Agisoft

PhotoScan

Fully automated professional
photogrammetric kit

Agisoft PhotoScan is a stand-alone photo-grammetric software solution for automatic generation of dense point clouds, textured polygonal models, georeferenced true orthomosaics and DSMs / DTMs from still images.

Based on the state-of-the-art technology developed by Agisoft, it allows for **very fast** processing (typically within a couple of hours), providing at the same time **highly accurate** results (up to 3cm for aerial, and up to 1mm for close-range photography).

Agisoft PhotoScan is capable of processing of **thousands of photos**, yet all the **processing is performed locally**, without the need to transmit the data outside the company, making it ideal solution for processing of sensitive data.

The software package has a linear **project-based workflow that is intuitive** and can be easily mastered even by a non-specialist, while professional photogrammetrists have **complete control over the results accuracy**, with detailed report being generated at the end of processing.

CGPress Editor's Choice Award

3D World Highly commended

Advantages

01. Highly accurate and detailed results

02. Fully automated and intuitive workflow

03. GPU acceleration for faster processing

04. Network processing for large projects

05. Reasonably powerful Standard edition for art projects

06. Easy sharing with PDF / fly through video export and direct upload to online resources

07. Stereoscopic measurements for precise feature extraction

Capabilities

01. Aerial and close-range triangulation

02. Incremental image alignment

03. Dense point cloud generation and classification

04. True orthomosaic and DSM / DTM generation

05. Orthomosaic seamline editing

06. Elevation contour lines generation

07. Georeferencing using flight log and/or GCPs

08. Coded and non-coded targets auto detection

09. Coordinate / distance / area / volume measurements

10. Multispectral imagery processing and vegetation index calculation

11. Polygonal model reconstruction and texturing

12. Hierarchical tiled model generation and visualization

13. 4D reconstruction for dynamic scenes

14. Spherical panorama stitching

15. Built-in Python scripting for job automation

16. Headless operation support

Compatibility

01. Supports digital / film / video cameras and data from fixed camera rigs

02. Processes images from frame / fisheye / spherical / cylindrical cameras

03. Works well with most UAVs

04. Exports results in widely supported formats

05. Supports most EPSG coordinate systems and configurable vertical datums

06. Runs on Windows, Mac OS X, Linux

Build

Photorealistic, highly detailed 3D models, classified dense point clouds, fine resolution DEMs generated with Agisoft PhotoScan can be used in a wide range of applications, from visual effects industry to engineering projects.

Take a look
at Tutorials →

Measure

High accuracy of polygonal models and DSMs reconstructed with Agisoft PhotoScan guarantees precise area and volume measurements. Multispectral imagery processing with radiometric calibration support allows for precise NDVI index calculation, which makes PhotoScan software a valuable tool for agricultural projects.

