An aerial LiDAR point cloud of a road intersection. The point cloud is rendered in grayscale. Overlaid on the point cloud are various colored lines and shapes representing feature extraction: yellow solid lines for road boundaries, green dashed lines for lane markings, red hatched areas for crosswalks, and blue arrows for traffic flow directions. The text "Terrestrial Point Cloud Feature Extraction and Analysis Software" is centered over the intersection.

*Terrestrial Point Cloud Feature
Extraction and Analysis Software*

www.lidar360.com

LIDAR360 MLS





SOFTWARE

TERRESTRIAL POINT CLOUD FEATURE EXTRACTION AND ANALYSIS SOFTWARE

LiDAR360 MLS iDAR360MLS is a terrestrial mobile laser scanning (MLS) point cloud feature extraction and analysis software independently developed by GreenValley International, which supports the processing and analysis of LiDAR point cloud and image data obtained by mainstream vehicle-mounted, backpack, or handled mobile mapping systems on the market.

Based on the leading artificial intelligence algorithm, the software performs massive point cloud data editing, 3D feature extraction and analysis, 3D vectorization of road elements, etc. It has the features of rich function, convenient operation, intelligent and efficient, friendly interaction, forming a complete processing chain of MLS point cloud data processing, high definition map and road asset survey.

The result data exported by the software can be directly imported into GIS, CAD, and simulation platforms, which can be widely used in high definition map production, facade survey, road asset survey and maintenance, etc. LiDAR360MLS accelerates information extraction with intelligence and depicts the real world with digitalization.

2022-11-04-14-45-23.LJMM - LiDAR360MLS

File Tools Preprocessing Classification Profile Cut Block Map Element Facility Vector Editor Facade Survey Appearance Road Analysis

Pick Point Pick Multi-Point Density Measurement Hover Search Radius: 30 pixels Use Hover Query

Plane Above Plane Below Plane Distance Settings In Out Save Cancel Cut Cross Section Trajectory Roaming Camera Roaming Import Shape Import Orthophoto Point Cloud Conversion Export Projection Export Vector

begin quick horizon section pos 0.00 buffer 0.00 rssi lead

Layers

- Base Data
- Vector
 - VirtualLaneCenterline
 - LaneLine
 - Stopline
 - RoadSideLine
 - Crosswalk
 - RoadMarking
 - UtilityPole
 - StreetLight
 - TrafficLight
 - TrafficSign
 - Spot
 - RoadSurface
 - CentralsolationLine
 - CentralsolationZone
 - TrafficLightPoint
 - SurveillanceCamera
 - TrafficSignPoint
 - GuideLine
 - ForbidLine
 - PlanerFacilities
 - Tree
 - Pole
 - Custom Vector
 - Tables

Layer Name: VirtualLaneCenterline Line Color: [Green]

Massive Data Loading and Processing

Multi-Source Data Fusion Mapping and Analysis

Independently Developed Underlying Engine

Efficient and Friendly 3D Interactive Editing

Leading Artificial Intelligence Algorithm

Integrated Management of Collection, Editing, Database Storage, etc.

