

LiDAR Data Processing

Transforming Data into Decisions

LiDAR & advanced remote sensing techniques capture highly precise spatial data to develop accurate 3D digital twins. It helps with faster extraction of precise measurement data penetrating through vegetation even in low light areas. This enables enhanced analysis, better planning, and optimized management, leading to significant cost savings and improved operational efficiency.

We are leveraging latest technologies like AI, deep learning, cloud computing, and automation to enable faster, more accurate, and large-scale analysis of LiDAR data. These technologies automate point classification and feature extraction, improve 3D modelling and visualization, support real-time and high-resolution mapping, and efficiently handle massive datasets.

What you can solve?

Capturing high resolution 3D information

Handling large data volumes

Create accurate terrain models

Integrating with other data sources

Enabling quantitative analysis

Separating Ground from Non-Ground objects

Feature extraction from unstructured point cloud

Aligning & merging multiple scans

Supporting autonomous navigation

Our Specialized Services for Electric Utility Distribution, Transmission and Rail Networks



Transmission & Distribution Corridors

Wildfire zone analysis and vegetation clearance analytics



Rail Network Corridors

Track measurements and infrastructure analytics utilizing LiDAR point cloud data processing



Asset Classification

Automated extraction from point cloud data, enabling efficient identification and cataloging of infrastructure assets

LiDAR Data Processing Applications



Asset Inventory & Data Validation

Capture precise asset dimensions and locations to validate and update GIS and asset records.



Vegetation Management

Use LiDAR to identify encroachments, model tree growth, and prioritize trimming based on trees.



Pole Loading & Structural Analysis

Perform clearance checks and structural assessments to ensure poles and conductors meet safety and engineering standards.



Engineering & Design Support

Use LiDAR data to improve accuracy in routing, make-ready work, and new construction designs.



Digital Twin & Grid Modernization

Build accurate 3D digital twins to enable simulation, scenario planning, and advanced analytics.

Benefits



Superior Asset Accuracy & Data Quality

High-precision 3D measurements dramatically improve the accuracy of GIS, asset inventories, and engineering datasets.



Safer, Faster, and More Efficient Field Operations

Large territories are captured quickly with far fewer field hours, reducing crew exposure to hazardous or energized environments.



Optimized Vegetation & Risk Management

LiDAR reveals encroachments and vegetation risks early, supporting targeted trimming, wildfire mitigation, and outage prevention.



Higher-Quality Engineering & Design

Detailed 3D data enhances clearance checks, sag modelling, pole loading, and make-ready engineering, reducing rework and delays.



Stronger Compliance & Inspection Assurance

Measurement-based evidence supports vegetation, clearance, and safety compliance—helping avoid audit findings and penalties.



Improved Grid Reliability & Modernization

LiDAR supports predictive maintenance, digital twins, and grid-hardening efforts, strengthening overall system reliability and resilience.

Technology-Driven Wildfire Mitigation for Utilities

Techwave helps electric utilities reduce wildfire risk through advanced geospatial and analytics technologies. In partnership with a leading IT services and consulting firm, Techwave applied **LiDAR**, 3D spatial analysis, and intelligent data classification to assess overhead assets across wildfire-prone service territories. By converting high-resolution laser scan data into actionable insights, Techwave enabled accurate vegetation encroachment measurement, identification of asset defects, and risk-based prioritization—supporting proactive mitigation planning, regulatory compliance, and safer, more resilient electric networks.

Why partner with Techwave?

Partnering with Techwave offers significant benefits by providing **cost-effective back-office data processing with quick turnaround times**. Our capabilities support **large-scale processing**, ensuring that even the most extensive datasets are handled efficiently and accurately. **We provide specialized processing of remotely acquired LiDAR field data, integrating industry expertise and scalable technologies to deliver high-quality, actionable insights while driving operational efficiency.** This partnership enables organizations to leverage advanced data processing without the need for heavy infrastructure investment, driving both speed and scalability.