

Clash Detection

Introduction

Contact between two live conductors can cause catastrophic wildfire events and a total or partial loss of a grid's functionality. In recent years, as weather events become more unpredictable and destructive, heavy winds are more likely to cause conductors to sway and contact each other or come close enough for electricity to arc. In an effort to mitigate and prevent these risks, GEO1 offers an analytic solution to model conductor behavior and offer insight into exact locations for potential conductor clash.

Data

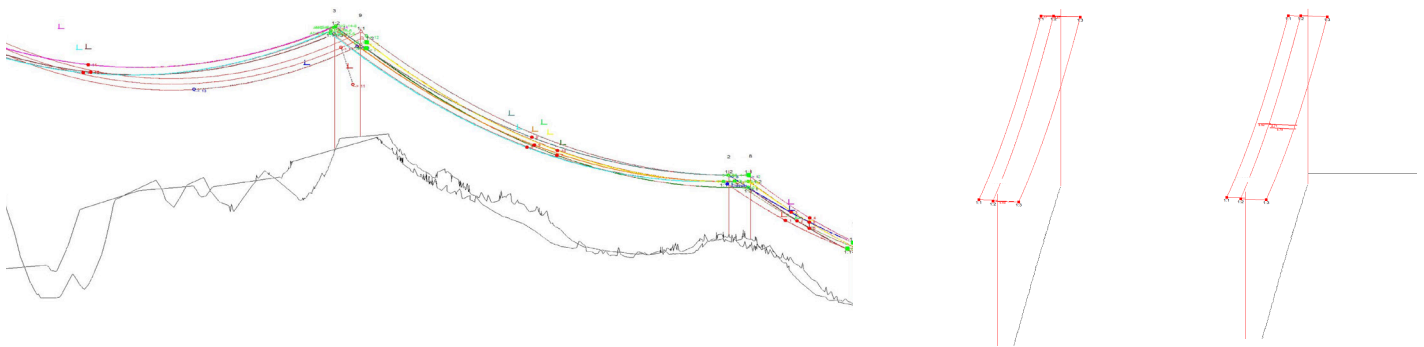
We begin with acquiring high resolution lidar of utility infrastructure, which allows for highly accurate geolocation of each structure, as well as unprecedented levels of detail for inspection.

Data from the lidar point cloud is used to create a 3-D model of the client's infrastructure. This can be viewed and analyzed in numerous cloud-based and desktop applications including PLS-CADD, Pointerra, Global Mapper, Neara, Pointly, and Luciad, as well as Esri's range of products.

Our team of experienced analysts, with the help of proprietary automations, can precisely determine key measurements such as span length, insulator heights, conductor spacing, and conductor sag.

Deliverable

The final deliverables include a Google Earth KML file representing the digital model of structures and conductors, as well as a thorough report of relevant measurements for each structure and span. This unprecedented level of detail, presented in an accessible format, allows the client to identify instances of potential conductor clash or arcing. The client may also use our data to confirm and update internal geopositioning data, as well as identify any anomalies in equipment or span measurements.



Clash Detection Metadata

| Structure Name | Latitude | Longitude | Insulator Height | Insulator Spacing | Sag | Span Length |
|----------------|----------|-----------|------------------|-------------------|-----|-------------|
| 123456 | 30.123 | 110.123 | 25' | 6' | 4' | 200' |
| 234567 | 30.234 | 110.234 | 26' | 7' | 5' | 200' |
| 345678 | 30.345 | 110.345 | 25' | 9' | 4' | 200' |

| Wire Spacing | Circuit Order | Station Distance | Centerline Z Elevation | Structure Type |
|--------------|---------------|------------------|------------------------|----------------|
| 10' | 1 | 100' | 1000' | X |
| 11' | 2 | 300' | 1000' | Y |
| 10' | 3 | 500' | 1000' | Z |

