



| | Features | Advantages |
|--|---|--|
| INPUTS | Aerial (nadir & oblique) and terrestrial imagery | Process images taken from any angle from aerial or terrestrial, manned or unmanned platform |
| | Video (mp4 or avi format) | Automatically extracts still frames from videos files to create a project |
| | Any camera (compact, SLR, thermal, multispectral, GoPro, 360°, Tetracam, large-frame, etc.) images in .jpg or .tiff | Use images acquired by any camera, from small to large frames, from consumer-grade to highly specialized cameras |
| | Multi-camera support for the same project | Create a project using images from different cameras and process them together |
| | Camera rig support | Process images using known rig relatives from multiple synchronized cameras |
| | Ground control point edit and import | Import and edit ground control points to improve the absolute accuracy of your project |
| | Known or custom reference coordinate system support in imperial or metric units | Select EPSG code from known coordinate systems or define your own local system |
| | Camera exterior orientation support | Optimize camera exterior orientation parameters starting from GPS and IMU input parameters |
| | External point cloud import | Import a point cloud from different sources, such as LiDAR, to generate DSMs & orthomosaics |
| | PROCESSING | Processing templates |
| Rapid Check with Quality Report | | Rapid processing template for a quick dataset-check while still on site |
| Camera self-calibration | | Optimize internal camera parameters, such as focal length, principal point of autocollimation and lens distortions |
| Rolling shutter effect correction | | Correct the warp of images taken with rolling shutter cameras (like GoPro, DJI Phantoms, etc.) to maintain accuracy even when flying fast and low |
| Automatic Aerial Triangulation (AAT) and Bundle Block Adjustment (BBA) | | Process automatically with or without known camera exterior orientations: (x, y, z, w, f, k) |
| Automatic point cloud densification | | Produce a dense and detailed 3D point cloud, which can be used as a basis for DSM and 3D mesh |
| Automatic point cloud filtering & smoothing | | Use presets for point cloud filtering and smoothing options |
| Machine-learning point cloud classification | | Automatically classify the RGB dense point cloud into five groups: ground road surfaces, high vegetation, buildings and human-made objects |
| Automatic DTM/DEM extraction | | Remove above-ground objects from DSM and create a bare-Earth model |
| Automatic brightness and color correction | | Compensate automatically for change of brightness, luminosity and color balancing of images |
| Automatic outlier detection | | Detect and visualize incorrectly-clicked MTPs (Manual Tie Points)/GCPs (Ground Control Points) |
| Quality Report | | Assess the accuracy and quality of projects |
| Project merging and splitting | | Combine multiple projects into one or split large projects into several for more efficient processing |
| Project area definition | | Import (.shp) or draw specific areas to faster generate results inside specific boundaries |
| Custom number of keypoints | | Set the number of keypoints to filter noise or speed up processing |
| Multiprocessor CPU + GPU support | | Increase the processing speed by leveraging the power of CPU cores and threads, as well as GPUs |
| Radiometric processing and calibration | | Calibrate and correct the image image reflectance, taking the illumination and sensor influence into consideration |
| RAYCLOUD EDITOR | Project visualization | Assess quality of optimized camera positions, 3D point cloud and mesh |
| | Navigation modes | View 3D point cloud and mesh in standart, trackball or first person viewing modes |
| | Scale Constraint | Accurately scale projects with no or imprecise geolocation by defining one/multiple distances |
| | Orientation Constraint | Orientate objects with no or imprecise geolocation by defining directions of one/multiple axes |
| | Ground control point (GCP) / Manual tie point (MTP) editing | Annotate and edit 2D and 3D GCPs, check points, and MTPs with the highest accuracy, using both original images and 3D information at the same time |
| | Ellipsoid error visualization | Visually assess the size of the error of the computed position of a GCP or MTP |
| | Project reoptimization | Reoptimize camera positions and/or rematch images based on GCPs & MTPs to improve reconstruction |
| | Image masking | Carve: Remove points from 3D point cloud and create filters based on image content |
| | | Mask: Clear the unwanted background in orthoplane results. |
| | Global Mask | Global Mask: Disregard objects that appear in all images, such as a drone leg or a tripod |
| | | Select, classify or delete points from the point cloud using various selection tools |
| | Point cloud editing | Select, classify or delete points from the point cloud using various selection tools |
| | Orthoplane creation | Define a plane to generate a DSM and orthomosaic from building facades, bridge piles, etc |
| | Polyline and surface object creation | Annotate and measure polylines and surfaces in the point cloud. |
| | | Accurately refine vertexes in multiple original images |
| 3D mesh and DSM editing | Annotate & create surfaces in the point cloud to flatten an area or fill up holes in the mesh and DSM | |
| Fly-through animation | Create a virtual camera trajectory, play the animation in real-time and export it | |

