Pix4Dmapper Pro | Feature list

Version 1.4

	Features	Advantages
INPUTS	Aerial (nadir and oblique) and terrestrial imagery support	Process images taken at any angle and from any aerial manned or unmanned platform as well as from the ground
	Any camera (compact, SLR, multi-spectral, GoPro, Tetracam, large format)	Use images acquired by any camera, from small to large sensors (up to 40 MP), from consumer-grade to highly specialized cameras
	Any lens, including Fisheye	Choose the lens that fits your project, use wide lenses to increase the content of each image, acquire data from closeby, interiors and narrow spaces
	Multi-camera support for the same project	Create projects using more than one camera and process them together (NIR and RGB for example)
	Standard camera rig support	Process camera rigs (arrays) of multiple multi-band synchronized cameras from known manufacturers (Tetracam, Airinov, MicaSense, WaldoAir) for more robust, accurate and faster processing
	Multiple file types (.jpg, single band or multi band .tiff)	Input various file types, including single or multi-band images
	Ground Control Point edit and import (.csv, .txt)	Import and edit Ground Control Points to improve the accuracy of your project
	Local, global and arbitrary coordinate reference system support in meters and feet	Choose from all known coordinate systems or your own local system
	Camera position and exterior orientation (omega, phi, kappa) support	Calculate optimized camera position and exterior orientation from a low grade GPS and without any IMU
	External point cloud import	Import a point cloud from different sources, such as aerial LiDAR, and use it to create a DSM and orthomosaic
PROCESSING	Rapid Check processing mode	Process initial project results in low-resolution in minutes only
	Rapid Check Quality report	Assess quality and completeness of acquired images while still on site
	Camera self-calibration	Optimize internal camera parameters, such as focal length, principal points and lens distortions, without the need of a camera calibration report
	Automatic Aerial Triangulation (AAT) and Bundle Block Adjustment (BBA)	Process automatically with or without known camera position and exterior orientation
	Automatic point cloud densification (and optional Semi-Global Matching)	Produce a dense and detailed 3D point cloud, which can be used as a basis for DSM and orthomosaic generation
	Automatic point cloud classification and DTM extraction (BETA)	Remove building and vegetation automatically in the point cloud to generate bare earth DTMs and contour lines. For additional control, select and delete points manually in the rayCloud to improve the DTM generation
	Point cloud filtering and smoothing	Use presets or edit point cloud filtering and smoothing options
	Automatic brightness and color correction	Compensate automatically for change of brightness, luminosity and color balancing of images
	Quality Report	Assess quality of projects
	Project merging	Process parts of projects individually and merge them into one project
	Project area definition	Import (.shp) or draw specific orthomosaic and point cloud densification/ filtering areas to generate results inside specific boundaries
	Project splitting	Split big projects automatically into smaller parts for more efficient large-scale mapping
	GPU support	Leverage the power of Nvidia GPU's for 10% - 75% faster initial processing (depending on image content and project size). GPU support also used for densification.
RAYCLOUD EDITOR	Project viewing	Assess flight plan, camera positions, inspect automatic keypoint matching and add uncalibrated cameras
	Manual tie point editing	Annotate and edit GCPs (2D & 3D), Check Points and Manual Tie Points with the highest accuracy, using both original images and 3D information at the same time
	Project reoptimization	Reoptimize camera positions and rematch images based on GCPs and manual tie points to improve reconstruction of difficult areas

➔ *RAYCLOUD EDITOR Continued*

RAYCLOUD EDITOR *Continued*	Image annotation	Remove points from 3D point cloud and create filters based on image content
	Point cloud editing	Select and delete points from the point cloud
	Polyline object creation	Annotate and measure polylines (3D breaklines) in the point cloud and accurately refine polyline vertexes in multiple original images
	Surface object creation	Annotate and measure surfaces in the point cloud and accurately refine surface vertexes in multiple original images; use the surface to simplify, flatten and correct DSMs (e.g. for removing structures or tree stands)
	Volume object creation (volume measurement)	Annotate and measure volumes (stockpiles) in the point cloud. Import/export base planes of volumetrics
	Digitization tools / vector object editing	Draw and edit vector objects and export them in various formats (.dxf, .shp, .dgn, .kml)
	Fly-through animation	Create a virtual camera trajectory in the 3D point cloud, play the animation in real-time, export the animation as a video (in mp4 and avi format) and the flightpath waypoints in CSV format
INDEX CALCULATOR	Radiometric adjustment interface	Make the indices more reliable and accurate by correcting for illumination effects using a radiometric target
	Reflectance map editing	Set and edit map resolution
	Automated index generation (NDVI)	Generate single-band and index maps based on pre-defined formulas in a single click without manual user intervention
	Draw field bounds and compute index per crop variety	Improve your analysis by computing and visualizing index values by crop variety
	Formula editing	Create and save your own formulas choosing among each available input band and generate custom index maps
	Automatic index segmentation	Create the basis of your annotation map by automatically segmenting the data into multiple classes using statistical algorithms (equal area, equal spacing) based on the historgram of the index map
	Application map annotation	Match ground observations with survey data by assigning values and annotating zones based on your decisions
	Export the application map as shapefile (SHP)	Put your data into action and import the application map directly into the tractor console or most Farm Management Software
MOSAIC EDITOR	Seamline editing	Create, edit and reorganize mosaic cells for seamline editing
	Planar / ortho projection selection	Select planar or ortho projection for each cell or groups of cells to remove orthomosaic distortions
	Mosaic color / brightness editing	Choose the best cell content from multiple underlying images (e. g. for deleting moving objects), adjust color and brightness balancing
OUTPUT RESULTS	2D output results	• Geo-referenced orthomosaics in GeoTIFF output format • Google tiles export in KML and HTML output format • Mapbox tiles in MB TILES format • Index maps (DVI, NDVI, SAVI, etc.) in GeoTIFF and SHP format
	3D output results	• Geo-referenced DSMs and DTMs in GeoTIFF format • Full 3D textured mesh in OBJ, PLY and Zipped OBJ format • Point cloud in LAS, LAZ, XYZ and PLY output format • Contour lines in SHP, DXF and PDF format • User-defined vector objects in DXF, SHP, DGN and KML format • 3D PDF for easy sharing of 3D mesh
	Fly-through animations and flightpaths	• Point cloud Fly-through animation in MP4 and AVI format • Fly-through waypoints and path in CSV format
	Optimized camera position, external orientation and internal parameters, undistorted images	Import Aerial Triangulation results in traditional photogrammetry software solutions (e.g. INPHO, Leica LPS, DAT / EM Summit Evolution)

Hardware specifications
Minimum requirements: Windows 64bit / 7, 8, Server / 2-Core CPU / 4GB RAM / GPU: any Nvidia and AMD model starting from 2008 and Intel model starting from 2012 (OpenGL 3.2)
Recommended: 6-Core CPU i7 or Xeon /16GB RAM (or more depending on dataset size) / CUDA compatible GPU

PIX4D simply powerful

Pix4D SA
EPFL Innovation Park
Building D
1015 Lausanne
Switzerland

General inquiries: info@pix4d.com
Sales inquiries: sales@pix4d.com
Support inquiries: support@pix4d.com
Phone: +41 21 552 05 90
www.pix4d.com

www.pix4d.com
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