Take a look
at Articles →
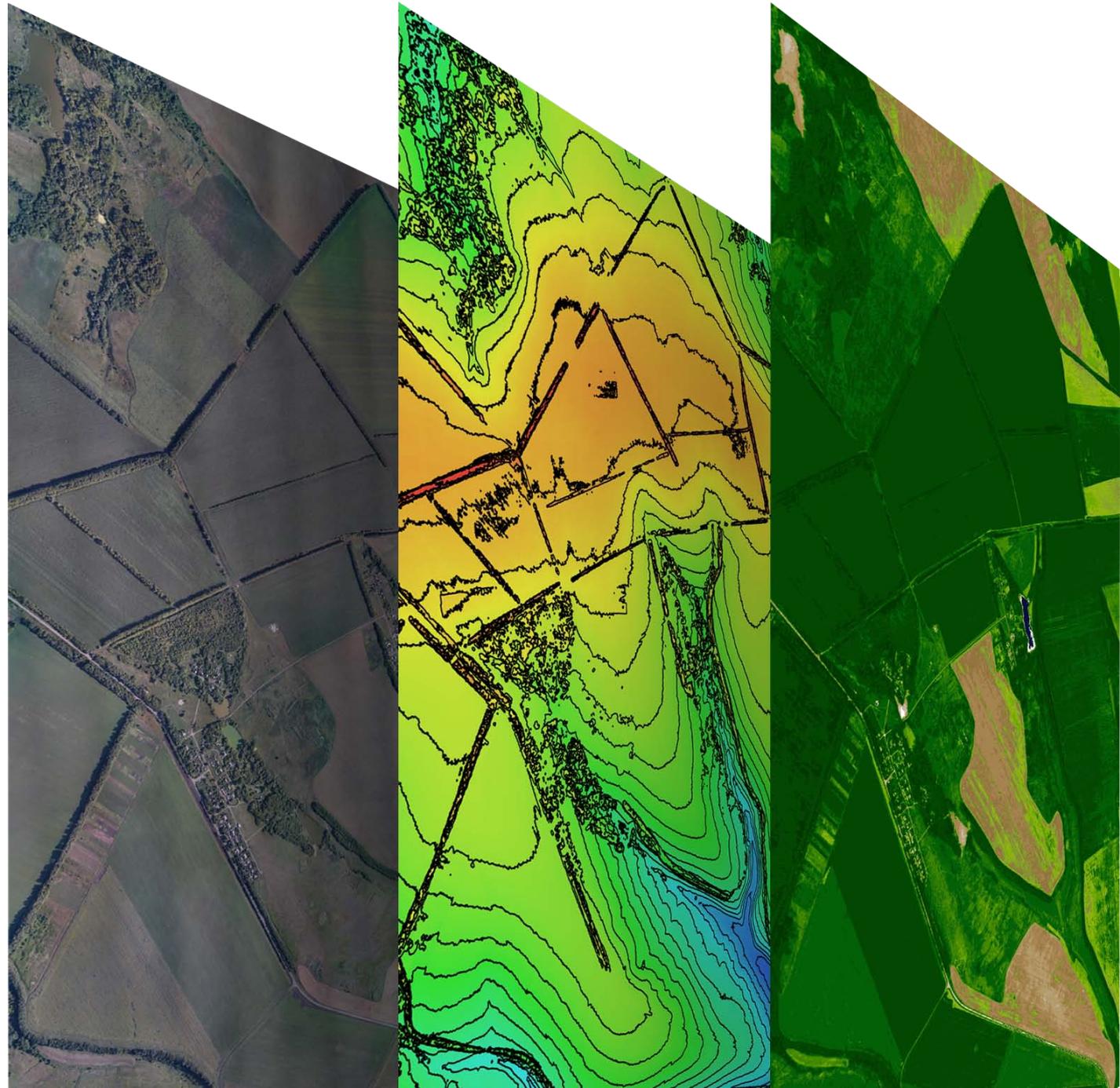
Visualize

Network processing capability of Agisoft PhotoScan allows to efficiently reduce computation time while working with massive data. Optimized hierarchical tiled model generation provides for city-scale modeling making all the operations with the big data very smooth in a compatible GIS.

Take a look at Showcase →

Surveying and Mapping

Seamless orthomosaic

PhotoScan is a perfect tool for aerial imagery processing. The functionality of the program is being constantly developed according to the tasks set by rapidly emerging UAS industry.


PhotoScan has proved to be a professional level post-processing tool capable of dense point clouds generation and classification for further exceptionally detailed DSMs/DTMs calculations and high-resolution seamless orthomosaics export, not to mention reconstruction of precise polygonal models of large scale objects. It is an indispensable part of the GIS workflow starting with a UAV system.

Mining and Quarrying

Highly accuarte measurements

Highly accurate DEMs produced by PhotoScan lay the grounds for precise area and volume measurements, both for excavations and piles. Once multiple flights performed at different time moments, PhotoScan allows for volume change tracking, soil erosion and glacier studies.
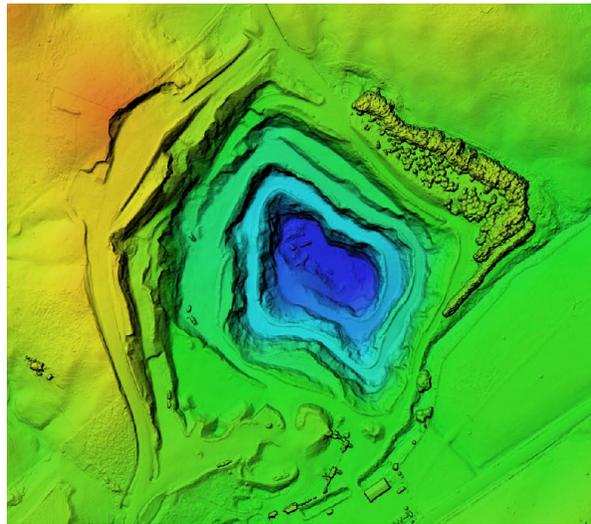

Automatic non-coded targets detection capability saves up on human work in inspection projects done on a regular basis.

