

# Terrasolid applications for point cloud processing



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Automatically vectorized and textured 3D city model of Nagoya.  
Data: Nakanihon Air Service

## The reliable software to process LiDAR and Photogrammetric sourced point clouds

A point cloud is defined as a collection of data points defined by a given coordinates system, used for depicting landscapes with high precision. With Terrasolid software you can process both LiDAR and photogrammetric point clouds, and LiDAR images, in one integrated environment, faster, more efficiently and accurately than ever before.

### Airborne LiDAR Solutions

Terrasolid software includes unrivaled capabilities for matching of the multiple passes, data calibration, point classification and true ortho production without data conversion and with the ability to return to earlier phases should you find something which needs to be fixed. The software takes full advantage of the trajectory data and enables you reach maximum accuracy.

### Mobile LiDAR Solutions

A mobile LiDAR scanner mounted on a vehicle or an airborne scanner operated in a helicopter can provide a dense point cloud depicting e.g. roads, their surroundings and the road surface very accurately. Using photographs taken at the same time and control points measured with GPS improves the accuracy values in areas with poorer reception as urban and forested landscapes.

Terrasolid software includes specific toolsets dedicated to mobile mapping applications, so we provide with an answer to every challenge. Mobile surveying was never this easy and safe.

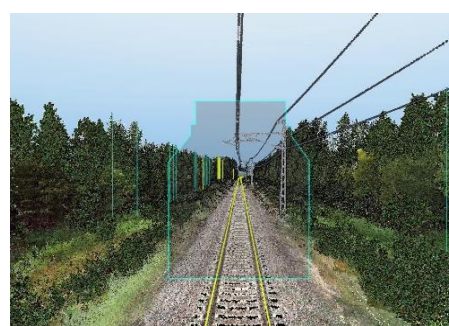
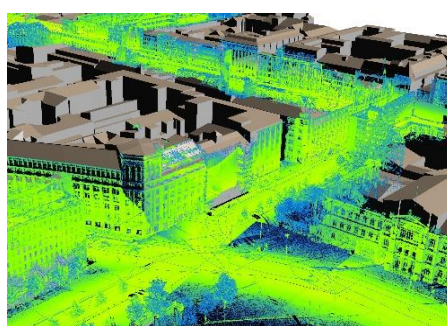
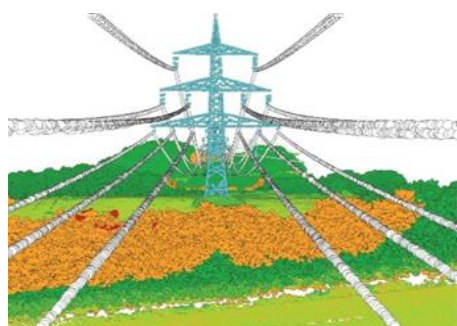
### UAV LiDAR Solutions

All the advantages of LiDAR in an even

faster more cost-effective way to survey. UAV LiDARs produce rich datasets under difficult conditions, enabling a quick, systematic monitoring of small areas and corridor sites. Similar in format and nature, TerraScan reads in UAV data efficiently and performs processing operations with the highest levels of automation in the market. Whether used alone or in combination with other sensors, Terrasolid software is your best choice to process UAV LiDAR data.

### Photogrammetric Solutions

Photogrammetric point clouds differ in characteristics from LiDAR sourced ones. TerraScan will successfully process such point clouds following dedicated macro steps. Once classified additional applications in TerraScan and TerraModeler can be normally applied.





## Turn Your Point Clouds in Endless Deliverables

### TERRASCAN

is a versatile software package for processing raw point cloud data. You can view, manipulate and classify the points into classes like ground, vegetation and buildings. There are many different feature extraction and vectorization tools.

### TERRAPHOTO **Exclusive for LiDAR**

produces orthorectified images from images. It is specifically developed to process images, which are taken during a laser-scanning mission. TerraPhoto uses TIN of ground laser points for an accurate projection model. The orthorectification process is simultaneously done with the point cloud processing.