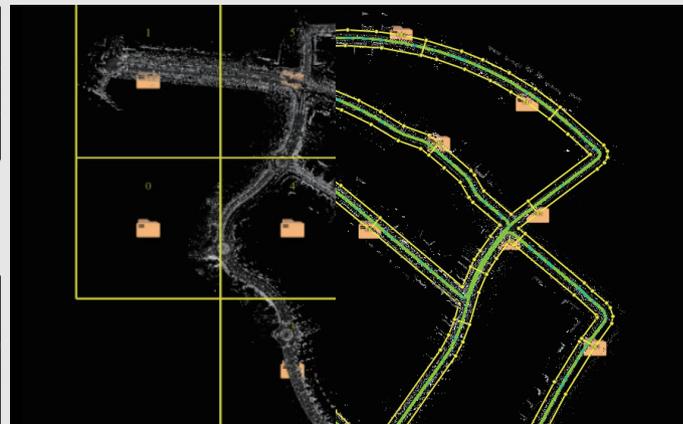
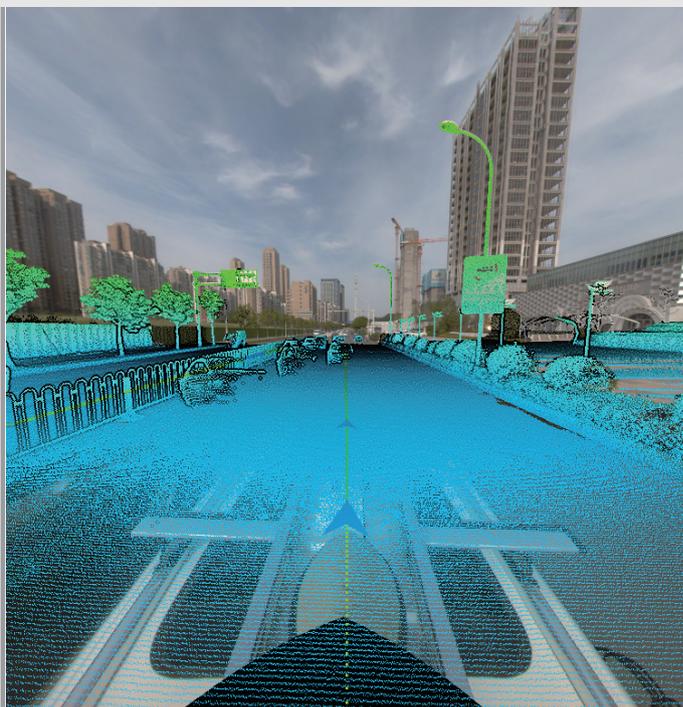
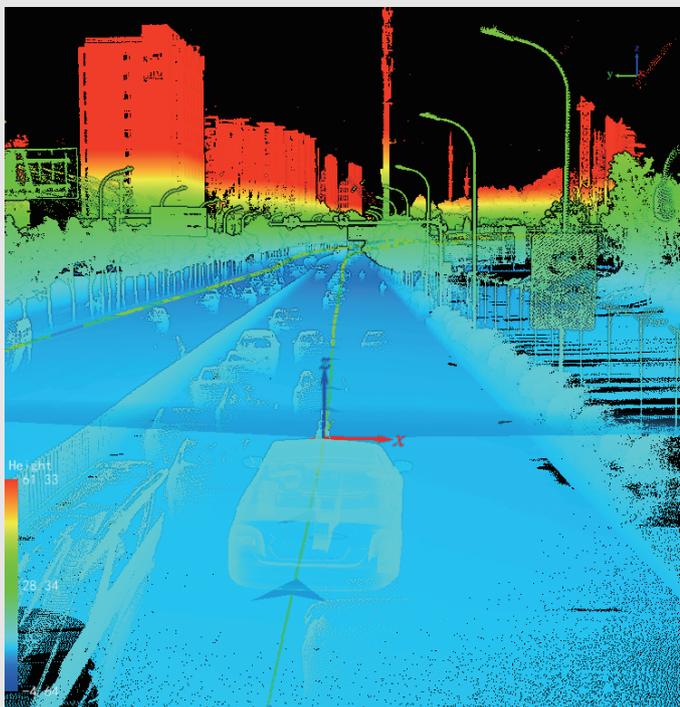
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