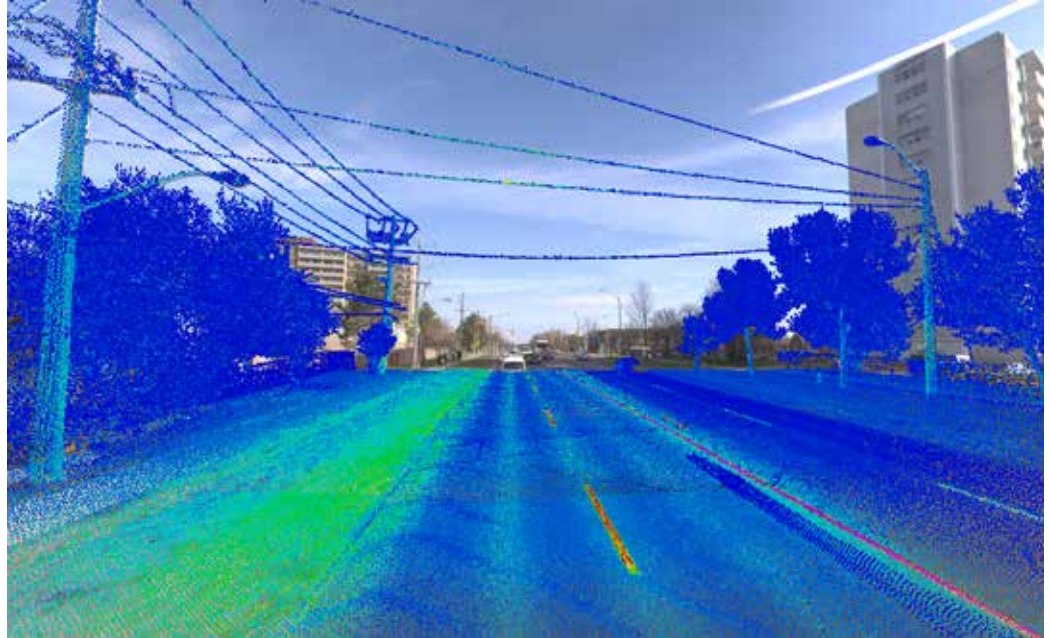


## Lidar Mapping Suite - Professional

### Key Features

- Integrated processing for lidar/camera sensors
- Quality assurance processes for optimal accuracy
- Quality control tools for efficient and robust project validation
- Designed for commercial production processing



Optech LMS integrates both lidar and image sensor processing methods into a single workflow platform, enabling comprehensive sensor calibration and accuracy quantification

### Lowering the Cost of Survey-Grade Mobile Data in Difficult Environments

The processing and output of accurate point cloud/imagery data can be the most expensive component of a mobile lidar survey. Efficiency is crucial to overall project success when generating verifiably accurate data suitable for detailed information extraction, especially in projects with stringent accuracy requirements and often volatile GNSS conditions.

Optech LMS is a comprehensive data processing platform for calibration, boresight and accuracy quantification of mobile data. Designed to serve as a single central processing hub of raw lidar and image data, LMS employs powerful least-squares algorithms with batch processing methods and the latest in distributed and multi-threaded processing routines to automate sensor calibration, compute project-wide accuracies, and maximize data throughput. Embedded data quality assurance and control tools enable you to comprehensively optimize and validate the accuracy of your data—without the need for external toolsets.

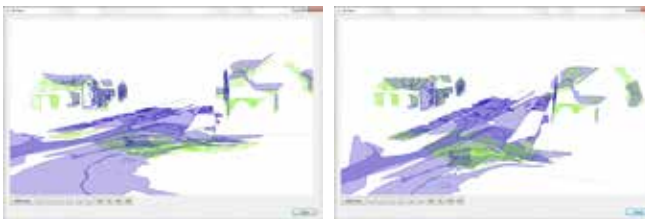


## LMS for Quality Control

LMS makes project validation easy with integrated quality control tools to verify the absolute and relative accuracy of the data. You can verify these accuracies with a number of reporting capabilities, including reports, plots, graphs and visual analysis tools.

