



FIG Congress 2014

Engaging the Challenges, Enhancing the Relevance
(TS04B Paper No 7197)

Mitigation of the Impacts of Climate Change A Surveyor's Role

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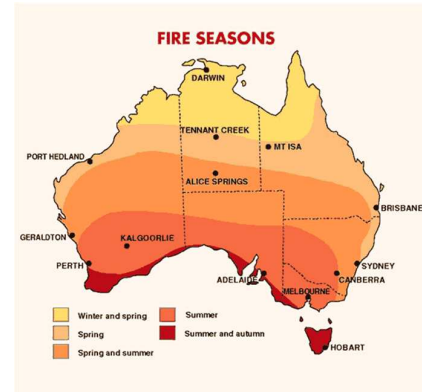
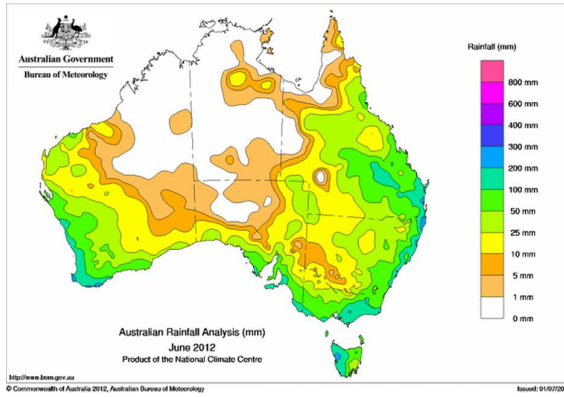
Climate Change is Real

- Excess carbon in Earth's atmosphere - burning of fossil fuels for energy + increased animal farming. High levels of greenhouse gases, leading to temperature rise.
- Australia's environment and economy particularly vulnerable.



Major Impacts

Less rainfall, warmer temperature &
Extended fire seasons



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Role of Surveyors to Mitigate Impacts

- Support reduction of CO₂ into atmosphere,
- Subdivision design - Guide planning process and direction of housing developments away from high bushfire risk areas,
- Use technology to prevent bushfires do not occur through man-made structures.

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Common Cause of Bushfires

- Natural causes – e.g. Lighting strikes
- Arson
- Clashing of Overhead Electricity Conductors
- Carelessness – cigarette butts, use of machineries on fire ban days etc.
- <http://www.youtube.com/watch?v=tvN1CqmviY4>

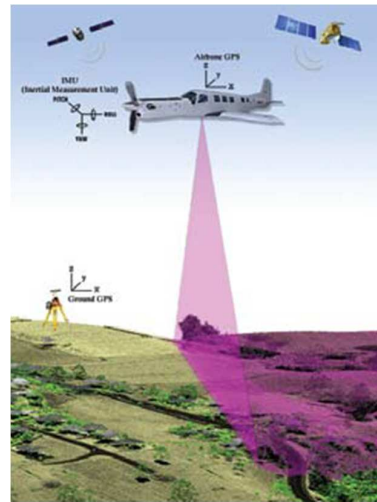


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LIDAR (Light Detection And Ranging)

- Airborne, Terrestrial or Mobile Laser Scanning
- Large Scale, Broad Acre & Corridor Projects
- Low Cost per square km
- Absolute Accuracy : +/- 20mm to
+/- 100mm



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Vehicle Mounted TLS With Camera & GNSS



