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INPUTS	Aerial —nadir & oblique— and terrestrial imagery	Process images taken from any angle from, any 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, DSLR, thermal, multispectral, fisheye, 360°, 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 (large frame add-on required for images over 55 MP)
	Multi-camera support in the same project	Create a project using images from different cameras and process them together
	RTK/PPK + IMU data support	Allows faster and more robust calibration when using the Accurate Geolocation Pipeline
	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
	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 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 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.
	Point cloud editing	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
	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
Visual outlier detection	Detect and visualize incorrectly-clicked MTPs (Manual Tie Points)/GCPs (Ground Control Points)	
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 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
	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"
	Fly-through animation and flight paths		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,		Export Aerial Triangulation results into third-party software (e.g. INPHO, Leica LPS, DAT/EM Summit Evolution)	
Undistorted images		If the original images were acquired using a perspective lens an undistorted copy of the calibrated images will be generated	
COLLABORATION	Web share, inspection and visualization		Visualize 2D maps and 3D models using any web browser -mesh & point cloud visualization options-
			Measurement of distances, surfaces, and elevation profiles
			Inspect and annotate using both original images and 3D information at the same time
			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
			English, Japanese, Korean

## 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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