features:

- Export model with cameras into alembic (*.abc) file format
- Textures in the 1Ds scene tree
- Possibility to display texture in 2D views
- 2D TEXTURE context ribbon
- Support of multi-layer textures – now you can see all texture layers in the 1Ds view as well as display them in a 2D view, each layer can be exported through the Model Export dialog
- Possibility to enable/disable displaying texture alpha in 2D views
- Option for cleaning imported models when non-manifold edges are detected
- Possibility to apply rotation to each axis in the Model Export dialog - use if you want your model to be aligned with different types of default coordinate systems in Maya, Zbrush, etc. [with transformation presets for Maya, Zbrush, etc.]
- Choice between 2 tone-mapping methods in the 16-bit/HDR Import dialog: local Windows codec or RC tone-mapping
- Conversion of imported 16-bit/HDR images to tone-mapped 8-bit images
- Support for RGB float (96bpp) HDR images
- Project and model name included in the default name of exported models and ortho projections
- Possibility to choose a pixel format of exported textures
- Possibility to export models as PTX and LAS files
- Booleans in settings' panels changed to Yes/No, Enable/Disable, On/Off.

New CLI commands:

- select a component, a model or an ortho projection by name
- export a component [registration] with its name as a parameter
- rename a selected component
- delete the cache
- delete a component or a model
- duplicate model
- export reports
- change the project or output coordinate system
- export a sparse point cloud

- texture reprojections
- define a distance
- get the progress information
- select a component with the least reprojection error
- select images from an image list
- set preferences for selected images
- import a video
- export XMP for a selected component
- reset ground
- Changed order of parameters for commands `exportRegistration` and `exportUndistorted-Images` (previously `exportRegistrationUndistortedImages`)
- Added possibility to run RealityCapture commands with drag-and-dropping an `.rccmd` file into the application
- Added possibility to use settings' files as optional parameters and reduced the ending of commands with `Ex` (deprecated commands)
- Added warning messages into the console for deprecated commands - the commands will be removed in the future
- Updated error messages

Selected fixes:

- Error "out of memory" during texture reprojection
- Errors when exporting to Alembic (.abc) file format
- Export of 16k texture to 128bit float EXR
- Texture reprojection of 16K texture
- Several dialogs not translated into German
- Crash during detection of April Tag markers
- Incorrect display of tone-mapped HDR images
- Crash during import of e57 files
- Unwrap texture utilization and speed
- Mesh artifacts created during simplification occurred when heavy triangle count reduction was chosen (e.g. less than 1% triangles, or to 10K tris)
- Long texture reprojection time for models with large number of textures
- Simplify command not accepting the .xml file with parameters
- Incorrect rendering of ortho projections in us-ft
- Import of a model with disabled texture resulting in an empty model
- Models created under wrong components when another component selected during the reconstruction
- Direct upload to Sketchfab
- Blending in the exported texture
- The Detect markers tool not available before input images have been added
- A reprojected-to layer not shown when the reprojection finishes
- Incorrectly displayed error message when loading a flight log for images not present in the project
- Export into Collada (.dae) file format
- Incorrect depth layer scale for ortho projection
- Incorrect project saving when a new name of the project was a part of the original name
- Image preview not shown in the rendered video

- Change of settings not taken into account when not confirmed by the enter key
- Incorrect display of the Point Rect and the Lasso tool cursors
- Incorrect string being shown in the console during detection of markers
- FBX export progress

Version 1.0.3.6310 RC

Highlights:

- Animation tool - now you can render fly-through videos with a manually defined trajectory via a 4D view
- Added model-to-model texture reprojection (experimental version)
- Added a possibility to import and process a video as an input

Selected new features:

- Now you can place control points (CPs) with measurement suggestions via ortho-projection
- Now you can drag and drop a CP from an ortho-projection into an image
- Suggested measurements are now displayed in 2D/3D views with a different marker
- You can disable animated fading in the Application settings - Animated UI (e.g. for faster remote desktop experience)
- Added space dividers to the property panel for rendering large numbers (e.g. 100000 will be displayed as 100 000)
- Added a new "simplifyEx" CLI command for simplification using any loaded settings
- Cameras with imported coordinates from a flight-log now displayed in the map view
- Altitude below sea level now loaded from EXIF
- Placing color cursors via 3D now working for CP measurements and suggested measurements
- Undo/Redo functionality added to several tools
- Cameras displayed in the map view by default
- Number of ortho-projections now displayed separately from models for each component

