GreenValley International

LiDAR360MLS

Point Cloud Feature Intelligent Extraction and Analysis Software

V7.2.0-2024.4.25

- New Features:
  - Supported for LiGrip and LiBackpack data preprocessing
    - ◆ Improved the success rate of SLAM calculation.
    - ◆ Enhanced the efficiency of SLAM calculation.
    - ◆ Ensured consistency between the data collection end and the post-processing end.
    - ◆ Optimized point cloud colorization
  - Added Floor Plan Module
    - ◆ Added automatic vectorization function for floor plan.
    - ◆ Added DXF export function for floor plan vectors.
    - ◆ Added one-click export function for blue print.
    - ◆ Supported intersecting and perpendicular line drawing models.
    - ◆ Supported line intersection、line merging、line breaking and moving.
    - ◆ Supported vertices editing.
    - ◆ Supported length、area、angle measurement.
  - Facade Survey Module
    - ◆ Added point cloud polygonal section unrolling function.
    - ◆ Added point cloud curved section unrolling function.
    - ◆ Added point cloud curved section unrolling function.
  - Platform
    - ◆ Point Cloud Display
      - Added point cloud X-ray rendering.
      - Added point cloud surface enhancement rendering.

Map the World in 3D

- ◆ Added Blur Plates and Faces function for panoramic/planar images.
- ◆ Added EXIF update function for panoramic/planar images.
- ◆ Added brightness contrast export functionality for point clouds.
- ◆ Added pre-trained classification model for railway scenes.
- ◆ Added section move step adjustment settings.
- ◆ Support Traditional Chinese language pack.
- ■ Vector Editing
  - ◆ Added line intersection function
  - ◆ Added auto-close mode for right-click on line drawing function.
  - ◆ Added precision setting function for attribute field.
- ■ Urban Forestry Module
  - ◆ Added the function of extracting seed points globally.
- ● Enhancement：
  - ■ Platform
    - ◆ Fixed the problem of losing DXF layer styles when exporting.
    - ◆ Fixed the failure of exporting vectors from point layers imported via TXT.
  - ■ Element Extraction Module
    - ◆ Optimised the function of railway track detection, support category filtering
    - ◆ Optimised power line detection function, support category filtering
  - ■ Facade Survey Module
    - ◆ Fixed the problem of exporting DXF layer name anomaly.
  - ■ Road Analysis Module
    - ◆ Optimised the calculation results of road longitudinal section parameters
    - ◆ Optimised road damage detection
  - ■ Fixed other bugs

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V7.1.1-2024.3.1

- Optimized orthophoto density map export.
- Optimized the import shp from table, supported direct import into points, lines and surfaces, and supported coordinate conversion.
- Optimized track jump detection and repair function
- Fixed the issue of manually editing the label settings in the profiling module.
- Fixed AMD graphics card display issues.
- Fixed imagelist update problem
- Fixed track version reading problem
- Fixed node editing crash problem.
- Fixed other bugs in the software

V7.1.0-2023.12.21

- Added point cloud brightness contrast setting function
- Added screenshot position setting
- Added project organization functionality
- Added import point layers from tables
- Added image file update functionality.
- Added data transformation functionality.
- Added detection and correction for lateral jumps in trajectories
- Added railway detection feature.
- Added functionality to add XYZ to the attribute table.
- Added the ability to export point layers in CSV format.
- Added layer styling with support for styling based on attributes.
- Added functionality for individual tree orientation measurement.
- Added functionality for exporting individual tree reports.

Map the World in 3D

- Optimized volume measurement algorithm, supporting category filtering and calculation based on selected vectors.
- Fixed the issue of not being able to copy when exporting to DXF.
- Optimized software interface, distinguishing between Chinese and English prompts.
- Optimized feature reports, differentiating between Chinese and English reports.
- Fixed the issue of updating imagery data in aerial strip stitching
- Optimized control point correction function, supporting tie points on RGB information
- Optimized point cloud coloring algorithm.
- Optimized functionality for extracting linear features.
- Optimized operations for functions like line-to-point conversion, point-to-line conversion, and surface construction.
- Enhanced interactive operations for functions such as move, parallel copy, etc.
- Expanded the line-to-point conversion function to support converting all nodes of a line vector to a point layer.
- Optimized the algorithm and process for individual tree segmentation.
- Enhanced the functionality for creating thematic maps in ecological landscape analysis, now supporting the independent generation of thematic maps for multiple files.
- Fixed other bugs in the software

V7.0.0-2023.11.04

Software version upgraded to 7.X

➢ Platform
  - Added point cloud data format batch conversion

- Added configurable project templates
- Added export functionality for geojson data format
- Added orthophoto window, supporting display, measurement, and mapping of orthophotos.
- Added multi-window display modes for point cloud data based on different attributes.
- Added Addeditional attributes for trajectories.
- Added a tool for selecting within surfaces.
- Added volume measurement reporting.
- Added volume measurement functionality for two phases.
- Added point cloud reprocessing functionality.
- Added functionality for Addeditional operations on point cloud attributes.