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Sample Projects

Identification of Non-conforming Spans

Circuit-to-circuit



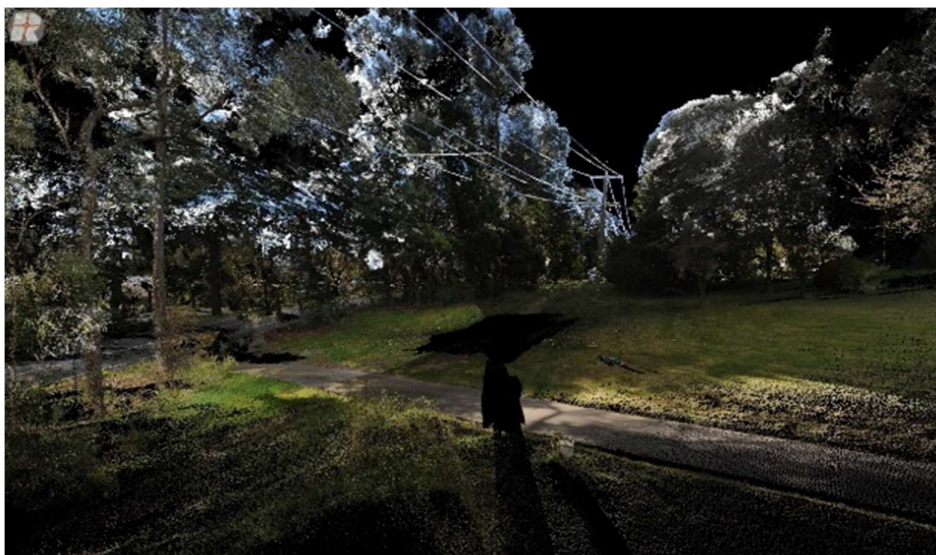
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Sample Project