Selected fixes:

- Incorrect generation and loading of XMP files
- Creation of CP measurement suggestions and behaviour of the Unban/Clear suggested measurements buttons
- Non-georeferenced reconstruction region incorrectly imported into geo-referenced scenes (e.g. created from XMPs)
- Error during mesh export
- Incorrect mesh export for scaled models when exporting to grid-plane coordinates
- Hot/select of CPs in the 3D view and camera pivot rotation
- Impossible to close the error window if the app is moved outside the screen

Version 1.0.3.5681 RC

Highlights:

- Hard expiration extended to 12 months.
- Added new AprilTag marker types for automatic detection of coded targets.
- Possibility to export to FBX with embedded textures.

Selected new features:

- Now you can export arbitrary ortho projections into KML/KMZ format from different geographic coordinate systems.
- Markers are generated into PDF file format.
- Distance tool now shows 3 decimal places in ortho projections.
- Improved depth-map calculation speed for large datasets.
- Added area and volume calculation also for non-metric (e.g. GPS) coordinate systems.
- Added testing of CUDA driver version and driver update recommendation.

Selected fixes:

- Legacy marker types added for detection of markers generated in previous versions.
- Detection of legacy marker types.
- Crashing of markers' detection in projects containing laser scans.
- Report button moved to the Workflow tab.
- Texturing and smoothing abort.
- Camera selection cancellation when adding control points (CPs) into a 2D view.
- Both colored and non-colored 2D views are now used for image preview when placing CPs from a 3D view.
- Incorrect visibility of camera relation lines in the 3D view.
- Displaying incorrect image details in the 1D view.
- Crashing of E57 import due to invalid points.
- Crashing during import of high resolution laser scans.
- Incorrect generating of ortho projection report when no projection present in the scene.
- Incorrect display of resolution of ortho projections in non-metric CS.
- CP suggestions crash on CPUs without SSE 4.1 support.

Version 1.0.3.4987 RC

Highlights:

- Now you can create minimal, maximal, and average intensity textures.
- Model selection tools now respect clippingbox.
- Now you can export just textures without model.
- Selected new features:
- Masively increased marker detection rate and precision.
- Integrated custom HDR/16bit to 8bit tonemapping algorithm for better alignment and meshing [experimental].
- You can now hot and select control point measurement in 3d view and validate/delete it.
- Added 'Space separated with quotes...' format to import/export measurements.

- Invalidate view when selection is changed and many other small improvements.

Selected fixes:

- Fixed ortho projection out-of-memory bug when generating ortho projection of model with many textures.
- Fixed detection of very large markers.
- Fixed shifted lasso/rect polygon for large focal.
- Impossible unwrap now shows a meaningful message instead of the “unexpected program state” message.

Version 1.0.3.4658 RC

Highlights:

New Detect markers tool (experimental) - automatic detection of coded targets is now implemented along with the marker generator (just for Demo, PGM, CLI, and Perpetual licenses).

Now you can use draft XMPs for the coordinate system preservation of a bending-camera setup instead of a flight log.

Improved full-text search in Help.

Selected new features:

- Automatic suggestions of CP measurements now respect the area bounded by the clipping box.
- Camera-relation lines tool added to the 3D SCENE – now you can change the visibility of the camera relation lines in the 3D view.
- Hot-select distance constraint in 3D – hover/click on a distance constraint in the 3D view to hot-select it in all views.
- Hide cameras deselects a selection – applying the Hide cameras tool in the 3D SCENE deselects the current camera selection.
- New invert selection functionality – applying the Invert selection tool on an empty selection selects all vertices.
- An icon for a geo-referenced component is displayed in the 1Ds view (also for updated components).

Selected fixes:

- Import of a model with textures in the UDIM format.
- Several hard crashes.
- Wrong graphic scale in orthographic projections of a scaled model.
- Hard crash in the Selected Ortho Projection Report export.
- Reset Suggested Points failure with an empty selection - now if no CP is selected, it resets suggestions for all CPs.
- Empty view after reconstruction is undone by CTRL+Z.
- Camera lasso tool does not select previously disabled cameras.
- Units of a calculated area/volume is now displayed with superscript.
- Incorrect display of the alignment mode in the components' table after using the Start button.

