Data Sheet
RealityCapture Tarasque 1.2.2

Capturing data - Imports

- Images - in recognized file formats, like JPEG, PNG, TIFF, EXR, WEBP, BMP, DNG, HEIC
- RAW for all cameras with installed driver
- Frame captures from video files – in MPEG, AVI, ASF, QT, MOV, VMW
- Laser scans - in PTX, E57, PLY, ZFS and ZFPRJ
- 3D models - in OBJ, FBX, DXF, DAE
- Stereoscopic images from Leica BLK3D Image Group
- Flights logs and ground control points, support of PPK/RTK data with precision
- Support of image masks and different layers for texture or from AI segmentation

Aligning – Camera Registration

- Automatic registrations of different inputs – photos and laser scans in one step
- Possibility to create georeferenced or scaled scenes
- Re-use of camera registrations using XMP metadata (e.g. with fixed camera setups)
- Detection of misaligned cameras within Inspect tool

Meshing

- Generation of watertight 3D meshes with custom detail
- Mesh editing tools – simplification, smoothing, closing holes, mesh cleaning
- Tools for checking and repairing model topology

Texturing

- Calculating vertex colors
- Creating UV maps with a built-in unwrap tool
- Calculating model textures in UV and UDIMM format
- Re-projecting textures from high poly to low poly model
- Generation of normal and displacement maps

Orthophoto, DSM, DTM

- Creating georeferenced orthographic projections and maps
- Creating side and arbitrary projections
- Generation of DSM and DTM
- Creating sampled projections
- Creating and editing ortho mosaic

Sharing and Exports

- Direct upload to Cesium Ion and Sketchfab
- Export to Sketchfab at no additional cost using a PPI license
    (limitation 300k polygons and 1 x 4k texture)
- Export of sparse and dense point cloud - in XYZ, LAS, PTX
- Model export into standard formats - in OBJ, FBX, PLY, ABC, GLB, STL, 3MF, DXF, DAE
- Export of Level of Detail models and Cesium 3D Tiles - B3DM
- Reporting system – sharing of pre-defined or custom quality reports
- Exporting camera registrations, textures, ortho projections, DSM/DTM, contours

Measuring, Classification and Inspecting

- Automatic detection of coded targets, scene scaling, and georeferencing
- Automatic conversion between different coordinate systems (EPSG database implemented)
- Distance, area, and volume measurements of arbitrary shapes and regions
- Sparse point cloud inspections – camera relations and scene structure uncertainty
- Dense point cloud AI classification
- Measuring custom height profiles
- Creating and exporting model cross-sections

Automation and Integration

- Command line processing and scripting
- Batch processing outside the command line using RealityCapture commands
- Sending command-line commands to an already opened RC instance
    (possibility to use a high-level programming language to control the program flow)
- Automated workflow for transferring large datasets from RC to UE5
- RealityCapture to Unreal Engine Optimizations
- RealityCapture Automated CLI pipeline for Large Datasets UE5 Photogrammetry Importer

Industries

Surveying and aerial mapping

Using aerial photos and ground control points or PPK flight logs to create an accurate georeferenced model or a point cloud for mapping purposes. Exporting orthophoto map, DSM/DTM, and quality report, as well as any cut/fill measurements. Tools such as Map Wizard make the process simple so that even a beginner should be able to get a solid output without too much effort or having a steep learning curve.

VFX / Game industry

Hyper realistic assets created quickly and optimized well directly in RC using tools such as filtering, simplifying, smoothing, reprojection tool, clean model, and so on. This can be automated with CLI scripting to produce assets fast enough; you produce easy integration in your pipeline.

Full body scanning and product scans

Best results in the fastest time for 3D models created using camera rigs. Using CLI automation and camera registration XMP files to make things even faster and very cost-effective.

Simulation

Capturing physical objects and environments help professionals prepare for real-world scenarios. Photogrammetry enables the creation of immersive and sub-millimeter accurate simulations in several ways: terrain mapping, mission planning & targeting with the highest precision, training & simulation (VR/XR/AR/MR) exercises in a safe and controlled environment, furthermore, reconnaissance and evidence gathering for event reconstructions in forensics.

BIM and AEC

Create digital twins of building for planning reconstruction, new installation, or for visual inspection of structural defects. The 3D Tiles export allows using the result in any online inspection tool.

Manufacturing and 3D printing

Printing replacement parts easily by scanning the not documented original.

Cultural heritage conservation

Producing very detailed, 1:1 real-world scale and proportionally correct models that suit as a perfect solution for preserving historical subjects.

Research and education

There are many possible ways of use in science. For medical purposes all the way to creating 3D models of tiny bacteria. Capturing Reality supports education with tailored licensing models.

HW Requirements and Compatibility

- Local processing without size limitation, no cloud needed
- 64-bit PC with at least 8GB of RAM
- 64-bit Microsoft Windows version 7 / 8 / 8.1 / 10 / 11 or Windows Server version 2008
- NVIDIA graphics card with CUDA 3.0+ capabilities and 1GB RAM

We recommend using a machine with at least 4 CPU cores, 16GB of RAM, and 1024 CUDA cores. If you do not have the NVIDIA graphic card, you will still be able to run RealityCapture and register images, but you will not be able to create a textured mesh.

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