Power Line Mapping & Monitoring
Benefits for the Power Supply Industry

Airborne Special Services
CONSTRUCTION OF NEW POWER LINES

High accurate 3-dimensional maps and digital elevation models from airborne laser scanners facilitate the planning of new power lines. Large or inaccessible corridors of hundreds of kilometers are surveyed more economically at a much faster rate than traditional terrestrial methods.

Example: Corridor 20sqkm: Airborne 1hour, Terrestrial 40hours

Digital elevation model with ortho photo overlay

Airborne Technologies deliver complete datasets tailored to customers specific needs, importable into AutoCAD and other common planning software.

PRODUCTS
Digital elevation models (digital terrain and surface models), contour lines, longitudinal and profile sections, orthophotos

By additional airborne surveys during the construction phases, the ongoing progress can be monitored, documented and controlled to exactly determine changes as they evolve on site.

RECORDING OF EXISTING POWER GRIDS

Precise information about the entire transmission line routing (e.g. buildings, terrain, vegetation, coverage) can be achieved using airborne laser scanning data. Entire networks of power lines with all intersections and elements in the corridor may be documented. This affords a faster and more cost effective way to simplify reconstruction measures or building request evaluations.

3D point cloud high voltage power lines

Airborne Technologies deliver digital route maps including orthophotos and inventory databases (e.g. clearances, vegetation density, pylon positions, cable sag…) capable of being incorporated into AutoCAD, Geographic Information Systems (GIS) or power line documentation software.

SPECIFICALLY FOR HIGH THEFT AREAS

High density laser scanning even enables registration of the thinnest low-voltage lines in urban areas, providing energy suppliers with measurements to counter misuse and theft of electricity.
Benefits for the Power Supply Industry

- Cost-effective GIS and AutoCAD ready planning data
- Fast and efficient recording of power grids
- Localization of faults at early stage
- Reduction of maintenance costs
- Prevention of unscheduled power breakdowns
- Enhanced security of power supply
- Decrease misuse of power grids

MAINTENANCE

To ensure effective inspection and maintenance of power lines it is vital to be continually informed of running changes in the power line corridor and their surroundings (e.g. verifying critical infrastructure/vegetation, detecting failure components...).

Using aerial survey data is very straightforward to confirm changes along large power line routings like:

- Additions to buildings
- Environmental damage through landslides
- Vegetation coverage in the protection strip

SURVEILLANCE

Infrared sensors for day and night surveillance are used to detect unauthorized activity and misuse.

All detections are geo-referenced and recorded in high definition video or can be down linked to ground stations in real time.

Airborne Technologies deliver customized reports including videos and pictures showing misused parts of the lines which are geo-referenced and marked on maps.

Vegetation growth control, critical clearances

Anomalies which indicate problems can be detected easily and during operation using infrared and daylight-UV cameras.

Airborne Technologies deliver high resolution images, digital maps and reports for further processing via maintenance software.

Infrared images of high voltage power line

Airborne Technologies deliver high accurate measurement and observation data for the entire lifecycle of power distribution networks, ranges from planning, constructing to operating and maintaining.
ABOUT THE COMPANY

Airborne Technologies is an Austrian private limited company based at the Wiener Neustadt Airport.

Airborne Technologies own and operate a fleet of multi-mission aircraft and data processing systems for remote sensing applications.

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