Version 1.0.3.3939 RC

Highlights:

- New photogrammetry perpetual license : RealityCapture PGM

Version 1.0.3.3909 RC Pre-Release

Highlights:

- New selections experience - we have added some long-awaited tools.
- New map view experience - now you can see the physical location of your creation!
- New control points experience - add control points (CPs) in a fraction of time!
- New photogrammetry perpetual license : RealityCapture PGM - Perfect solution for purely photogrammetric projects.
- Added possibility to activate license for all users of the same computer

Selected new features:

- Added map view
- D&D of ortho projections to the map view - NOW you can display one or more ortho projections in the map.
- Imported ground control points (GCPs) and Camera (GPS) priors are displayed in the map view. No alignment needed.
- Aligned cameras are displayed in the map view.
- Hot/selected works on all objects in the map view - hover over the GCP or a camera in the map view to see its position on a model. Also, select GCPs to see which cameras have registered it.
- Distance constraints can be defined between CPs in the map view.
- Distance constraints are visible in the map & ortho & 3D view
- Added a new ortho sampling tool
- Possibility to export sampled points into xyz point-clouds
- CPs and constraints are shown in orthographic projections
- Ortho volume and surface drawn in the ortho panel
- You can now add control points through the 3D view
- After placement, suggested measurements are created automatically
- Zoom both in the 3D and 2D view with the mouse wheel during 3D control point editing
- Images are rotated, zoomed, and scaled automatically in 2D, when placing CPs in 3D to match the 3D view and the cursor (all 2D views in the current layout are used)
- User can navigate among images of the currently selected CPs using the up and down arrows
- Suggested and confirmed measurements are displayed in 3D as CPs to camera lines on CP hot/selection and during their placement
- Clear Suggested Measurements button added
- Reset Suggested Measurements button added
- Suggest Control Point Measurements button added - if you place 3+ GCPs and press update to geo-reference your project, then you can use this button to autosuggest mea-

surements for all other GCPs

- D&D control point measurement to view opens the associated image
- Possibility to export Basic, Component and Ortho Reports
- Fully customizable reports based on a scripting system
- Basic documentation included in the Help
- Lasso, Rect and Box selection tools added
- Added advanced selection tools, like selection by edge length
- Added expand selection possibility - now you are able to select a component part and expand the selection to the whole object
- Invert selection command added
- Possibility to create a reconstruction region from a selection
- Much higher quality model computation (zero: non-manifolds & holes)
- Out-of-core simplification algorithm - NOW you can simplify a model of any size to any number of triangles regardless of your computer memory
- Improved simplification quality (no holes & preserved marginal triangles)
- Added possibility to threshold new edge length, e.g. to simplify to maximal 3 mm edge
- Added model topology cleaning possibility
- Added holes closing possibility
- Added model topology inspection possibility
- Added a new strong smoothing type
- Simplification, smoothing, holes closing, ortho-projection now works on selections
- Filtering and smoothing - NOW preserves texturing!
- The reconstruction region is now created automatically always after alignment
- New undistort/export image formats, like EXR half-float etc.
- Added tooltips and descriptions
- Distance can be measured in the 3D view by two clicks
- The default unwrap algorithm changed from legacy to the new
- The default texture resolution changed everywhere from 16384x16384 to 8192x8192
- Full-text search possibility in Help
- Many new topics for new features & updates in Help

New CLI commands:

- unwrap
- importLaserscan
- importLaserscanFolder
- renamemodel
- exportRegistration
- exportRegistrationUndistortedImages
- closeHoles
- clean
- modelSelectTrianglesInsideReconReg
- modelSelectTrianglesOutsideReconReg
- modelSelectMarginalTriangles
- modelSelectLargeTrianglesAbs
- modelSelectLargeTrianglesRel
- modelSelectMaximalConnectedComponent
- modelInvertSelection

- modelDeselect
- modelRemoveSelectedTriangles

Selected Fixes:

- Fixed stalled depth-map calculation
- Fixed wrong unwrap and texturing after scaling
- Fixed numerical instability in texturing (earth-size registrations)
- New simplify algorithm fails with large projects
- Fixed the problem with the same image names in different directories when opening a project, i.e. when you use RealityCapture JUST AS A VIEWER
- Fixes of black blocks of textures & texture mixing in the Sweet model view
- Sketchfab upload bug fix
- Fixed the red error occurring sometimes during unwrapping
- Fixed the CLI execution break (white 3D view) that occurred in special cases
- Fixed missing ABGR and ARGB formats in EXR
- Grammar fixes & help experience fixes
- Several UI fixes for: clipping box, ortho photo, CP workflow etc.
- Fixed unwrap self-intersection
- Many other minor fixes

Version 1.0.2.3009 RC

This version extended the hard expiration date.