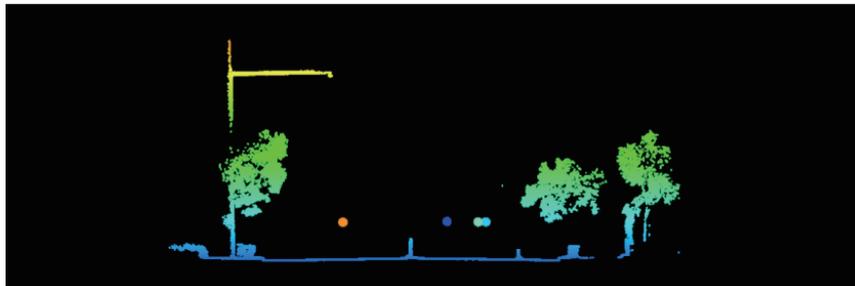
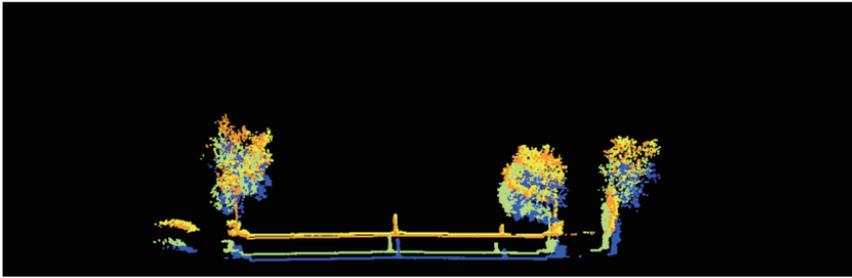
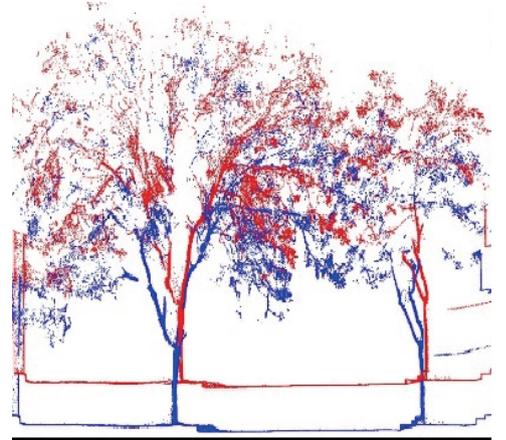
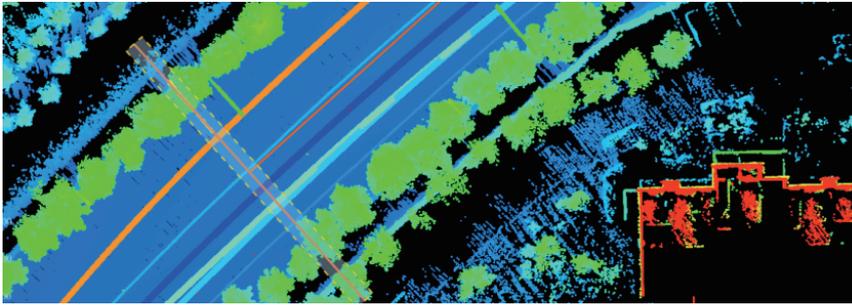
Foundation Platform

