



Geo-data at Scale: helping monitor risk across entire power networks

Chris Boreland 14th February



The Real World Issue

All asset management companies have 3 core business critical requirements;



Reduce Time and Effort



Reduce Costs



Increase Auditability

How can our clients deliver these;

- Replacement of traditional inspection services with remote inspection services
- Creation of data driven asset management through digitalisation/digital twin
- Leveraging 3D geodata with simulation and analysis



One of the largest asset management costs is inspection

ROAMES® - History

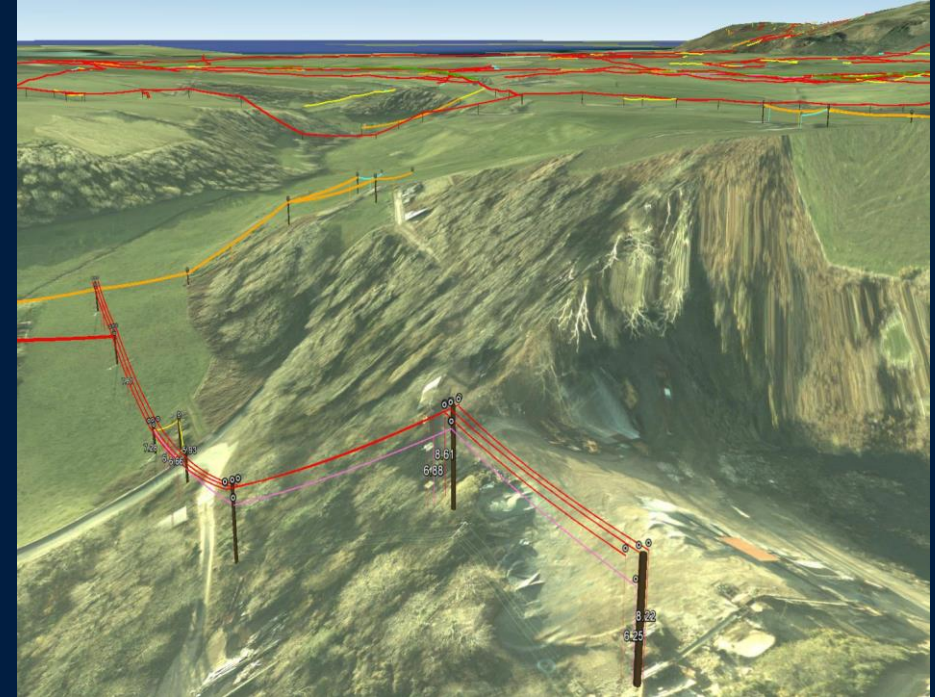
Foundation Client - Ergon Energy now Energy Queensland

2007 - Went to the market to find a commercial solution from aerial survey companies but could not find a cost-effective solution that delivered to the requirements.

Aim: Provide a comprehensive remote vegetation monitoring system and lower the cost of vegetation management.