### Lidar Data Relative Accuracy Assessment

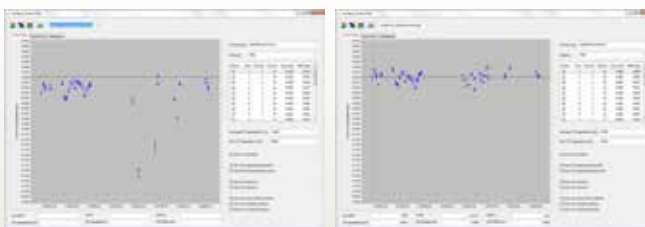
- Detailed reports/plots enable thorough quantitative analysis
- Qualitative analysis tools let you visually inspect compatibility of overlapping lidar data



Visual inspection of compatibility between overlapping lidar data before (left) and after (right) self-calibration

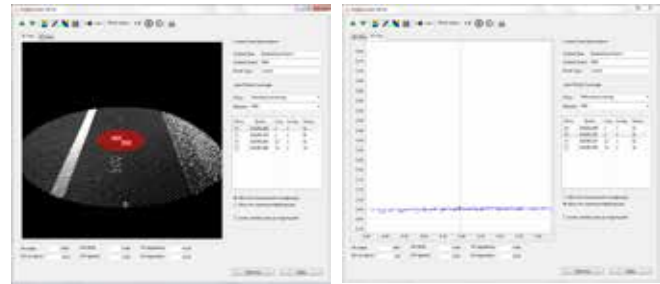
### Lidar Data Absolute Accuracy Assessment

- Charts/reports enable overall project assessment and comparison to ground control before and after self-calibration, either over time, over point, or as a histogram



Control site analysis over time before (left) and after (right) self-calibration

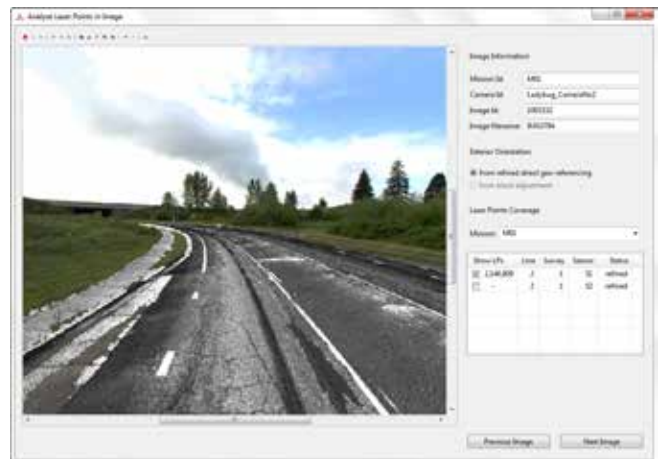
- 3D and 1D views assess the separation between individual control points and the lidar data before and after self-calibration



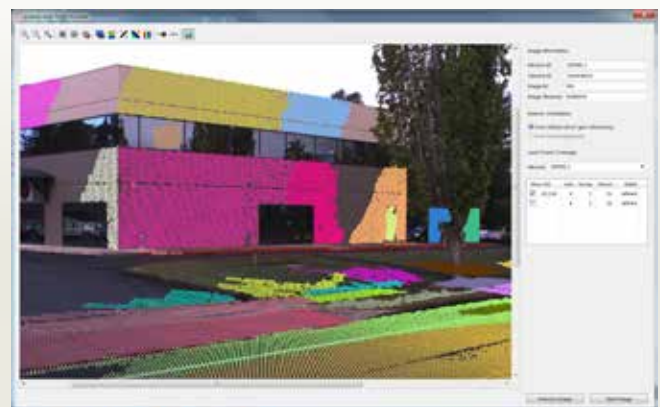
Assessment of individual control points through 1D (left) and 3D (right) views

### Quality Control of Multi-Sensor Data Integration

Visual inspection tools enable you to check the alignment between lidar and imagery datasets.



Extracted lidar planar patches projected to the imagery (colored by intensity) for visual inspection of the co-registration between the two datasets.



Extracted lidar planar patches projected to the imagery for visual inspection of the co-registration between the two datasets.

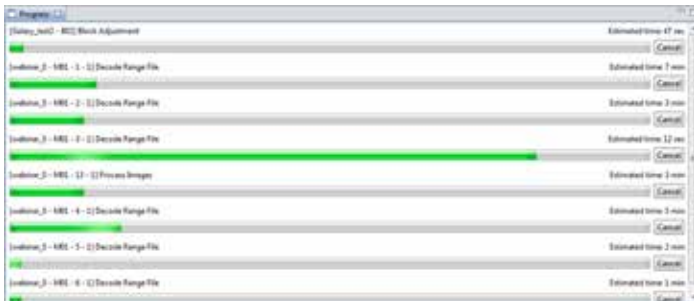
## LMS for Productivity

Processing productivity and efficiency are critical to reducing project costs and completing project deliverables on time. LMS incorporates many standard processes for maximizing processing productivity.