Identification of Non-conforming Spans

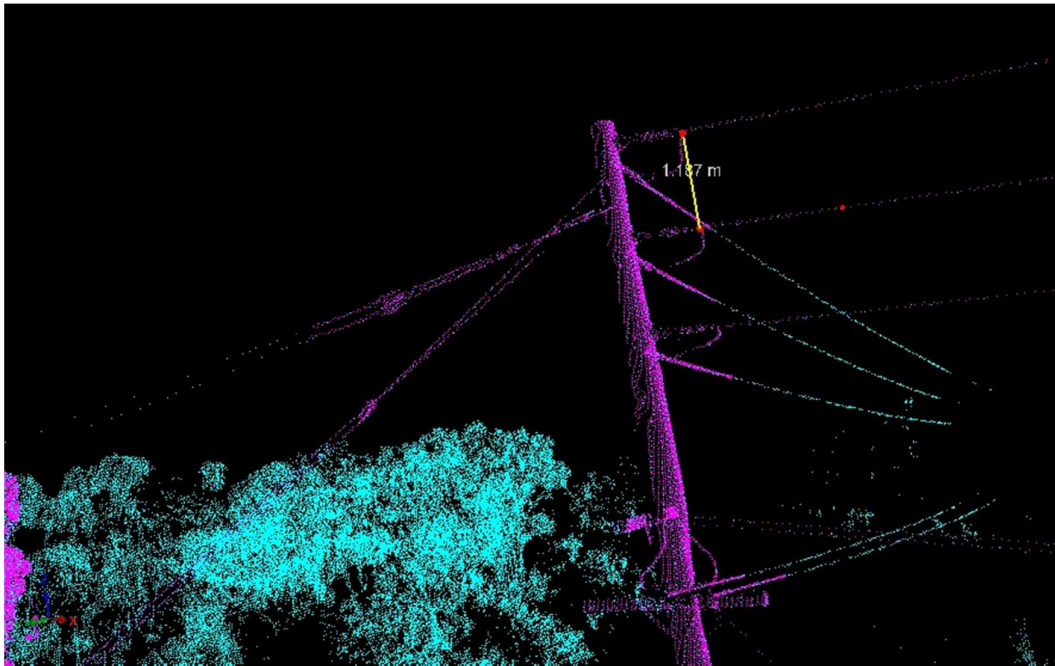
Conductor-Vegetation



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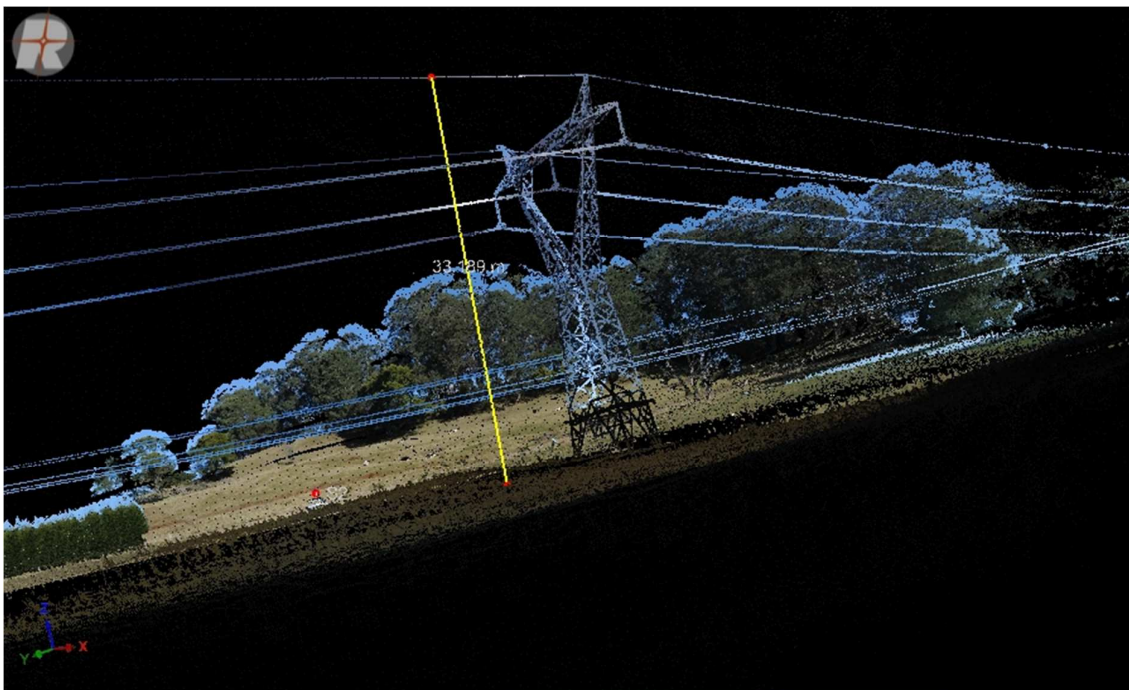
Network Identification & Measurement



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Laser Scanned Transmission Line 132kV Undercrossing

