General Workflow for Powerline Extraction

1. Data acquisition with sensor (if applicable)
2. Point cloud generation with LP360 Drone (if applicable)
3. Geometrical corrections
4. Remove the noise
5. Classify the ground (Optional)
6. Classify the structures
7. Extract the cables automatically using “Powerline extractor”

Information on the parameters of the PCT

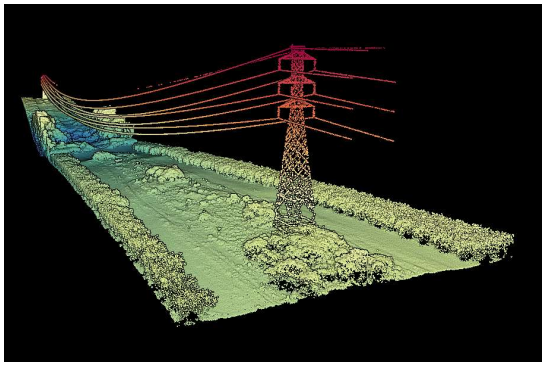
How to Classify Power Lines and Detect Vegetation Encroachment – Video Tutorial

Full Document Tutorial

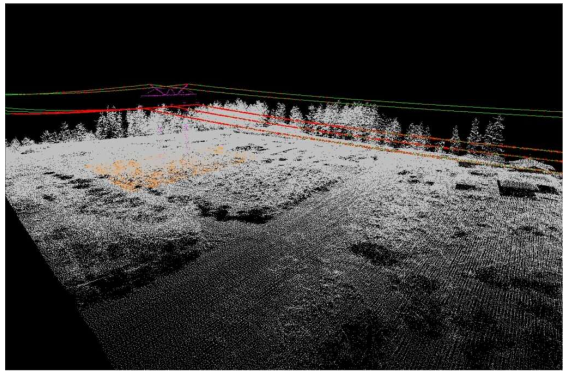
For additional information or documentation, please visit our searchable **Knowledge Base**: Support.lp360.com

Powerline Extraction in LP360

In this exercise, we will review the workflow for performing powerline extraction using LP360.



LP360



About the Powerline Extractor PCT

The Powerlines Extractor Point Cloud Task (PCT) extracts power line catenaries from the point cloud, with options to classify points and vectorize the catenaries. By leveraging this technology, technicians can efficiently classify and extract power lines while identifying vegetation encroachments with unprecedented precision.

If you are interested in Vegetation Encroachment, additional steps to follow are below:

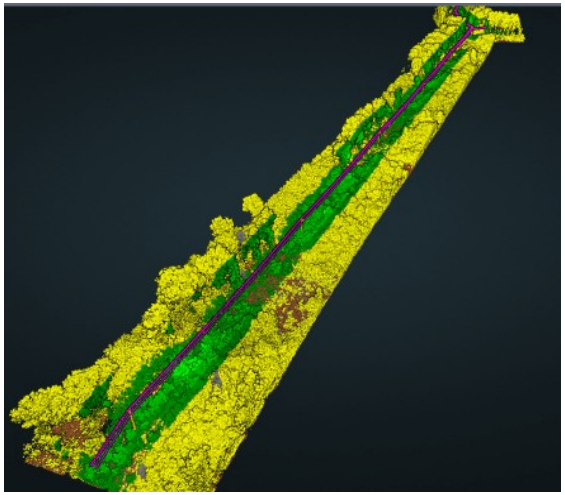
- Classify Vegetation
- Encroachment, with a radius of 10, 7.5, 5, and 3 meters around the cables
- Extract a list of locations with coordinates where the encroaching vegetation needs to be cleared

Classifying the Ground and Power Towers

For Ground Classification, there are manual classification tools that can be used if only classifying a small dataset OR there are PCTs available that will classify automatically. Having ground classified allows LP360 to better location and classify above ground features (Vegetation and Powerlines)

Powerline Extractor Parameters

The Powerline Extractor PCT has several parameter inputs needed to identify your powerlines. The ***Wire Thickness*** will depend on the application of the powerline itself. The ***NonVoid Space*** will be always the same value as Wire Thickness. ***Vertex Spacing*** is the distance between vertex in the 3D modelled wire. The ***Corridor Width*** and ***Min. Height from Ground*** inputs as well as the others can be estimated using the measure tool within LP360.



Extracting Powerlines

Before executing the Powerline Extractor PCT, you may want to use one or more of these tools to ensure you have a clean dataset: Strip Adjustment, Smoothing, QA with control points, remove outliers.

It is recommended to have a feature layer with the powerline path. It does not need to be very accurate, but it helps with the initial steps. It can be added as shapefile or KML. This can be accomplished of the Feature Edit ribbon.

As this PCT requires a guideline for the powerlines, there are 2 options for execution:

The **By Line** tool allows you to draw a general guideline and skip the powerline path feature creation step.

The **By Feature Layer** tool allows you to execute using the “powerline path” feature created and ensures each execution of the PCT occurs in the same location.

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