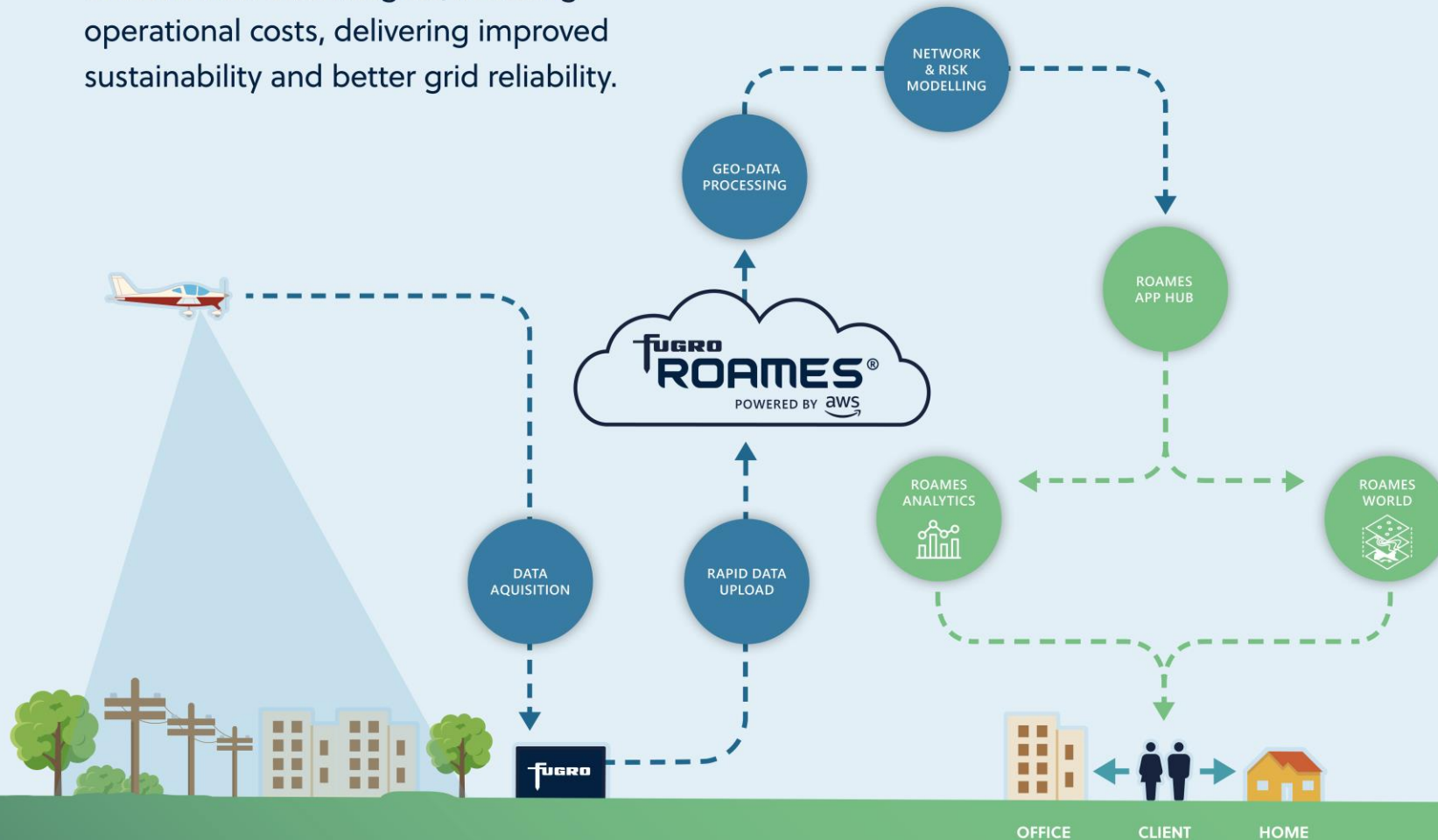
Developed a solution using Lidar to accurately map and model the overhead network and report vegetation clearances.

2014 onwards – ROAMES® launched across the UK and US regions with instant success



Fugro ROAMES®

Unlocks new data insights, reducing operational costs, delivering improved sustainability and better grid reliability.



BENEFITS



Cost Savings – Reduce maintenance and vegetation management operational costs by up to 40 %



Increase revenue – Prevent and reduce unplanned outages caused by vegetation or asset failures



Reduce risk – Mitigate public safety hazards by identifying vegetation and objects that are too close to the power line

Network model

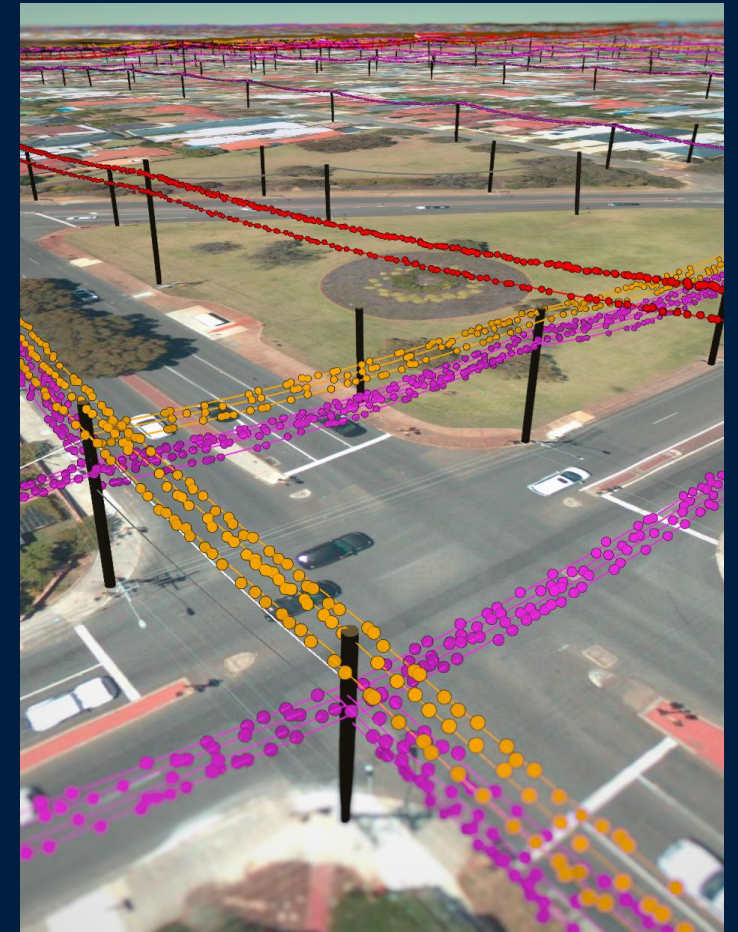
The ROAMES® **network model** is a 3D visual representation of the electrical network based on real-world location and position.

