

Large-Scale Corridor Mapping

The Problem

Power companies spend \$7 billion annually to follow strict vegetation management regulations, yet still face outages and reliability headaches. In order to maintain infrastructure and meet code, utilities must have accurate maps for hundreds or thousands of miles of right-of-way (ROW), without increasing costs.

What's Needed

High voltage power lines require large-scale precision coverage, following 250+ miles at 5-10 cm vertical accuracy. Accomplishing this means mapping at 30 – 100+ points per square meter (PPSM), enabling identification of dead trees or other risks along the ROW. Typically, only low-flying platforms have achieved these densities, making projects expensive.



3DEO Sequoia Sensor

The new 3DEO Sequoia LiDAR sensor makes high-density surveys affordable. Sequoia can gather 100+ ppsm from 18,000 ft while flying 350 - 450 kts, with a swath encompassing the entire ROW and then some.

Fly high, fly fast, see wide: Sequoia operates from 15,000–50,000 ft above ground level (AGL) at high speeds, clearing mountains and providing a wide view. For example, from 20,000 ft the system can image anywhere within a 6 km wide strip.

Smart scanning: 3DEO uses geo-referenced scanning systems engineered for corridor mode that follows winding ROWs and collects bypass substations without the plane constantly changing course.

Example Sequoia collection at 27,000 ft.

Who flies it?

Tenax Aerospace handles the operations using a modified Gulfstream G-IV. Tenax high-speed jets cover thousands of miles of ROW in just a few days, or even hours.



Data Analysis

The LiDAR data is then analyzed by Aethon, a leader in aerial LiDAR for utility vegetation and engineering services, to produce products that verify asset location, assess vegetation clearances, and eliminate blind spots for an entire network.



The End Result

Utilities save money for consumers by cutting flying time, while achieving their management and compliance requirements.

