

	Features	Advantages
INPUTS	Aerial (nadir & oblique) & terrestrial imagery	  Process images taken from any angle with from aerial or terrestrial, manned or unmanned platform
	Video (mp4 or avi format)	 Automatically extracts still frames from videos to create a project
	Any camera (compact, SLR, thermal, multispectral, GoPro, 360°, Tetracam, large-frame, etc.) images in .jpg or .tiff	  Use images acquired with any camera, from small to large frames, from consumer-grade to highly specialized cameras
	Multi-camera support in 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 point clouds from different sources, such as LiDAR, to generate DSMs & orthomosaics
PROCESSING	Processing templates	 Automate processing and generation of outputs by using standard or customized 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 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 standard, trackball, or first person viewing modes
	Scale Constraint	 Accurately scale projects with no or imprecise geolocation by defining one/multiple distances
	Orientation Constraint	 Orientate projects 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: Disregard objects that appear in all images, such as a drone leg or a tripod
	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	

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 indices more reliable and accurate by correcting illumination effects using a radiometric target
	Reflectance map		Generate an accurate Reflectance map at 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 available 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 (equal spacing, equal area, Jenks)
	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 Geotiff 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 • 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
Fly-through animation and flighpaths		Export Aerial Triangulation results into traditional photogrammetry software solutions (e.g. INPHO, Leica LPS, DAT/EM Summit Evolution)	
CLOUD PLATFORM	Web processing, visualization, inspection and collaboration		Process on the cloud -using any web browser-
			Visualize 2D maps and 3D models -mesh & point cloud visualization options-
			Instant measurement of distances and surfaces
			Inspect objects: visually connect a 3D point and the original images used to compute its location
			Share Projects with annotations via a simple link
			Embed project output in a webpage
			Real-time shading for digital surface model (DSM) visualization
MULTI-LINGUAL	Language Options		English, Spanish, Mandarin (zh-CH, zh-TW), Russian, German, French, Japanese, Italian and Korean
	 Cloud platform  Desktop platform		English, Japanese

## HARDWARE SPECS



**CPU:** (quad-core or hexa-core Intel i7/ Xeon recommended)



**HD:** (SSD recommended)



**GPU:** Compatible with OpenGL 3.2 (Ge-Force 2 GB RAM recommended)



**OS:** Windows 7, 8, 10 64 bits  
Linux (Enterprise only)



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