Build a complete
asset inventory

Find and
prioritize defects

Audit third-party
attachments

Assess or
inventory post-
disaster fixes



Asset matching

Asset matching demonstrates a spatial link between the surveyed ROAMES® network model and your GIS network.

Align GIS
network to
survey location

Preserve
corporate records
and GIS
investment

Reduce
conflation costs

Find missing
network



Vegetation encroachment

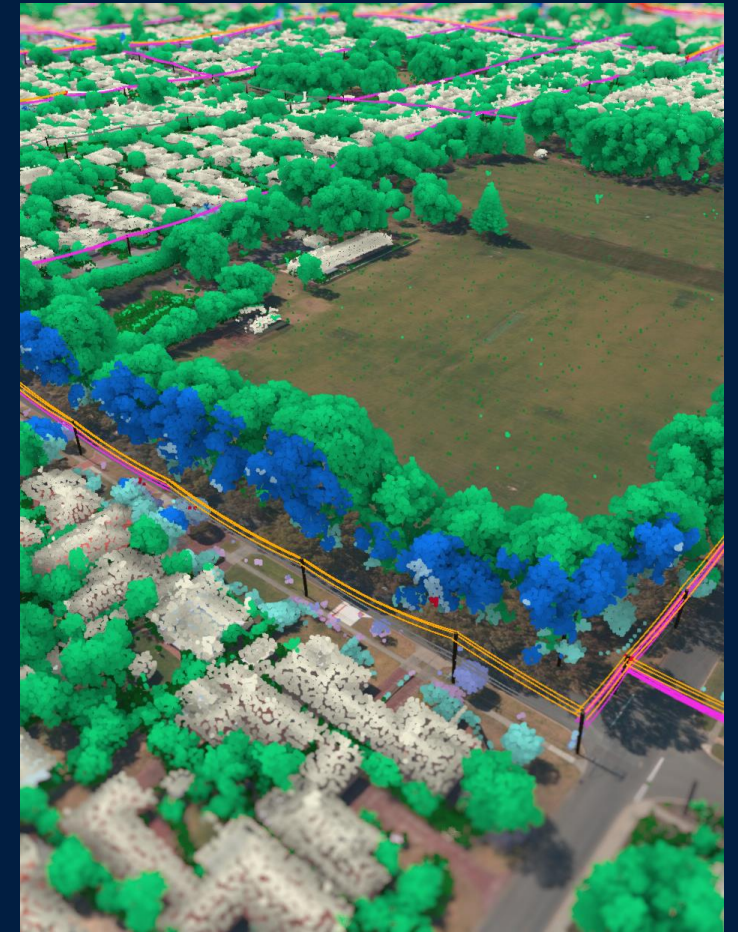
Vegetation encroachment identifies trees, shrubs or other vegetation within a user-defined clearance tolerance of the network model.