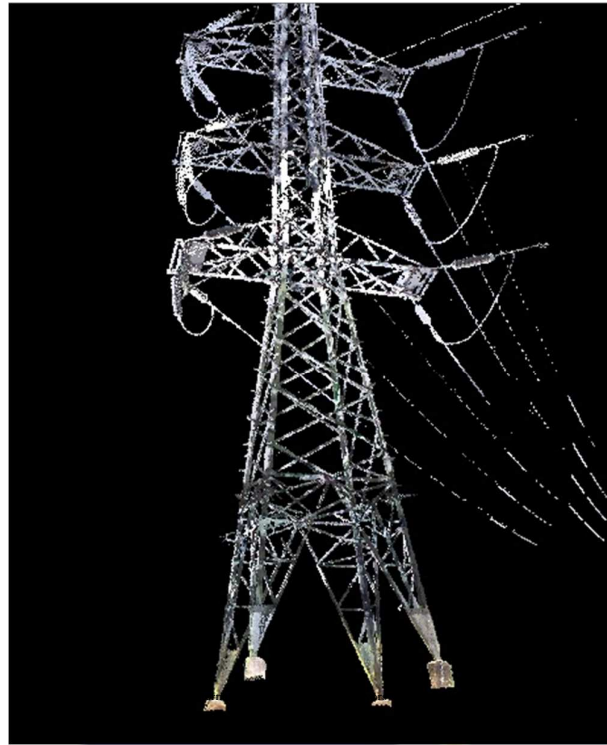


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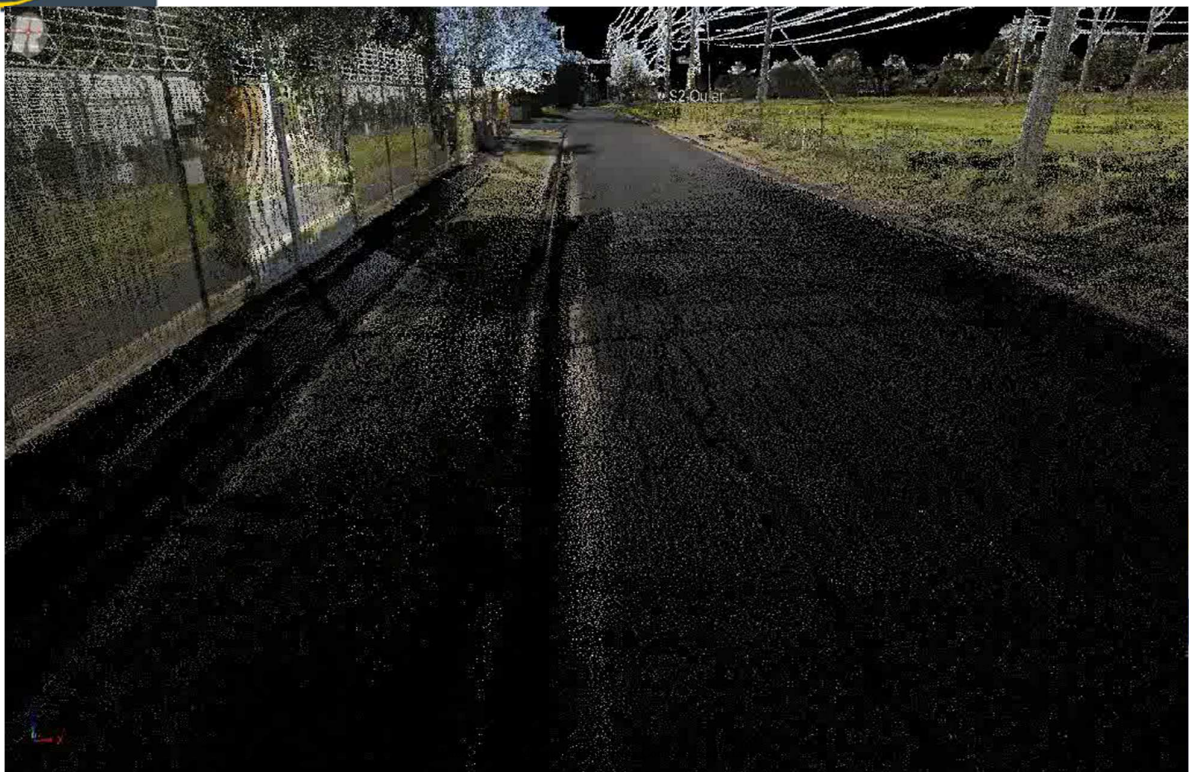
Laser Scanned 3D Model

