PIX4Dmatic 1.54.1 — FEATURE LIST

Features		Advantages
INPUTS		
Aerial and terrestrial images in .jpg .jpeg .tiff formats	🖥	Process any RGB images that support basic EXIF/XMP tags.
LiDAR and RGB images from PIX4Dcatch	🖥	Process both LiDAR and RGB images outputs from PIX4Dcatch for a full terrestrial workflow.
Multi-camera support in the same project	🖥	Create a project using images from different cameras and process them together.
Import image geolocations and orientations as .csv or .txt	🖥	Text file import (.csv/.txt) for image geolocation and orientation.
Ground Control Points (GCPs)	🖥	Import and mark ground control points to improve the absolute accuracy of the project.
GCPs marks	🖥	Import of GCP marks from PIX4Dmapper into PIX4Dmatic.
Known reference coordinate system support	🖥	Select EPSG or ESRI codes from known coordinate systems libraries. Select a default coordinate reference system for easy setup.
Geoid support	🖥	Support of most commonly used geoid models. You can select a geoid height even if there are geoids available.
Arbitrary coordinate reference system support	🖥	Georeferencing of the project with GCPs in local or site specific coordinate systems.
Site localization	🖥	Import a .wkt created with PIX4Dcatch, or a .prj file and set your custom coordinate system.
Region of interest (ROI)	🖥	Define a Region of interest to delimit an area in order to reduce the extent of outputs generated for a project, speed up the processing, or even create sharper outputs.
Scale constraint	🖥	Define a scale constraint with a distance and an accuracy, which enables scaling a project based on that input at the Calibration step.
Orientation constraint	🖥	Define an orientation constraint with a direction and an assigned axis, which enables orienting a project without orientation information at the Calibration step.
Open Photogrammetry Format (OPF) 1.0	🖥	Import a project created with the Open Photogrammetry Format (OPF) 1.0 specifications.
Edit Camera Internals and Externals	🖥	Fine-tune camera settings for enhanced control over calibration and data accuracy
PROCESSING		
Multicore CPU + GPU support	🖥	Increase the processing speed by leveraging the power of CPU cores and threads, as well as GPUs.
Backup mechanism	🖥	An automatic backup mechanism ensures that you do not lose your work when something unexpected stops PIX4Dmatic.
Calibration	🖥	Define the *Template*, *Pipeline*, *Image Scale*, *Keypoints* and *Internals confidence* parameters for the optimization of internal camera parameters (e.g. focal length, principal point of autocollimation and lens distortions) and external camera parameters (position, orientation) during calibration.
Reoptimize	🖥	Reoptimize internal and external camera parameters based on GCPs or MTPs to improve the reconstruction.
AutoGCP	🖥	Automatic detection of control targets of known shape for faster marking experience.
Auto-mark	🖥	For nadir projects, once at least 2 marks were added for a tie point, find more marks of the same point.
Intersection Tie Points (ITPs)	🖥	Generate intersection tie points as part of the calibration for improved calibration e.g. for indoor scenes.
Merge & Register projects	🖥	Merge & register two or more projects that overlap
Depth point cloud	🖥	Create a depth point cloud based on LiDAR inputs from PIX4Dcatch.
Point cloud densification	🖥	Define the point cloud Density, Number of Matches, Image Scale, Noise filter and Sky filter parameters to create a dense point cloud based on the sparse point cloud created during calibration.
Depth & dense fusion	🖥	Create a single point cloud based on the depth point cloud and the dense point cloud.
Planes	🖥	Generate planes automatically for improving the mesh of your model.
Mesh	🖥	Define the mesh Input, Template, Texture size, Deghosting, Decimation, Sky mask, Smoothing parameters to create a 3D Textured Mesh
Digital Surface Model	🖥	Define the Resolution cm/px, enable Surface smoothing with its Median filter radius (px) and enable Interpolation for the digital surface model creation.
Orthomosaic	🖥	Create an orthomosaic based on the digital surface model and the images and set Deghosting or Oblique parameters.
Quality report	🖥	Assess the quality of the reconstruction between processing steps with the detailed quality report
Processing templates	🖥	Select the Nadir, Oblique, PIX4Dcatch or Custom processing template.

