

# LiDAR360V8.0 Release notes

## V8.0- 28/9/2024

### 1. Preprocessing

- a. Add 3D Control Point Report:
  - i. Add automatically targets detection and control points matching.
  - ii. Add direct definition of transformation models in control point reports.
- b. Add DJI L1 / L2 Reconstruction, supporting UAV Processing workflow.
- c. Optimize Trajectory Adjustment, supporting massive point cloud and image combined adjustment, target detection from point cloud / image and matching control point to improve data precision.
- d. Optimize Data Registration:
  - i. Add Define UCS to change point cloud coordinate by local cartesian coordinates.
  - ii. Add support for importing control points as reference data option for point pairs registration.

### 2. Data Management

- a. Add Adjust Point Cloud Color.
- b. Add Unit Conversion, supporting all platform format.
- c. Add Convert ASCII to Vector / Convert Vector to ASCII.
- d. Add support for defining projection / reprojecting for raster, vector and ascii file.
- e. Add support for selecting target coordinate from layers.
- f. Add Convert LiTIN / LiModel to OBJ / OSGB.
- g. Add 3D affine parameters in Transformation Calculation.
- h. Optimize Normalization to mitigate object cracking caused by steep slope.
- i. Optimize Segment by Attribute, supporting using additional attributes for statistic.
- j. Optimize Convert to TIFF, supporting fixing holes.
- k. Optimize Raster Subdivision, supporting generating tile boundary line.
- l. Optimize Extract by Return, supporting 1~15 return number.

### 3. Classification

- a. Add support for road classification and outline extraction.
- b. Add support for classify roof and wall in Classify Buildings.
- c. Optimize Classify by Deep Learning, supporting new Scenes.
- d. Optimize Classify Ground Points, supporting Concurrency processing.
- e. Optimize Classify by Custom Deep Learning:
  - i. Add support for set trained model as a new function.
  - ii. Add support for image labeling, training and inferencing.
  - iii. Add Classify Tunnel by deep learning trained model.
  - iv. Optimize point cloud deep learning model.
- f. Optimize Classification Editor:
  - i. Add automatically saving setting.
  - ii. Add semi-auto classify by SAM.
  - iii. Add seed point selection for classify by select area operation.
  - iv. Optimize Simulate Ground Points tool, supporting random distribution.
  - v. Optimize memory usage.

### 4. Forestry

- a. Add Forests Stands Delineating.
- b. Add built-in tree model library for Generate Tree Model, supporting 70 Tree Species.
- c. Optimize Individual Tree Attributes Calculation:
  - i. Add support for trunk curvature calculation.

- ii. Add support for trunk section and trunk volume calculation.
- iii. Add support for forked DBH extraction and management.
- iv. Optimize tree height and DBH calculation.
- v. Optimize forestry setting option, supporting individual tree attributes setting.
- vi. Optimize forestry setting option, supporting individual tree attributes setting.
- d. Add Stand Analysis and report, supporting Thinning Analysis and Standing Tree Volume Analysis.
- e. Add View Azimuth and Distance.
- f. Add support for exporting individual tree attributes as table / vector file.
- g. Add support for point cloud display by tree attributes by treedb linked.
- h. Add CHM Pits Filling to fix holes in coniferous forests CHM.
- i. Optimize Individual Tree Report, adding tree number, area information, pano image and supporting pdf format.
- j. Optimize Regression Analysis, adding scatter plot result.
- k. Optimize Trunk Based Segmentation to improve result accuracy.
- l. Optimize Extract by Tree ID , supporting extract individual tree to LiData / Las format.

## **5. Terrain**

- a. Add REM.
- b. Add Flood Analysis.
- c. Add View Analysis.
- d. Add Sky View Factor.
- e. Add Annual Insolation.
- f. Add Solar Radiation.
- g. Optimize LiTIN / LiModel Editor, supporting undo and redo operation for each step.
- h. Optimize LiModel Editor, supporting adding various breaklines.
- i. Optimize Contour Editor, supporting topology checking and select area filtering.
- j. Optimize DOM, supporting color correction.
- k. Optimize generate contour functions, supporting more simplify and smooth methods.
- l. Optimize DEM, supporting add point cloud name to results in standard model, expanding scale to 1:5000.
- m. Optimize Section Analysis, supporting quality inspection and more analysis result.
- n. Optimize Generate Elevation Annotation, supporting diamond sampling.
- o. Optimize Change Detection, supporting missing data area annotating.

## **6. Mine**

- a. Add Extract Tunnel Centerline.
- b. Add various section analysis results for tunnel.

## **7. Building**

- a. Add support for attributes editor in Building Editor.
- b. Add support for building attributes calculation, extension, filtering and so on.
- c. Optimize building attributes calculation, supporting calculating rmse between point cloud and model.
- d. Optimize operation of Matched Photos Editor.
- e. Optimize LiBIM file rendering to reduce lag when handling laege data.

## **8. Photo**

- a. Add New Project, support for infrared and multispectral data.
- b. Add Align for aerial triangulation processing, support GPU acceleration.
- c. Add Filter Tie Points, supporting automatic / semi-atuo selection.
- d. Add DOM Editor.
- e. Add Ground Control Points, supporting control points picking and automatic detection.
- f. Add Camera Calibration.
- g. Add Undistort.
- h. Add Defogging.
- i. Add support for image project tie points rendering, supporting display by projection error and so on.
- j. Optimize Align to Point Cloud, supporting improve accuracy by camera calibration, control points picking and automatic detection.

## **9. Distributed Computing**

- a. Add various functions for distributed computing.
- b. Add support for large data and multiple data sets.
- c. Add support for dynamic configuration of compute node priorities.
- d. Add support for multi-instance computation, monitoring, and management of compute nodes.
- e. Add support for merging results.

## **10. Vector Editor**

- a. Add Extract Feature by SAM.
- b. Add Trace Toe Tool.
- c. Add Attach to Ground.
- d. Add Respace Geometry.
- e. Add Orthographic Draw Line.
- f. Add Round Corners.
- g. Add Trim Polyline.
- h. Add Convert to Polyline / Polygon.
- i. Add support for exporting label me format for image deep learning.
- j. Optimize and merge some tools.
- k. Optimize drawing curve tools, supporting set parameters to generate curve.
- l. Optimize vector layer management, supporting layers modify setting.
- m. Optimize Copy Parallel, supporting copy distance setting.
- n. Optimize vector setting, supporting symbology and snapping setting.
- o. Optimize vector editor operation, adding operation prompts.

## **11. Others**

- a. Add unit setting, supporting processing and generating result in different unit.
- b. Add Share Data in LiCloud, supporting viewing and sharing data online.
- c. Add measurement setting, supporting snapping different data type to improve measurement accuracy.
- d. Add Line Above / Below, Plane Above / Below / Inside Selection.
- e. Optimize Volume Measurement and report, supporting point cloud image, adding basic information and image setting.
- f. Optimize Profile View, supporting setting linked viewer setting.
- g. Optimize vector file display, supporting show or hide control by layer.
- h. Optimize project directory tree:
  - i. Add image project display control, supporting adjusting image size, exporting and so on.
  - ii. Optimize table / vector(shp / gpkg) / LiBIM attributes table management, supporting attributes calculation.
  - iii. Optimize table file display, supporting dynamic adjusting label size and so on.
- i. Optimize option setting, supporting cpu selection, unit settings, more forestry settings.
- j. Optimize Batch Processing, supporting more functions.