Precision Agriculture and Environmental Management

Customized vegetation index calculation

With support for panchromatic, multispectral and thermal imagery, PhotoScan seamlessly integrates into workflows involving processing of data from diverse sources, like vegetation and soil analysis, fires and night studies, etc.
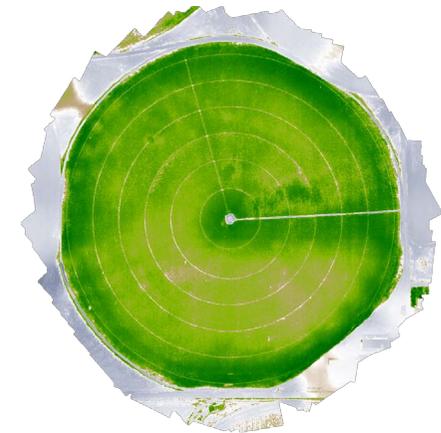
Vegetation indices calculation according to a user-defined formula allows to analyze crop problems and generate prescriptions for variable rate farming equipment.

Archaeology and Documentation

Works well with consumer camera

Archaeology more and more often relies on photogrammetric approaches today, be it a need to model an artifact or a demand for an excavation mapping.

Thanks to the capability to process imagery from any digital camera, PhotoScan is widely used in various archaeological projects both up in the mountains and deep under the water, including special researches like a greenery pattern study to find ancient ruins under the ground or a rock art documentation and analysis project.

Architecture and Cultural Heritage

Oblique imagery support

Numerous projects prove that PhotoScan is a quality tool to solve the tasks of facade and building modeling.

With support for oblique imagery processing, PhotoScan allows to reconstruct the whole building, which can be employed for virtual tours creation, with reconstruction results being exhibited as illustrative models of large-scale cultural heritage objects. 3D models of partially ruined monuments and artifacts generated with PhotoScan present reliable basis for restoration works thanks to exceptional accuracy of reconstruction results.

Visual Effects and Game Design

Photorealistic texture

Thanks to being highly detailed and photo-realistic, PhotoScan models meet the strict requirements of professional animation studios, which successfully employ the software for movie and game production.

Face and body capture results, being among the most demanded ones, prove that PhotoScan potential goes beyond one's imagination.

Agisoft PhotoScan 1.4

Powerful tool
for challenging tasks

Agisoft PhotoScan 1.4 adds stereoscopic measurements capability for precise feature extraction using stereo-enabled hardware. Scanned aerial imagery with fiducial marks support enables processing of archive photo collections. New tiled model export formats provide compatibility with ArcGIS and Cesium platforms. Vegetation index accuracy is improved thanks to radiometric calibration plate support and integration of sensor metadata for MicaSense cameras. Mesh refinement and texture delighting tools help to enhance model quality for visual effects and game design professionals. Incremental image alignment, video import and fly through animation export will please every user of PhotoScan software.
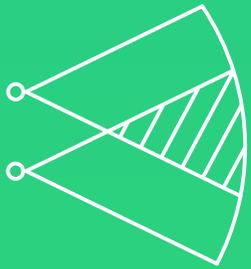
Stereoscopic Measurements

PhotoScan 1.4 enables to measure and vectorize the data in stereo view. **Image overlays** against 3D reconstruction results allow for highly accurate cursor positioning.

The support for **3D controllers** provides operators with the possibility to use familiar input devices, while additional split screen **3D visualization modes** extend compatibility to consumer range displays.

Precise Vegetation Indices

Integration of additional meta data such as **irradiance sensor** measurements and camera **exposure settings** improves reliability of calculated vegetation indices.

Support for **radiometric calibration plates** with known albedo values helps to account for lighting conditions during the flight. **Multispectral tiled models** enable vegetation index inspection in three dimensions.

3D Modelling Tools

Incremental image alignment allows to add missing images in course of processing. **Dense point cloud display filters** simplify editing operations. **Mesh refinement** is aimed at improving details on complex surfaces. **Delighting algorithm** generates shade-free textures.

Move/scale/rotate object tool permits to adjust coordinate system when reference information is not available.
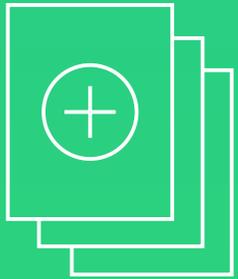
More Data Sources

PhotoScan 1.4 now works with **scanned aerial images** with fiducial marks.

Video import tool allows to use a video camera for time-efficient inspections.

Camera rig support is extended to include close range applications.

Other Improvements

Built-in support for **fly through** video generation

User configurable **datum transformations** to maintain required accuracy during processing

Survey Statistics dialog for handy inspection of the statistics data

Indexed 3D Scene Layer and **Cesium 3D Tiles** export for ArcGIS and Cesium platforms

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