Foundation Platform

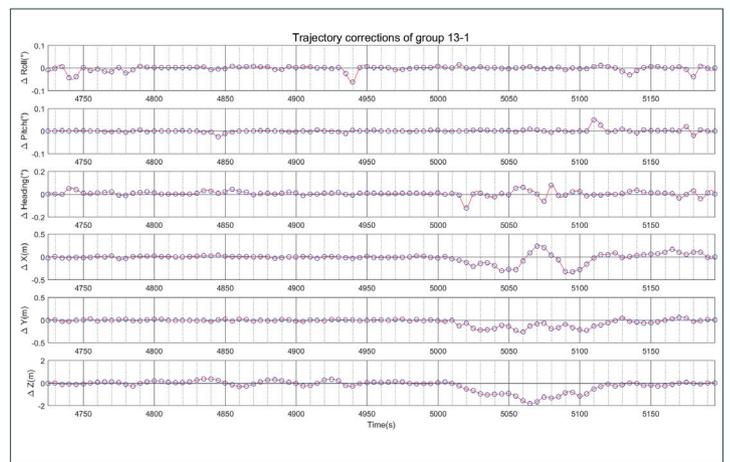
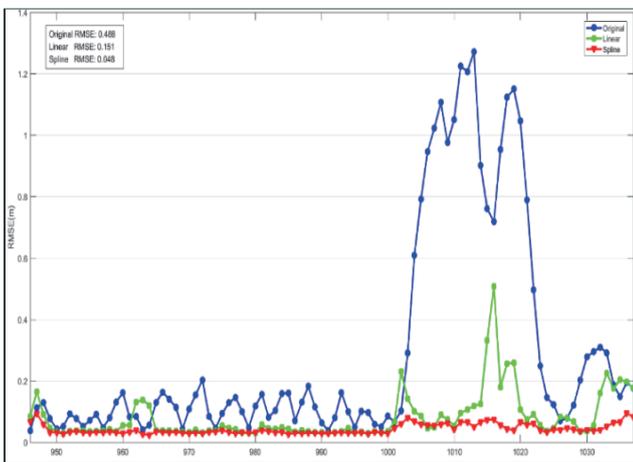
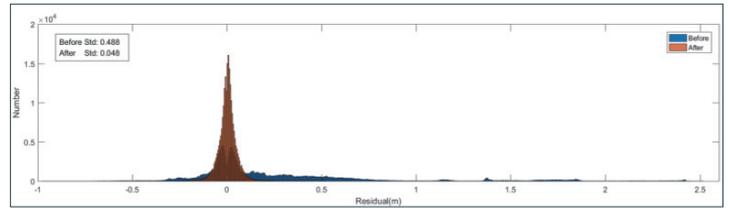
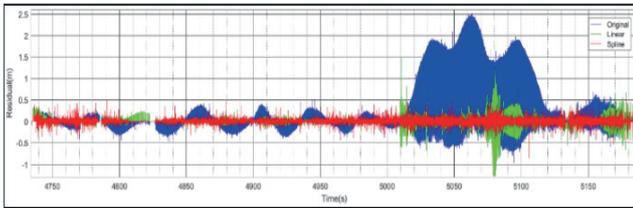
- Supports point cloud and panoramic data of mainstream mobile mapping systems on the market for processing and mapping.
- Support overlap display of multiple plane cameras, panoramic camera and point cloud data , measurement and boresight calibration ,assist data acquisition and editing.
- Combination display of multiple attributes, with additional attributes, to meet more application requirements.
- Rich point cloud snap tools, support automatic snap of feature points such as planes, ridges, and corners.
- Multiple block modes, work together to improve efficiency.
- AI-based point cloud semantic segmentation algorithm, which can quickly obtain high-precision results and accelerate the efficiency of subsequent production analysis.
- Support vector result database storage for convenient management and format conversion.



Mobile Laser Scanning Point Cloud Preprocessing



- Support point cloud boresight calibration, panoramic or plane camera extrinsic calibration, the mapping system does not need to be returned to the factory for calibration.
- Support point cloud and trajectory accuracy analysis, automatically identify and repair abnormal conditions such as trajectory jumps.
- Support relative alignment of MLS point cloud data, global optimization of multiple projects with control points, and output detailed accuracy reports to provide high-precision data support for subsequent applications.



Map Element

Feature Extraction

- Automatic extraction of road elements and road facilities based on AI, which greatly improves efficiency and can quickly expand categories.
- Customizable road element symbol library, the drawing effect is 100% fit.
- Support the drawing of special symbols such as Chinese characters and letters, and enrich the achievement database.
- Interactive semi-automatic multi-element detection, improvement of mapping efficiency.
- Rich road element templates, one-click drag and drop.
- Support linear facility template customization to achieve batch extraction of line elements.
- Support individual segmentation and parameter extraction of road facilities such as trees and poles.

Road Shape

Add Virtual Lane Centerline
 Add Lane Solidline
 Add Stopline
 Add Road Side Line
 Generate Virtual Lane Centerline

Generate Virtual Lane Centerline
 Detect Lane
 Detect Road

Arrow

Add Straight
 Add Left
 Add Right
 Add Left / Right
 Add Straight / Left
 Add Straight / Right
 Add Turn Round
 Add Straight / Turn Round
 Add Left / Turn Round
 Add Left Merge
 Add Right Merge
 Add Right / Turn Round
 Add Straight / Right / Turn
 Add Left / Right / Turn Round