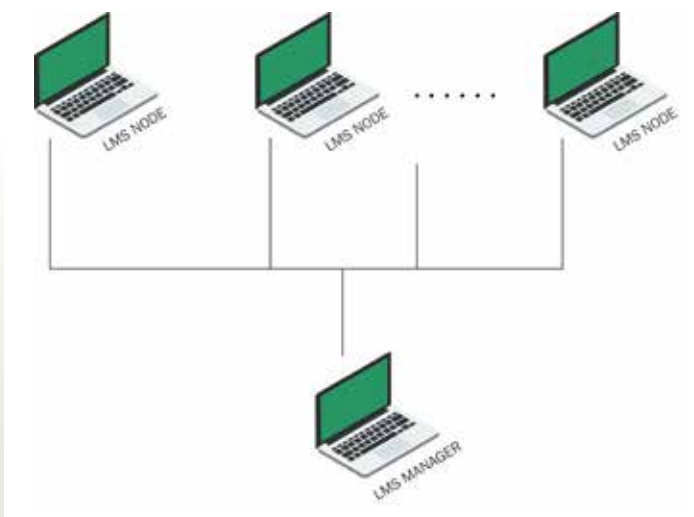
### Batch/Multithread Processing

Key production utilities help process large projects cost-effectively by minimizing the user interaction required:

- Batch processing for large, multi-site projects
- Parallel and distributed processing for minimizing processing time
- Cloud processing compatibility



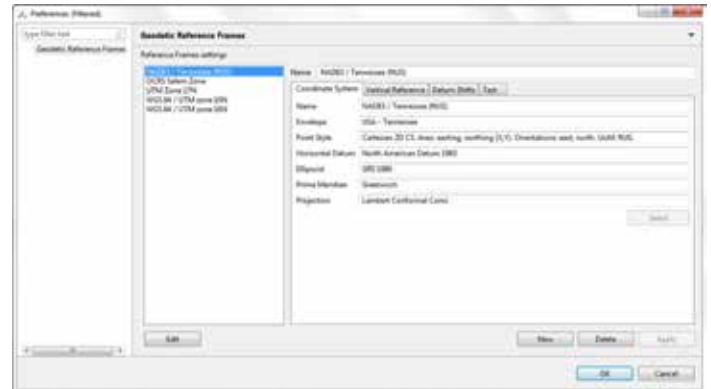
Batch processing



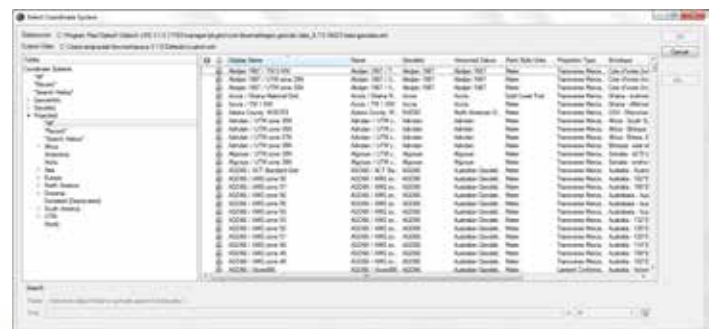
Distributed processing

## On-the-Fly Coordinate Transformation

The Blue Marble GeoCalc SDK is fully integrated in LMS, letting the user output their lidar data and imagery in the desired output reference frame. The user has access to an extensive database of geodetic conversions and geoid models that are updated regularly.



Easy selection of the appropriate reference frame (i.e., coordinate system, vertical reference and datum shift)



Extensive database of geodetic conversions and geoid models

## Integration with 3rd-Party Workflows

The primary objective of LMS is to produce the most accurate lidar point clouds and imagery data possible with quantifiable accuracy measurements, enabling direct ingestion into value-added 3<sup>rd</sup>-party software. For users interested in making the transition to user-defined post-processing workflows even more seamless, LMS includes the ability to launch 3<sup>rd</sup>-party executables via a user-specified command file (CMD or BAT). Similarly, LMS outputs to several standard industry formats, including LAS (1.1-1.4) and LAZ.