➢ Added Point Cloud Tool Module Added SOR filtering.

- Added noise filtering.
- Added point cloud resampling functionality.
- Added point cloud merging functionality.
- Added functionality to normalize based on ground points.
- Added de-normalization functionality.
- Added point cloud normal calculation functionality.
- Added GPS time conversion functionality.
- Added projection definition functionality.
- Added coordinate transformation functionality.
- Added functionality to extract based on Addeditional attributes.

➢ Preprocessing

- Added colorization functionality for mobile laser scanning point clouds.

➢ Point Cloud Classification and Extraction

- Added classification pre-training models for indoor, outdoor, underground parking garagescene point cloud data obtained by SLAM device.
- Added custom deep learning classification functionality.

- Added plane detection

- Added cylinder detection

- Added classify by cover

- Added region growing functionality.

➢ Feature Extraction

- Supported automatic extraction of all types of road markings

- Supported merge to lane

- Added Pole Seed Point Transformation Functionality.

- Added Pole Seed Point Update Functionality.

- Added Pole Seed Point Editing Functionality.

- Added individual segmentation of cars and buildings functionality.

➢ Vector Editing

- Added image (panoramic, planar, orthophoto) based vector drawing and editing.

- Added radius circle and diameter circle drawing function.

- Added Bezier and B-spline curve drawing modes.

- Added tracking drawing mode.

- Added point-to-line conversion functionality.

- Added line-to-point conversion functionality.

- Added polygon-to-line conversion functionality.

- Added line-to-polygon conversion functionality.

- Added layer interrupt layer function

- Added construction surface function

- Added multi-part to single-part feature

- Added topological edge editing

- Added auxiliary line mode .

- Added field calculator.

- Added object photo database storage .

- Added attribute quality check tool.

- Added geometry quality check tool.

➢ Road Analysis

- Added custom clearance analysis.

- Added intersecting lines clearance analysis .

- Added bridge height limit analysis and analysis report.

- Added urban power distribution line analysis and analysis report .

- Added road damage detection.

- Added pavement condition index(PCI) calculation and report generation.

- Added longitudinal section analysis.

- Added model key point extraction.

- Added road TIN generation.

- Added vehicle collision simulation analysis .

➢ Added Urban Forestry Module

- Added seed point transformation functionality.

- Added seed point update functionality.

- Added seed point editing functionality.

- Added tree height and diameter calculation based on seed points functionality.

- Added measurement of urban tree parameters.

- Added point cloud extraction based on TreeID.

- Added measurement of parameters including DBH, Height, Crown Width, Crown Length, Crown Diameter, Crown Diameter SN, Crown Diameter EW ,CBH, Angle, Area, etc.

- Added ecological landscape thematic map , supporting green viewing ratio(GVR), green volume, sky view factor(SVF), etc

- Added generation of ecological landscape reports.

- Added ecological landscape simulation analysis functionality.

➢ Expanded orthophoto export based on intensity, height and RGB attributes

➢ Optimized image and vector linkage setting

➢ Fixed other bugs in the software

V2.0.5-2023.06.28

● Fixed other bugs in the software

V2.0.4-2023.03.17

● Optimized node editing function, Supported "Z value" and "move to" function for quick modification by picking Z

● Supported various vector selection tools to change the line direction, and Optimized shortcut keys and tips

● Supported Riegl MMS panoramic image file import and Optimized Orbit format

● Supported for South-North crown diameter (SN), East-West crown diameter (EW), crown length (CL) and crown width (CW) in the calculation of individual tree parameters

● Updated trajectory data

● Fixed the problem of Ligeo and LiFuser-BP project opening failure

● Fixed the problem of strip adjustment

● Fixed the problem of invalid horizontal section dragging

● Fixed other bugs in the software

V2.0.3-2023.02.08

● New 2D mode

- Optimized horizontal section function

- Optimized edit vertices function

- Optimized drape to ground function

- Optimized vector objects and the corresponding panoramic image window linkage jumping

- Fixed other bugs in the software

V2.0.2-2022.12.30

- Added new project from template

- Added import gpkg function

- Added road damage report export function

- Added clearance analysis report export function

- Added DXF and KML import and export functions

- Added dashed line batch drawing mode

- Added custom template drawing method for cross walk and parking spot

- Added line smoothing function

- Supported lane line and road edge detection with shortcut keys to switch between semiautomatic and manual modes

- Supported layer renaming

- Supported vector objects and the corresponding panoramic image window linkage jumping

- Fixed other bugs in the software

V2.0.1-12/30/2022

- Optimized the field selection limit when import trajectory

- Optimized the right click menu of the directory tree

- Optimized the interface of vector export function
- Optimized the emptying tips of the directory tree layers
- Fixed the problem of database storage

V2.0.0-2022.11.25

The software was renamed as LiDAR360 MLS

In order to develop the software into a general terrestrial mobile laser scanning（MLS）point cloud processing software platform, the software name was replace with LiDAR360MLS.