Horizontal Marking

Add Cross Walk
 Add Longitudinal

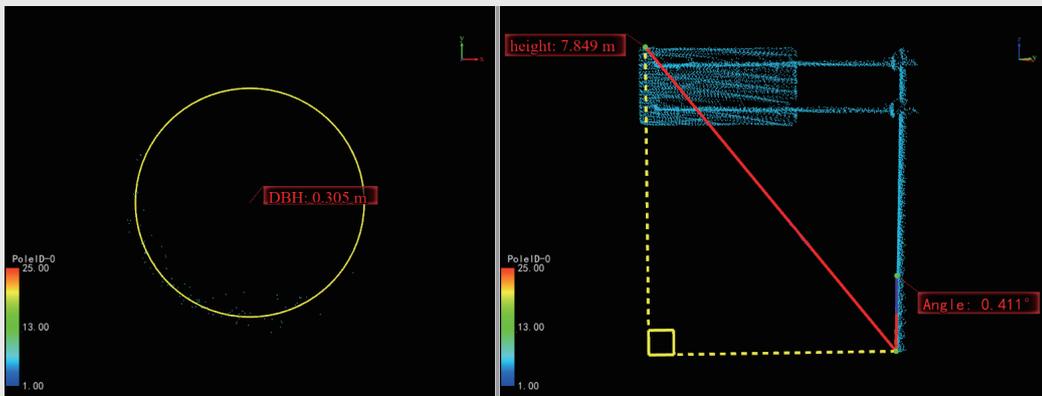
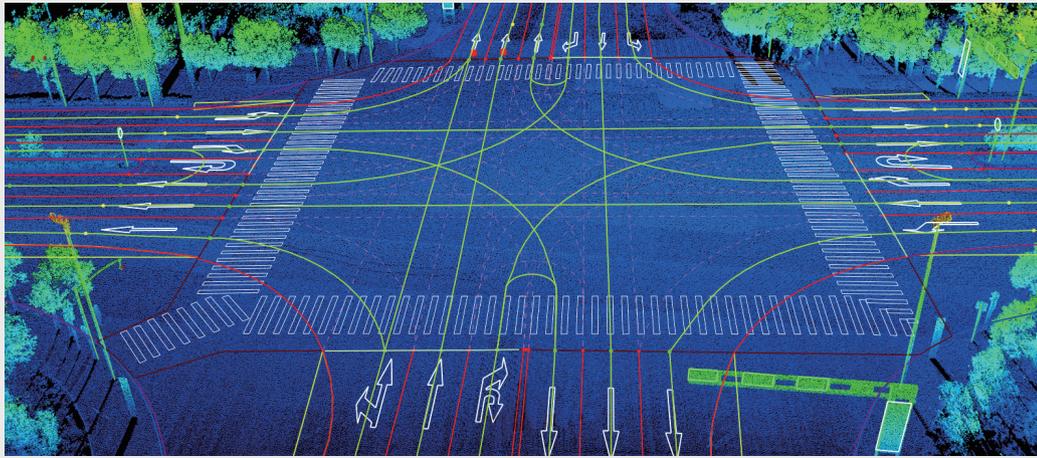
Pavement Graphic Marking

Add Cross Walk Warning
 Add Speed Reduction
 Add No-Parking
 Add Bicycle Lane
 Add No U-Turn

Add Font

Facility

Detect Pole Struct
 Detect PowerLine
 Add TrafficSign
 Add Parking Spot
 Add Rain / Strainer
 Add Manhole



Feature Objects Table

Type: Calculation

Object ID	DBH(m)	Height(m)	Angle(°)	CrownWidth(m)
6	0.305	7.849	0.411	0.000
7	0.614	1.603	60.636	0.000

Vector Editor *Vecotor Edito*

- Rich vector editing tools, convenient operation, improve the accuracy and reliability of vectors.
- Support shortcut keys customization to improve the operability of production staff
- Support mapping in multi-view (3D, 2D, section).
- Support precise editing of different snap modes.
- Support attribute table template configuration.
- Built-in national standard road asset symbol library and general symbol library.
- Support point cloud, feature, vertex/edge multi-level data to add annotation.

