ForestSAT 2026

Association for Forest Spatial Analysis Technologies

May 4-8, 2026 | Gainesville, Florida, USA

Workshop Title: Automating Forest Plotting with RIEGL VZ-600i:

Static & Kinematic LiDAR for Efficient Forestry Applications.

Instructors / Affiliation:

Bao Ha, LiDAR Sales Engineer – RIEGL Canada

Description:

This workshop explores the comparative use of static and kinematic terrestrial laser scanning (TLS) workflows in forestry environments. Participants will gain a comprehensive understanding of RIEGL's TLS portfolio, the fundamental differences between static and kinematic data acquisition, and the workflow implications in forestry plot-level statistics.

Through hands-on exercises using RIEGL's RiSCANPRO software and the Tree Analyzer plugin, participants will process real-world TLS datasets to generate plot-level forest metrics such as tree height, diameter, and density. The session will also discuss data quality evaluation, performance metrics across different terrain types, forest structures, and seasonal conditions, and how to statistically assess differences between acquisition modes.

The goal is to provide participants with the technical and analytical foundation to optimize LiDAR data collection for forest inventory, research, and management applications.

Learning Objectives:

At the end of the workshop, participants will be able to:

1. Understand the operational principles and differences between static and kinematic TLS.
2. Learn the end-to-end workflow for data acquisition, registration, and analysis using RiSCAN PRO.
3. Apply Tree Analyzer to derive plot-level forestry statistics and export data to CSV.
4. Evaluate and compare performance metrics (accuracy, completeness, and efficiency) between static and kinematic workflows.
5. Develop strategies for optimizing data collection time while maintaining required accuracy.

6. Recognize how terrain features, forest heterogeneity, and seasonality impact scanning results.
7. Understand in what forestry applications, which workflow should be used.

Target Audience:

- Forestry researchers
- Surveyors and remote sensing professionals
- Geomatics & Forestry students
- Environmental monitoring specialists
- LiDAR and geospatial data analysts focused on vegetation and structural modeling
- Forestry industry professionals (e.g., logging, timber harvesting, nurseries)

Format & Activities:

- Presentation & Discussion: Overview of RIEGL TLS portfolio and forestry use cases
- Hands-On Session: Data processing in RiSCAN PRO
- Comparative Analysis: Evaluate kinematic vs. static datasets
- Interactive Q&A: Discussion of real-world implementation and field strategies

Expected Outcomes:

Participants will leave the workshop with:

- A solid understanding of how to conduct and evaluate TLS-based forestry surveys.
- Practical experience processing RIEGL TLS data and extracting forest metrics.
- An analytical framework for comparing static and kinematic scanning performance across different environmental tiers.
- Confidence in selecting and optimizing the right workflow for their forestry project requirements.

Requirements:

- Participants should bring a **Windows laptop with Nvidia Graphics** with **RiSCAN PRO (demo or licensed)** installed. The instructor will provide the software to download and license prior to the workshop.
- Basic familiarity with LiDAR or point cloud processing is recommended but not required.
- Sample datasets will be provided.

Schedule: Monday, May 4, 2026

Duration: 4 hours

Instructor Biography:

The instructor has a background in geomatics and has spent much of his career working with different kinds of sensors, including LiDAR, radar, and depth cameras. After starting out in robotics and autonomous solutions, he now works with high-precision LiDAR on a wide range of applications in forestry, surveying, and environmental monitoring. His work focuses on how 3D point cloud data can reveal trends, measure change, and support better decision-making in the field. He believes that technology, when used thoughtfully, can help bridge the gap between what we see on the ground and what the data can tell us, leading to more efficient and sustainable practices across industries.

Agenda:

Topic	**Instructor**
Welcome and Workshop Overview	Bao Ha
Introduction to RIEGL TLS Portfolio and System Capabilities	Bao Ha
Static vs. Kinematic Scanning – Concepts and Workflow Differences	Bao Ha
Forestry Use Cases and Workflow Integration	Bao Ha
Break	—
Hands-On: Data Processing with RiSCAN PRO	Bao Ha
Tree Analyzer Plugin: Extracting Plot-Level Metrics	Bao Ha
Evaluating Tiered Forestry Scenarios (Terrain, Seasonality, Heterogeneity)	Bao Ha
Summary, Discussion, and Q&A	Bao Ha