Version 1.0.2.3008 RC

Highlights:

- Critical fix of startup crash on: Win 7, Direct3D 9 & VM
- New help topics

Selected new features:

- Pivot rendering in 2D ortho view
- Improved help, added new topics
- Improved manipulation of widgets in ortho view

Selected fixes:

- Abort render mesh commands on application quit
- Unicode chars caused crashes in 3D
- Clipping box crash on delete component
- Fixed occasional crash when ortho-projection panel was closed
- Other minor fixes

Version 1.0.2.2935 RC

Highlights:

- Now you can see lines among control points and cameras in 3D
- Many new small features and improvements
- Application is more stable

Selected new features:

Count of the selected images is now displayed in the selection panel
Intelligent 3D View reset

New CLI commands:

- Ignore exif GPS can be turned on/off globally in the application settings
- Tooltips in the IDs
- User has various restart parameters' options on app start when holding shift
- New Help topics

Selected fixes:

- Corrected undistorted image names in FBX, Maya etc.
- Export model to GPS now exports coordinates in degrees
- CLI quit-related bug fixes
- Texturing fixes
- Screen grabber grabbing area fix
- KML/KMZ export fixes

Version 1.0.2.2810 RC

Selected new features:

- Ortho tool - now possible to display in the ortho view
- Reconstruction region - now possible to create from a clipping box
- Clipping box - NOW possible to create manually
- DRAG&DROP of control point image measurement opens the associated image
- Added "Find CPs" button to ALIGNMENT \ Selection panel
- Deletion of multiple components – much FASTER

Fixes:

- Several fixes in the ortho tool
- Duplicate entries in MRU project list
- Export GCP button is back
- Distance constraints GUI improvements
- Other minor fixes

Version 1.0.2.2742 RC

Highlights:

- You can now display full mesh in the 3D view
- Undistortion of all image layers, including 16bit, float formats, and EXR
- Automatic camera sensors database update

Selected new features:

- Added notification area
- Pivot displayed in the 2D image view
- Added “show unregistered” filter to the 2Ds view
- Automatic reconstruction box when clicking on the ortho tool and reconstruction box is not defined
- New CLI command: `-exportOrthoProjectionEx`
- Improved Help

Selected fixes:

- CLI quit is now waiting on finish
- CLI thread fighting fix for the set key
- Features calculation on background disables the align button
- Manual activation does not show reason text
- Grammar corrections
- Other minor fixes

Version 1.0.2.2600 RC

Highlights:

- Global config import/export
- Improved upload to Sketchfab experience
- Improved filtering experience and bug fixes

Selected new features:

- Updated sensorsdb.xml
- DEM export: undefined values changed to depth value of the bottom box side
- Infinite residuals not displayed

Selected fixes:

- Simplification moves object position
- Orthographic projection failed
- Deep zoom alpha problem
- Residuals’ checkbox disabled
- Inputs grouping: when just one image selected, it should group all images
- Dialogs Javascript Windows 7 problem
- Show crashes in the GPU selection panel
- Help: fixed the calculator in the How to Take Pictures/Photographs tutorial

- Grammar corrections
- Other minor fixes

Version 1.0.2.2525 RC

This version contained the same features as 1.0.2.2486 RC Demo, with some additional fixes and tweaks.

Version 1.0.2.2486 RC Demo

Highlights:

- New set of CLI commands
- New Help topics
- Improved user experience (UX) and bug fixes

Selected new features:

- Scene pivot rendered in 2D views
- Updated auto-detection function of the bundler import format
- UX enhancements - settings panel extension
- UX enhancements - export/import of panel settings to/from xml, reset settings
- CLI: import/export of (ground) control points, flight log can now be called with an xml exported from its panel
- Extended camera database (no yellow triangle for more cameras)
- Control points' selection export
- Help: advanced reconstruction settings
- Help: export/import of (ground) control points
- Help: CLI - UV unwrap parameters setup

Selected fixes:

- Texturing - texture shows triangles; Facetting in texture
- Application layout loading/saving
- Image 1D not showing prior pose panel
- Crashes of the new texture unwrap algorithm
- Console end possibly terminating another window
- Component selection after deletion of the last component
- Inconsistent default values in settings' panels
- Grammar corrections
- Other minor fixes