Straight/Right

Minkang Street

Gaoyuan Road



Drawing

Add Point Add Multi-point Add Line Add Line Segment Add Arc Add Polygon Add Rect Add Parallelogram Add Circle Add Hexagon Add Octagon

Auxiliary

Grip To Ground Add Trace Line Add Trace Polygon Draw By Intersection Draw By Perpendicular

Interrupt

Point Split Line Line Split Line Line Split Polygon Line Split Objects

Node Editor

Edit Vector Node Insert Vector Node Remove Vector Node Node Edit

Alignment

Move Parallel Copy Rotate Scale Polygon Mirror

Reshape

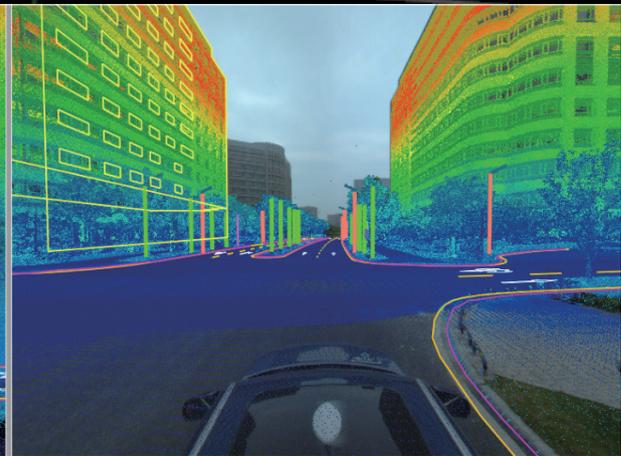
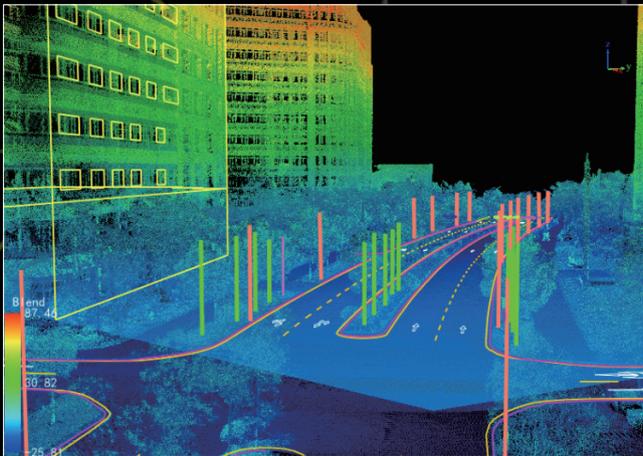
ReShape Line ReShape Rect Merge Lines Break Line Split Line Extend or Trim

Splitte And Merge Polygon Hook Lines Extend Lines Fillet Split Multipolygon Combine Polygons Points

Select

Pick RectanglePick Polygon Lasso Circle LinePick

Box Sphere Cylinder



HeadMarking

Add Field	Delete Field	Start Edit	Export CSV
FID	Shape	ID	
1	1 Polygon ZM	98	
2	2 Polygon ZM	99	
3	3 Polygon ZM	100	
4	4 Polygon ZM	101	

Manhole RoadMarking Stopline

TrafficSign

Add Field	Delete Field	Start Edit	Export CSV
FID	Shape	ID	
1	1 Polygon ZM	133	
2	2 Polygon ZM	134	
3	3 Polygon ZM	135	
4	4 Polygon ZM	136	

TrafficSign Tree

UtilityPole

Add Field	Delete Field	Start Edit	Export CSV
FID	Shape	ID	
1	1 Polyline ZM	80	
2	2 Polyline ZM	81	
3	3 Polyline ZM	82	
4	4 Polyline ZM	83	

UtilityPole RainStrainer

StreetLight

Add Field	Delete Field	Start Edit
FID	Shape	ID
1	1 Polyline ZM	89
2	2 Polyline ZM	90
3	3 Polyline ZM	91
4	4 Polyline ZM	92