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| VOLUME MANAGER | Volume object creation |  | Annotate and measure volumes based on the DSM |
| | Volume object management |  | Import and export selected volume bases in .shp files to enable easy monitoring of stockpiles on site |
| | Base adjustment |  | Adjust the reference base to fit different terrain and obtain accurate measurement |
| MOSAIC EDITOR | Region editing |  | Create and edit regions on the orthomosaic, choose the best content from multiple underlying images and projection type to remove moving objects or artifacts |
| | Local blending |  | Edit only the desired portion of the orthomosaic, blend it in real-time and get the improved orthomosaic within minutes |
| | Planar or ortho projection selection |  | Select planar or ortho projection for each created region to remove artifacts |
| INDEX CALCULATOR | Radiometric adjustment interface |  | Make the vegetation indices more reliable and accurate by applying radiometric corrections |
| | Reflectance map |  | Generate an accurate Reflectance map and the preferred resolution as a basis of index maps |
| | Multiple region management |  | Improve your analysis by managing and visualizing index values per region |
| | Automatic NDVI map |  | Generate singleband and NDVI maps based on pre-defined formulas without user intervention |
| | Index formula editing |  | Create and save your own formulas choosing among each input band and generate custom index maps |
| | Class management |  | Create a basis of your annotated vector map by segmenting the data into classes using statistical algorithms |
| | Prescription annotation |  | Match on-site scouts and observations by assigning annotations based on your decisions |
| | Prescription map export |  | Put your data into action and export the prescription map in .shp format |
| OUTPUT RESULTS | 2D output results: |   | Nadir orthomosaics in GeoTIFF output format |
| | |  | Orthomosaics from user-defined orthoplane in GeoTIFF output format |
| | |  | Google tiles export in .kml and .html output formats |
| | |  | Index maps (Thermal, DVI, NDVI, SAVI, etc.) in GeoTIFF and GeoJPG format |
| | |  | Prescription maps in .shp format |
| | 2.5D output results: |   | • Nadir DSMs and DTMs in GeoTIFF format |
| | |  | • DSMs from user-defined orthoplane in GeoTIFF output format |
| 3D output results: |  | • 3D PDF for easy sharing of 3D mesh • Full 3D textured mesh in .obj, .ply, .dxf, and .fbx format • Tiled Level-of-detail (LoD) mesh in osgb and slpk (Esri) format • Point cloud in .las, .laz, .xyz and .ply output format • Contour lines in .shp, .dxf, .pdf format • Classified point cloud in .las and .csv format • Contour lines in .shp, .dxf, .pdf format • User-defined vector objects in .dxf, .shp, .dgn, and kml format" | |
| |  | "• Full 3D textured mesh in .obj and .fbx format • Point cloud in .las output format • Georeferenced annotations in .csv, GEOjson, and .shp format" | |
| |  | Export the animation in .mp4 and .avi formats and the fly-through waypoints and path in .csv format | |
| Optimized camera position, external orientation and internal parameters, Undistorted images |  | Export Aerial Triangulation results into traditional photogrammetry software solutions (e.g. INPHO, Leica LPS, DAT/EM Summit Evolution) | |
| MULTI-LINGUAL | Language Options |  | English, Spanish, Mandarin (zh-CH, zh-TW), Russian, German, French, Japanese, Italian and Korean |
| | |  | English, Japanese, Korean |

Features

Advantages

PIX4D CLOUD
PLATFORM

Visualization
Measurement
Inspection
Documentation
Collaboration

-  View 2D maps and 3D models using any web browser - mesh and point cloud visualization options
-  Visualize current and previous days data on an intuitive timeline
-  Measure distances and areas on 2D maps and 3D models
-  Calculate volumes
-  Annotate 2D maps and 3D models with polygons and location markers
-  Upload and overlay drawings, design plans and maps to compare as-built vs. as-design
-  Compare day-to-day layers with the 2D Comparison tool
-  Generate cross-sections with the elevation profile tool
-  Real-time shading for digital surface model (DSM) visualization
-  Inspect and annotate using both original images and 3D information at the same time
-  Export annotations in .cvs, GeoJSON and Shapefile
-  Download and import data into CAD/BIM software
-  Share projects via a simple link
-  Embed project output in a webpage

HARDWARE
SPECS



CPU: Quad-core or hexa-core Intel i7/Xeon recommended



HD: SSD recommended
RAM: 16GB - 60GB



GPU: Compatible with OpenGL 3.2
2 GB RAM recommended



OS: Windows 8, 10 64 bits
Linux (upon request)



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