- ➢ New Construction
  - Supported drag and drop point cloud to create a new project, and save as to the specified path
  - Supported for importing original projects of LiFuser-BP and LiGeo
  - Supported point cloud and panoramic data entry software for more than 90% of mobile surveying devices on the market in formats such as Trimble MX9, Leica Pegasus, Orbit Pos, etc.
- ➢ Database
  - Supported database for vector storage
  - Supported Addeding, deleting, modifying and querying layers in the database
- ➢ Basic Platform
  - Added point cloud and vector projection conversion function
  - Supported point cloud format conversion
  - Supported basic tools such as point cloud selection and cropping
  - Supported vector data format conversion
  - Supported category display 0255 categories
  - Supported cross-sectional export of color orthophotos

- Supported for mobile measurement device travel direction arrows and default view settings

➢ Vector Editing

- The right-click menu has been added to the movement function, which Supported moving in a specified distance and direction

- Added arbitrary polygon, circle selection, ball selection, random selection, three-dimensional selection, and cylinder selection

- Added polygon combination and split functions

- Added one-to-many interrupt function

➢ Symbol library and labels

- Added feature symbolization function

  ■ Supported domestic standard road facility symbol library

  ■ Supported for common symbol libraries

  ■ Supported symbol number storage

  ■ Supported to set symbols for collected point features

  ■ Supported for modification of symbols

- Added annotation function

  ■ Supported for annotation layers

  ■ Supported for annotations to independent objects

  ■ Supported for annotations to object nodes and edges

  ■ Supported 3D, elevation annotation

  ■ Supported annotation style modification

- Added layer label function

  ■ Supported all layer properties for label display

  ■ Configurable styles for labels

  ■ Facilitate operations such as attribute entry

  ■ New vector line object direction display

➢ Road feature extraction module

- Added the template extraction function of strip features

- Added single segmentation function

- Added individual editing function

- Added single parameter extraction function

- Added AI-based road surface marking recognition function

- Added batch processing function for road surface marking recognition

- Added AI-based batch extraction of road facilities

➢ Point cloud classification

- Supported point cloud deep learning classification

- Supported polygon-based point cloud classification

- Supported point cloud classification based on vector lines

- Supported air noise classification

- Supported subsurface classification

- Supported above ground point classification

- Supported for separating lows

- Supported outlier classification

- Supported proximity point classification

- Supported ground point classification

- Supported classification by attribute

- Supported classify by cluster size

➢ Point cloud extraction

- Supported extraction by category

- Supported extraction by elevation

- Supported extraction by intensity

- Supported to extract by GPS time

- Supported extraction by echo times

➢ Planar camera browsing measurement

- Added planar camera data and point cloud overlay browsing display

- Added planar camera measurement

- Added planar camera calibration

- Added planar camera undistort

➢ Vehicle point cloud preprocessing

- Supported trajectory segmentation

- Supported laser boresight

- Supported track quality check and repair

- Added control point correction function

- Added strip adjust

➢ Road Analysis Module

- Added road damage detection function

- Added headroom analysis function

- Added visual field analysis function

- Added road section analysis function

- Added road cross section parameter extraction function

V1.2-2022.07.23

➢ Added Facade Measurement Module

- Supported vertical vertical

- Supported horizontal guide line drawing

- Supported range line drawing

- Supported taking a section based on a reference/extent line and making adjustments

- Supported the drawing of the basic elements of the facade

- Supported for construction line drawing

- Supported array drawing

- Supported translation and rotation

- Supported for exporting DXF and orthophotos

- Added shortcut key configuration function

- Added layer manager function

- Added combined display function

- Added cross drawing and vertical drawing functions

- Added capture module

➢ Optimization function

- Optimized the drawing method of rectangular traffic signs

V1.1-2022.03.10

➢ Added data block module

- Supported track segmentation

- Supported area block node editing

- Supported region block merging

- Supported point cloud segmentation based on block

- Supported area block selective display

- Supported display and hide of area blocks and their labels

➢ Added more road feature template symbol library

- Supported all types of arrow reticle drawing

- Supported for manhole covers, parking spaces, and drainage grate to be drawn according to templates

- Supported traffic signs to be drawn according to templates

- Supported Chinese and English character drawing

- Supported nonmotor vehicle signs, no Uturn signs are drawn according to the template

➢ Added template matching function

- Supported automatic vectorization matching based on default templates

- Supported custom feature templates and auto-vectorization or manual-vectorization

Map the World in 3D

- ➢ Added multi-type vector editing function
    - ● Supported for modifying the shape of line features
    - ● Supported tracing other vectors when drawing vectors
    - ● Supported point break line, line break line, line break surface
    - ● Supported vector stickers
- ➢ Added attribute table calculation and predefined functions
    - ● Added attribute batch filling function
    - ● Added line feature length calculation function
    - ● Added character replacement function
- ➢ Added node editing function
    - ● Supported for individually modifying node coordinate values
    - ● Supported batch modification of node Z value
- ➢ Added the function of modifying the project
- ➢ Added layer vector copy function
    - ● Supported copying of elements on the same layer
    - ● Supported vector geometry copy between different layers

V1.0-2021.09.10

First version release of LiStreet