### TERRAMATCH **Exclusive for LiDAR**

is a sophisticated application for calibrating and matching LiDAR data. TerraMatch uses trajectory data and compares overlapping laser strips with each other and corrects orientation parameters to obtain the best fit and improved accuracy. The user can decide whether TerraMatch matches all the data points or only points from selected flight lines.

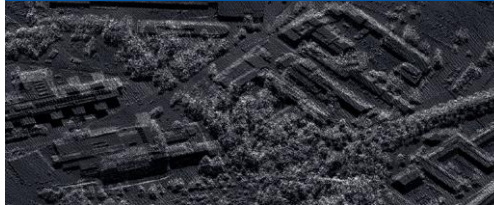
### TERRAMODELER

is a full featured terrain modeling application. It creates surface models (TIN) of ground, soil layers or design elements by reading in laser points, graphical design elements or XYZ text files. There are versatile functions to edit TINs and display them as contours, colored nets, profiles as well as calculate volumes between TINs.

### TERRASTEREO for CAD

is an application running on Bentley's® MicroStation®. TerraStereo for CAD can be used for visualizing very large point clouds together with the CAD models. It uses high-performance graphics boards and Schneider Digital PluraView passive 3D stereo monitor for rendering huge amounts of points quickly and in high quality. TerraStereo for CAD gives engineers and architects a new way of making design decisions.

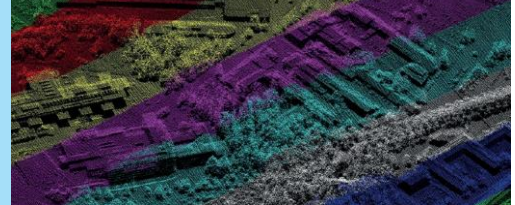
### TerraScan Import



Import pre-processed laser points and trajectories with TerraScan. Filter low points, stops and other error points. Deduce line numbers to points.

Calibrate scanner and camera orientations and find mismatch angles with TerraMatch. Match multiple flight/drive passes and automatically find tie lines. Cut the overlap. Tie the point clouds to ground reference points.

### TerraMatch Calibrate & Match



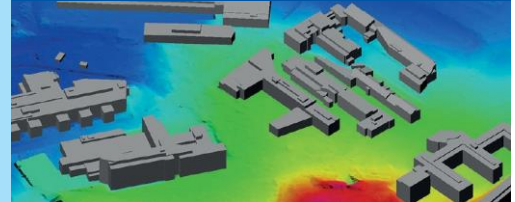
### TerraScan Classify



User rules and macros to classify ground, vegetation layers, buildings etc. with TerraScan. Check ground classification with the help of TerraModeler and TerraPhoto using images.

You can produce different deliverables from the classified point cloud. For example DTM, automatically vectorized 3D building models, vectorize rail geometry, powerlines, overhanging wires etc.

### TerraScan Produce deliverables



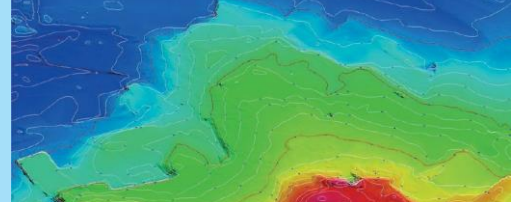
### TerraPhoto Create true ortho



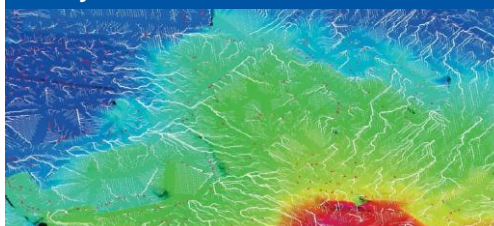
With TerraPhoto you can create a true ortho mosaic from the raw images. You can also automatically texturize building walls using oblique images and colorize both airborne and mobile point clouds using images.

Automatically produce contours with full user definable parameters.

### TerraModeler Produce contours



### Analysis



You can do a number of different analysis using point clouds. On the DTM you can do drainage analysis, on mobile point clouds you can automatically create road slope arrows and display different sight distances such as overtaking minimum visibility or braking minimum visibility.