StreetLight ParkingSpot

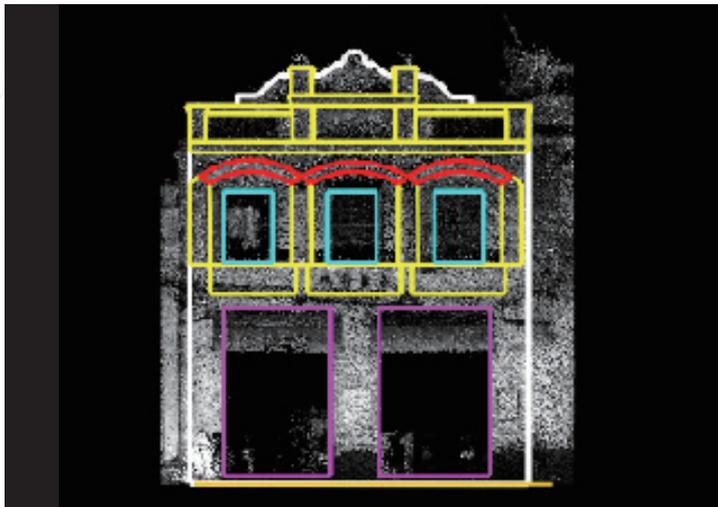
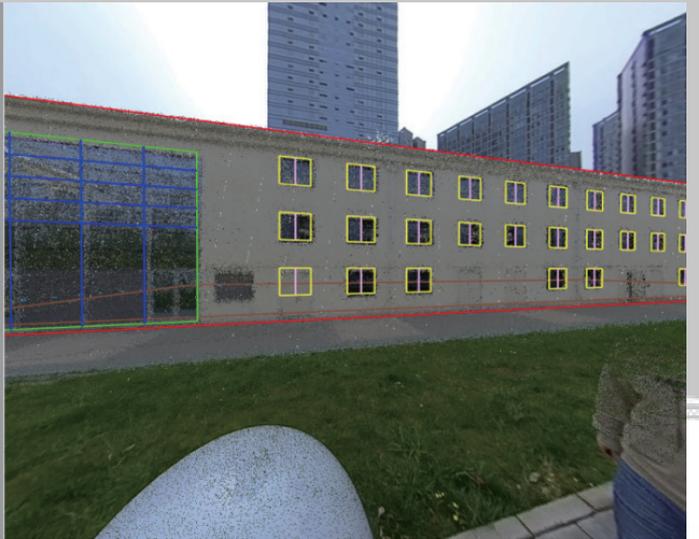
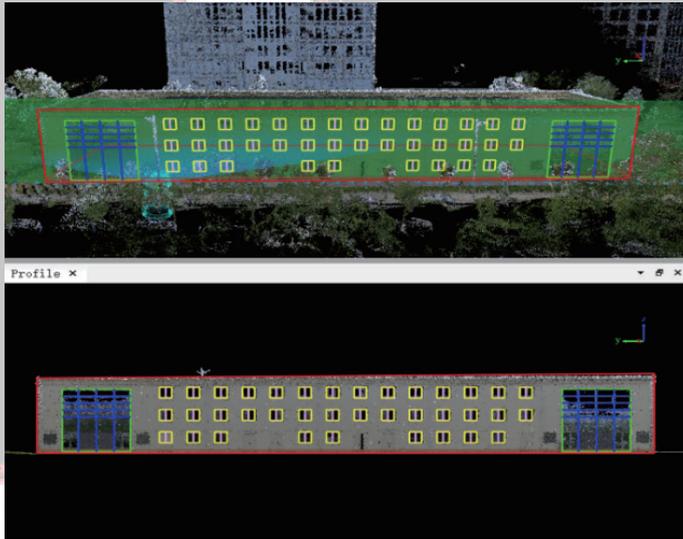
Minkang Street



Facade Survey

Facade Survey

- Seamlessly import LiGrip/LiBackpack/LiMobile point cloud and image data without format conversion and coordinate system definition.
- Provide multi-mode baseline collection method, adapt to multiple types of façade structures, and accurately locate side façade information.
- Provide facade verticalization function to solve the problem of SLAM data ground inclination.
- Provide convenient facade element drawing tools such as construction lines and grouping arrays to speed up production efficiency.
- Using panoramic images to assist facade survey, making the drawing of elements more complete and accurate.
- Provide accurate length and area calculation functions, and support exporting tables in other formats.
- Support exporting DXF, orthophoto result data, etc.