Version 1.0.2.2393 RC

Highlights:

- App can serve as a viewer without images

- Hard expiration notification
- Button for import/export of control points (measurements)

Selected new features:

- Default texture image format changed to PNG
- Default FBX type changed to the latest binary type
- Displaying application version name [RC, DEMO] in the About
- Load balancer during depth-maps computation stage - should improve speed on non-SDD drives
- New simplification algorithm RECONSTRUCTION \ Settings \ Advanced \ Use legacy simplify algorithm : default True. If you change it to false, then the new algorithm will be used
- New unwrap algorithm [experimental version]. RECONSTRUCTION \ Settings \ Advanced \ Use legacy unwrap algorithm : default True. If you change it to false, then the new algorithm will be used.
- Notification area button shows a message box with info upon clicking
- Single item selection export is treated as select all, too

Selected fixes:

- Fixed text errors
- Export FBX to binary. Binary was ignored
- Control points and updated state was not saved after UPDATE
- Sketchfab : displaying correct error directory creation failures
- Sketchfab : upload - texts updated
- Sketchfab : texture resolution fix
- Screenshot rendering ignored render/save and other bugs
- Wheel cycling on the ribbon
- Control point loader sanity checker
- Export component command crash fix
- Control point edit tool bug
- Ortho rendering branching
- Import cps measurements bug
- Underline text click delegates click to 'a' parent
- Help - the end of basics tutorial on 2nd slide

Version 1.0.2.2256 RC

Selected fixes:

- A hotfix of Sketchfab upload.

Version 1.0.2.2250 RC

Highlights:

- Upload to Sketchfab

- FBX export/import
- Number formatting options (double, scientific, etc.) in OBJ model export dialog

Selected new features:

- Default decimation factor fix. Added warning during the first start. Normal detail model will be by default of higher quality and higher density from now on (for the price of 10-20% slowdown).
- Export model to dxf, dae, asf, etc.
- Export model to buh, htr, trc, amc,c3d, aoa, mcd
- Export model with cameras as part of mesh
- Export calibration coordinate system unification with model
- Added suffix “.” to export part list
- Improved log performance
- WEB: Company, phone, and web are not required fields in registration anymore
- New flight log export calibration format in calibration.xml
- Improved help

New CLI commands:

- Import flight log CLI command
- Export ground control points / measurements
- Added “-set PrecomputeDepthmaps=true” + help description

Selected fixes:

- Fix of scale preservation of scaled models after export
- Fix of holes in the boundary box after simplification
- Fix to improve unwrap utilization
- Fix of out-of-memory issue in model computation
- Fix changed high decimation factor was not used at all (default 1.0)
- Fix of minor bug in undistort during calibration export
- Fix of win7 + ie8 javascript issue
- Fix of javascript issue
- Ortho images are not displayed when computed from CLI
- Fixed typos
- Tooltips fix
- Web minor fixes
- Fix of bug in preview model computation from tie points
- Updated app/company names in installation wizard
- Scrollable window overflow fix
- Fix of infinite image zoom
- Fix of out-of-mem in special case with ortho
- Image cache memory growing issues fix
- Fix of simplification minor bug
- Fix of texturing minor bugs

Version 1.0.2.2091 RC

Highlights:

- Extended help
- Adaptive texel size unwrap in the application
- Distance measurements in 3D by distance constraints
- Full calibration export to Maya (including the image plane)

Version 1.0.2.1976 RC

Highlights:

- Support for E57 format for importing point-clouds
- Faster 2D view rendering
- Image masks rendering in 2D views
- Quit on error for CLI
- Exported models are aligned with the editor grid/ground plane
- Possibility to play a sound or execute an external program after processing finishes
- Improvements in simplification algorithm
- Added image planes to Maya export
- Bug fixes and smaller UI changes

Version 1.0.2.1952 RC

Highlights:

- New simplification algorithm
- Support for alpha masking in alignment
- Several UI improvements, e.g. more contrast cross hair for adding control points
- Fixed issues with texturing laser scans
- Faster multi-part object export
- License renew dialog now opens automatically few hours before expiration
- Removed Capturing Reality logo from the promo version. You need to renew your license (application Settings\Licenses\Renew) and restart the application.
- We have also added support for laser scans to RealityCapture demo.