Tower Fine Scan



Laser Scanned 3D Model

Terminal Station

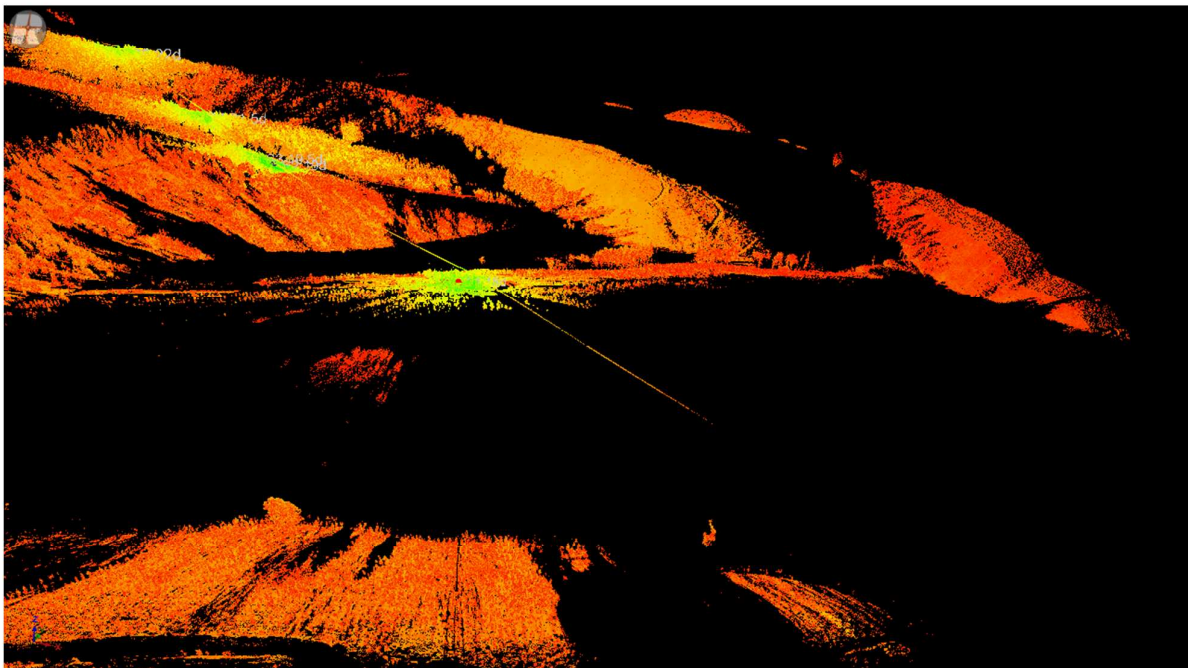




Single Wire Earth Return (SWER) Conductors



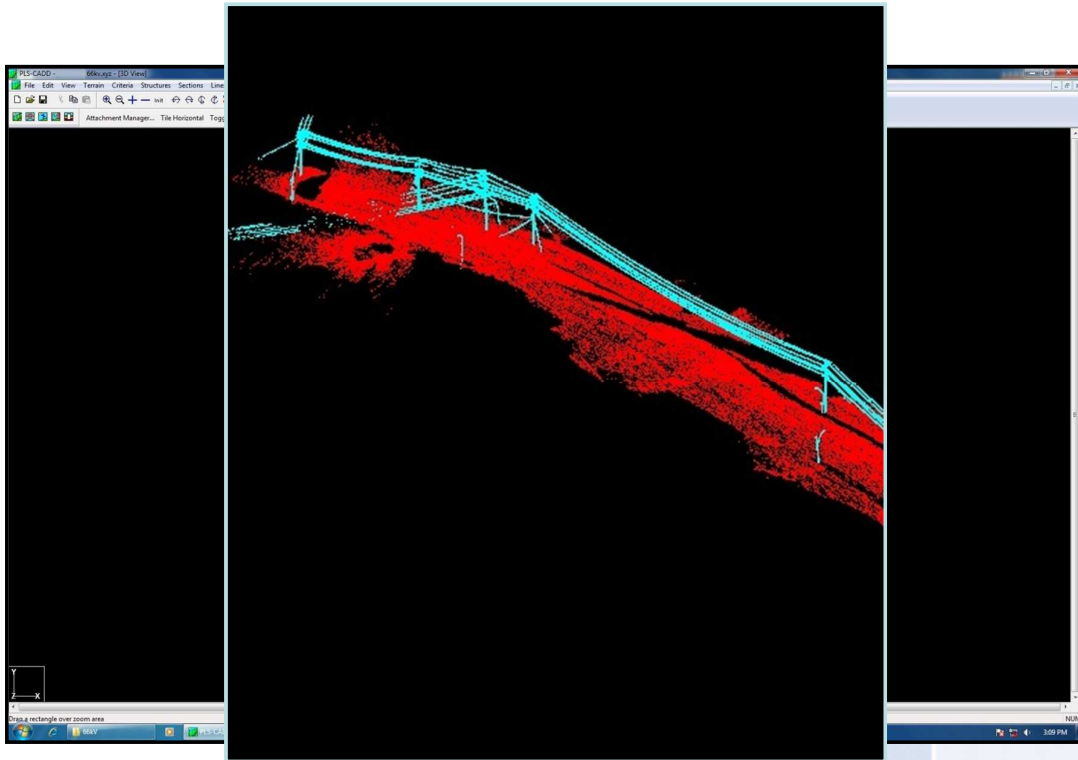
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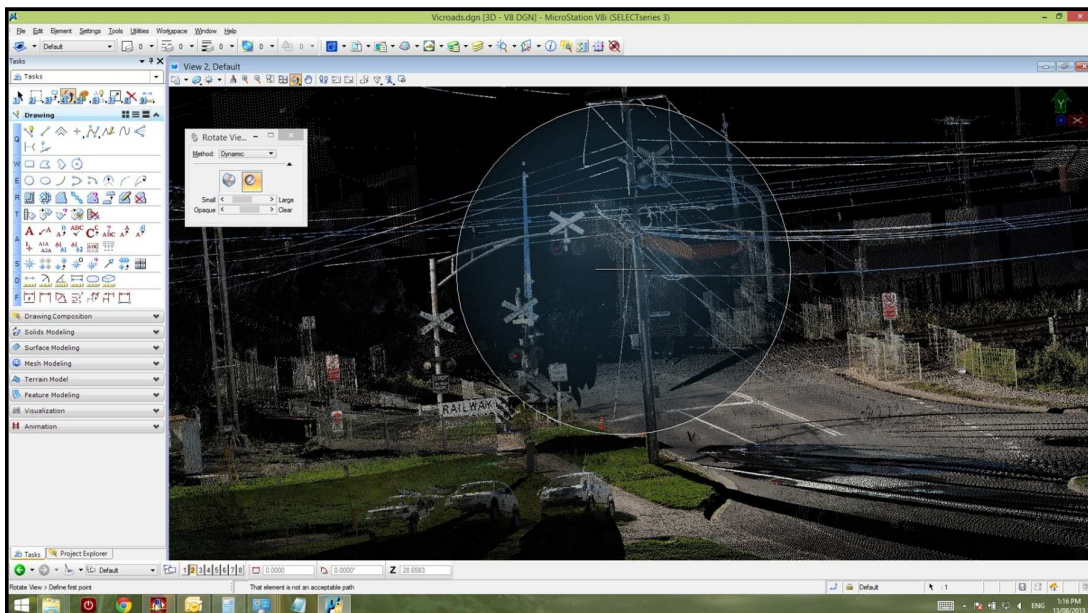
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TLS Data PLS-CADD