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	Feature		Description
RAYCLOUD	Project visualization	🖥	Visually assess the accuracy of the camera geotags, the quality of optimized camera positions, automatic tie points, dense point cloud, mesh, digital surface model and orthomosaic. In Perspective or Orthographic views.
	GCPs	🖥	Annotate GCPs with the highest accuracy, using both original images and 3D information at the same time.
	Checkpoints	🖥	Annotate Checkpoints with the highest accuracy, using both original images and 3D information at the same time to verify the absolute accuracy of the project.
	Manual Tie Points (MTPs)	🖥	Create and mark manual tie points to improve the calibration of your project.
	Intersection Tie Points (ITPs)	🖥	Create and mark manual ITPs or edit and delete automatic ITPs to improve the calibration of your project.
	Undo/Redo your changes	🖥	Undo/Redo actions.
	History	🖥	All actions of a given session are available in the history panel. Revert to the project at any stage, while keeping the other steps that were done as items in the history.
	Status center	🖥	More detailed information about what happens when processing and working in the software.
	Distance measurement	🖥	Measure a distance in the scene.
	Polygon	🖥	Create planar or non-planar polygons, polygon holes or edit and automatically generate planes to improve the mesh of your project
	Vector layers and Layers templates	🖥	Enhance workflow with customizable vector layers and pre-defined layer templates for efficient data management
	ASPRS Classes	🖥	Classify point clouds from your projects. You can edit classes membership, export per class, delete, or show/hide each class.
	Base maps	🖥	Get context about your scene by displaying map or satellite data in the background of your scene in the 2D viewer.
	Point Cloud editing	🖥	Edit and optimize your point clouds for higher-quality meshes, DSMs, and orthomosaics. Disabled points are always stored in the "Disabled points" panel
	Clipping box	🖥	Isolate and focus on specific regions within your point cloud for more targeted analysis
	Videos & views	🖥	Create a video path to export a video of your dataset or create views to quickly access specific views of your projects
	Object selection tool	🖥	A smart object selection tool for point cloud classification
	Invert selection	🖥	Allows to invert the selected point clouds
	Color by elevation	🖥	Use a histogram and a selection of spectrums to interactively display your point clouds by elevation value
	Color by relative confidence	🖥	A color by relative confidence tool for advanced users to assess their data accuracy
EXPORT	Export GCPs	🖥	Export GCPs for enhanced workflow flexibility
	Export MTPs, mITPS, ITPs (.txt, .csv)	🖥	Export tie point marks
	Point cloud (.laz, .las 1.4, .las 1.2, .XYZ)	🖥	Export generated point clouds in .laz, .las (1.2 and 1.4 for better compatibility) and .xyz file formats
	Mesh (.obj, Cesium 3D tiles, .slpk)	🖥	Export a 3D textured mesh in .obj, Cesium 3D tiles (.b3dm, .json) and .slpk file format.
	Point cloud from Mesh (.laz)	🖥	Export a point cloud from your mesh for better modeling in Revit.
	Digital Surface Model (.tiff, .tfw, .prj)	🖥	Export generated digital surface model in a single .tiff or in tiles. Optionally with .tfw and .prj files. Select the compression rate of the file. LZW compression available.
	Orthomosaic (.tiff, .tfw, .prj, .jpg, .jgw)	🖥	Export generated orthomosaic in a single or tiled .tiff with optional .tfw and .prj files, or as .jpg with a .jgw file for geolocation. Select the compression rate of the file. LZW compression available.
	Quality report	🖥	Export the quality report to assess the accuracy and quality of projects.
	Direct export to PIX4Dsurvey	🖥	Seamless export of processed PIX4Dmatic projects (.p4m) into PIX4Dsurvey. Together with Pix4D's proprietary .bpc file format, this leads to optimized loading and manipulation of large point clouds in PIX4Dsurvey.
	Share to PIX4Dcloud	🖥	Upload results from PIX4Dmatic to PIX4Dcloud for sharing and collaboration.
	Open Photogrammetry Format (OPF) 1.0	🖥	Export a project in the Open Photogrammetry Format (OPF) 1.0 specifications.
LANGUAGE	Language option	🖥	English, Japanese, Spanish, French, Simplified Chinese, Traditional Chinese, Korean, German, Portuguese, Turkish
LICENSING OPTIONS	Organizational license support	🖥	If you are in a Pix4D organization, you can access those organizational licenses and see how many are available.
	SSO support	🖥	SSO-enrolled companies can use their defined SSO provider to log in.
	Offline license	🖥	Fully offline licensing available.

HARDWARE SPECS

CPU: Quad-core or hexa-core Intel i5

GPU: Any NVIDIA GPU that supports OpenGL 4.1 or higher

Disk Space: 150 GB Free Space (2000-5000 images at 20MP). 350 GB Free Space (5000-10000 images at 20MP)

OS: Windows 10, 11 (64 bit) or macOS Ventura and Monterey

RAM: 32GB (2000-5000 images at 20MP). 64GB (5000-10000 images at 20MP)

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