Road Analysis

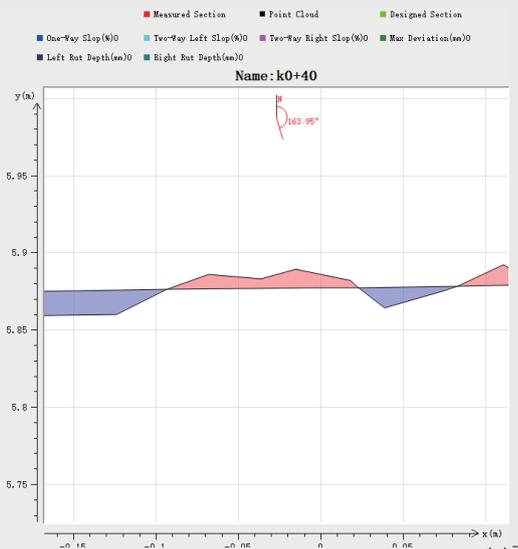
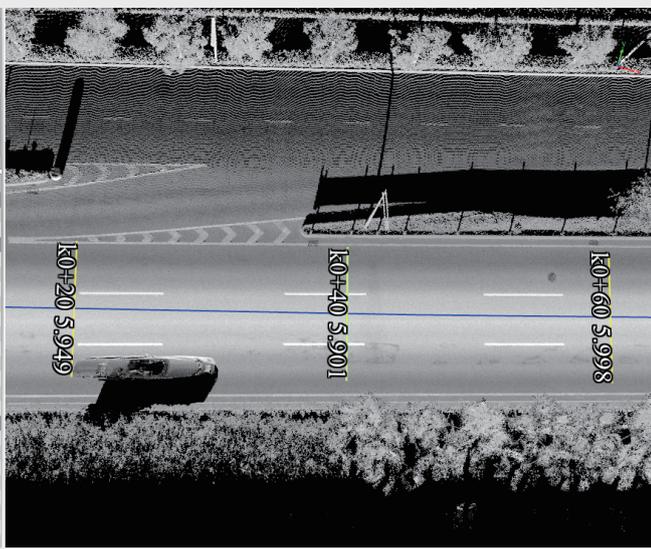
Road Analysis

- Extract road surface damage information based on high-precision MLS point cloud data to assist road maintenance inspection.
- Support 3D space analysis methods such as clearance analysis and viewshed analysis.
- Support road section analysis, compare and analyze multi-phase data and generate standard comparison reports.
- Support the calculation of various road section parameters to assist in the analysis of road construction and other operations.



Name	Real Mileage
CentralAxis0	-1
k0+0	0
k0+20	20
k0+40	40
k0+60	60
k0+80	80
k0+100	100
k0+120	120
k0+140	140
k0+160	160

Attribute	Value
Section Base Info	
Section Name	k0+40
Mileage(m)	k0+40
Measured Section	
Width(m)	9.999
Height(m)	0.159
Central Pile Height...	5.887
Len(m)	10.033
Cut/Fill	<input checked="" type="checkbox"/> Visible
Cut Area(m²)	0.038
Fill Area(m²)	0.002
Fill-Cut Area(m²)	0.036
Cut Volume(Cubic ...)	1.533
Fill Volume(Cubic ...)	0.099
Fill-Cut Volume(Cu...	1.434
RoadSectionInfo	
One-Way Slop(%)	1.639
Two-Way Left Slop...	1.840
Two-Way Right SL...	1.439
Cross Section row...	9.122
Max Deviation(mm)	23.357
Left Rut Depth(mm)	11.332
Right Rut Depth(m...	11.583
Rut Depth Index	76.834





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