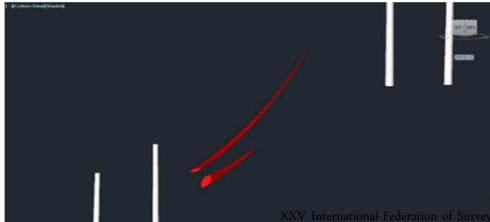
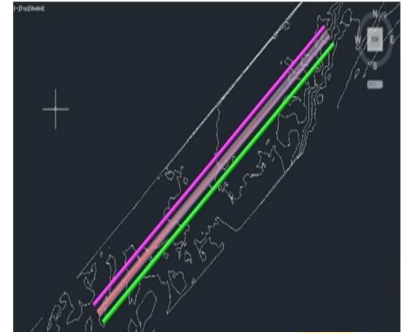
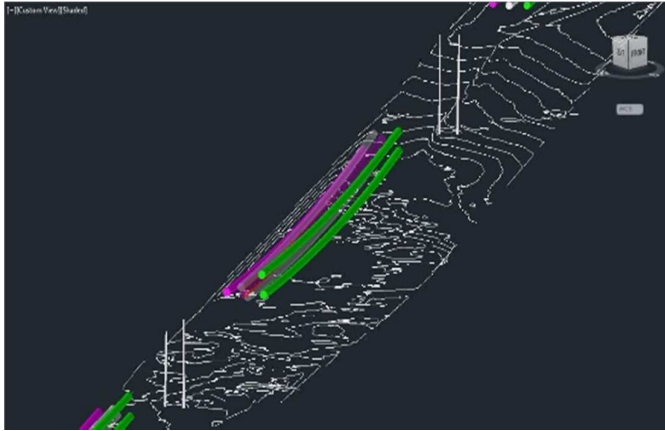


TLS Data MicroStation





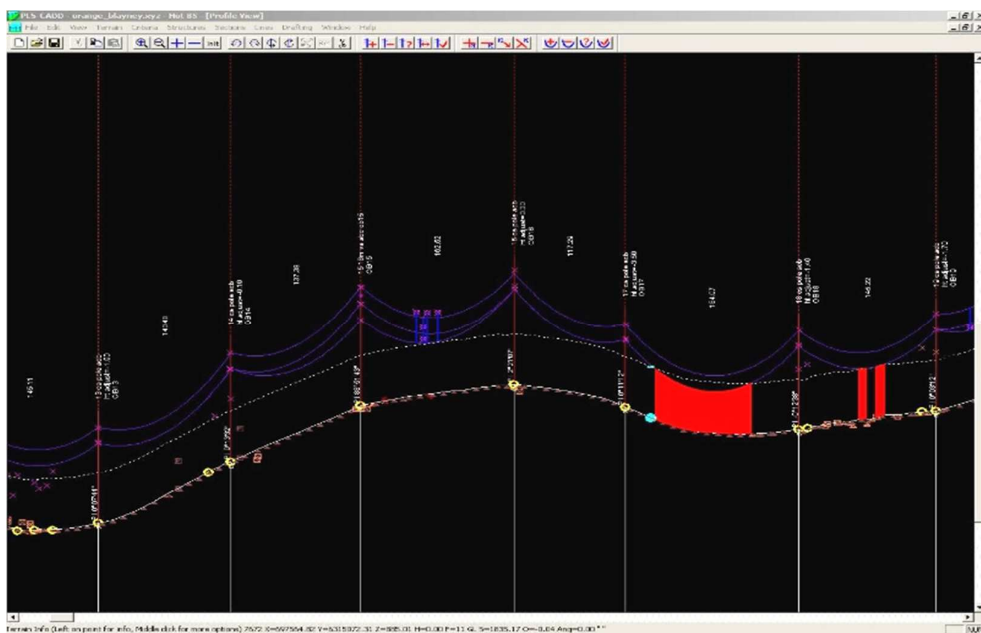
Vectorisation & Encroachment Analysis Automation



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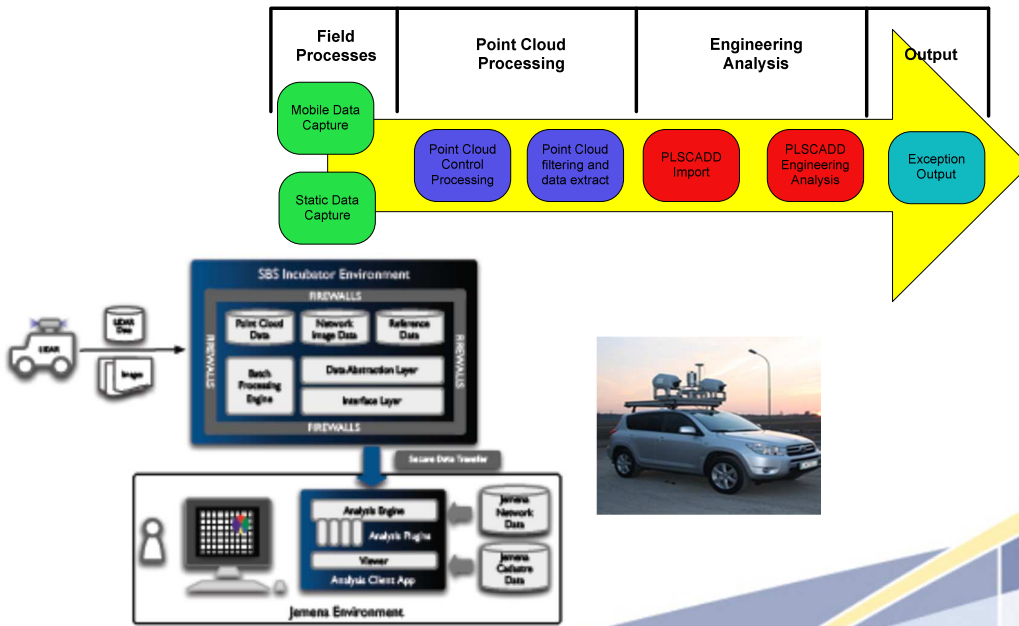
Identifying Non-conforming Spans



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Data Management & Future Strategy



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QUESTIONS?



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