Perform desktop-based scoping safely from the office

Quickly prioritize work for your entire network

Audit work performed by vegetation contractors

Identify fall-in risk



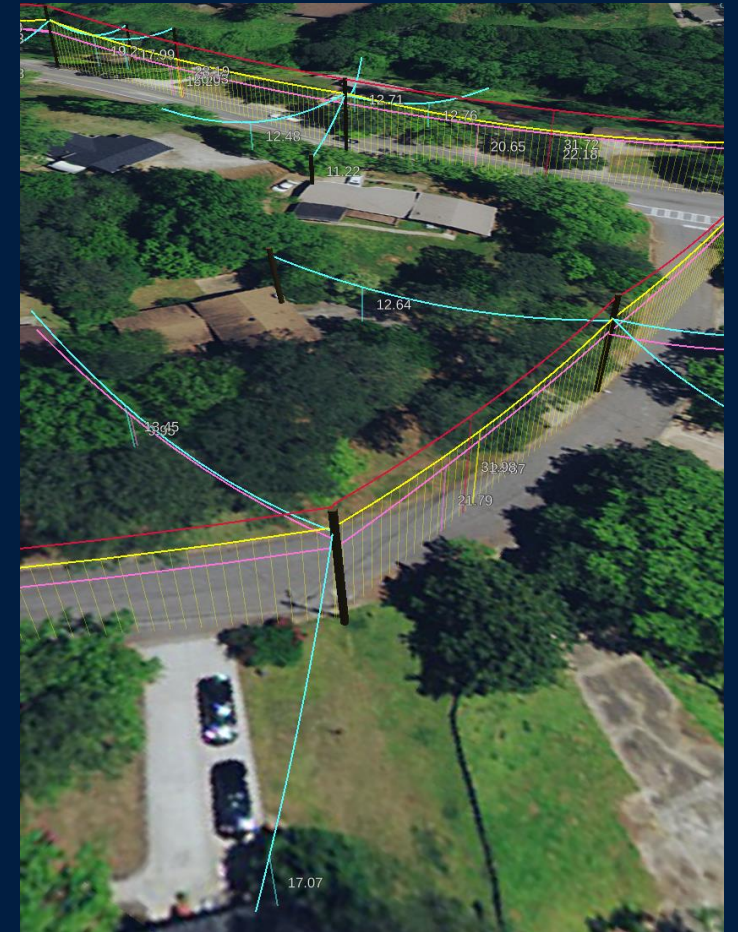
Network clearance measures clearance for every conductor and reports proximity violations based on required standards or proprietary defect categories.

Target high-risk locations

**Achieve
compliance with
regulatory
standards**

Re-direct field crews to higher priorities

**Maintain record
of asset location
and
environmental
conditions**



ROAMES Analytics

Easier. Faster. Better.



ROAMES World integration



New, simple design



Configure custom views



Secure collaboration for unlimited users

Analytics Asset Model

Model Distribution > Asset Model

MA Program Type MA Name MA No Cycle No Network Bay

MEC 0 and 1 Matched
Default

Select	MA Program Type	MA Name	MA No	Cycle No	Bay Id	Bay Capture Status	Bay Capture Date	Bay Length	Bay Voltages	Bay Site 1 Label	Bay
<input type="checkbox"/>	Urban		10646691	1	10646691	Good	2019-10-17	81.73	240V	1011263	1
<input type="checkbox"/>	Urban		10645479	1	10645479	Good	2019-10-17	100.33	240V	1005698	1
<input type="checkbox"/>	Urban		10645452	1	10645452	Good	2019-10-17	21.46	240V		1
<input type="checkbox"/>	Urban		10645451	1	10645451	Good	2019-10-17	69.36	Communications	1008644	1
<input type="checkbox"/>	Urban		10645450	1	10645450	Good	2019-10-17	66.11	240V		1
<input type="checkbox"/>	Urban		10645447	1	10645447	Good	2019-10-17	88.39	240V	1008644	1
<input type="checkbox"/>	Urban		10645446	1	10645446	Good	2019-10-17	84.97	Communications	1005522	1
<input type="checkbox"/>	Urban		10645303	1	10645303	Good	2019-10-17	198.82	13kV, 120V, Com...	1002113	1
<input type="checkbox"/>	Urban		10645303	1	10645303	Good	2019-10-17	198.82	13kV, 120V, Com...	1002113	1
<input type="checkbox"/>	Urban		10645303	1	10645303	Good	2019-10-17	198.82	13kV, 120V, Com...	1002113	1
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<input type="checkbox"/>	Urban		10645299	1	10645299	Good	2019-10-17	39.76	240V	1004298	1
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<input type="checkbox"/>	Urban		10645294	1	10645294	Good	2019-10-17	24.54	240V		5
<input type="checkbox"/>	Urban		10644794	1	10644794	Good	2019-10-17	54.69	240V	1009600	1
<input type="checkbox"/>	Urban		10644793	1	10644793	Good	2019-10-17	76.08	240V, Communica...	1003214	1
<input type="checkbox"/>	Urban		10644793	1	10644793	Good	2019-10-17	76.08	240V, Communica...	1003214	1
<input type="checkbox"/>	Urban		10604011	1	10604011	Good	2019-10-17	58.2	240V	1004847	1

Display Item 0 to 31 | Total of 54,997

Get more from your data with ROAMES Analytics.



ROAMES

World

Powerful. Intuitive. Easy.



ROAMES Analytics integration



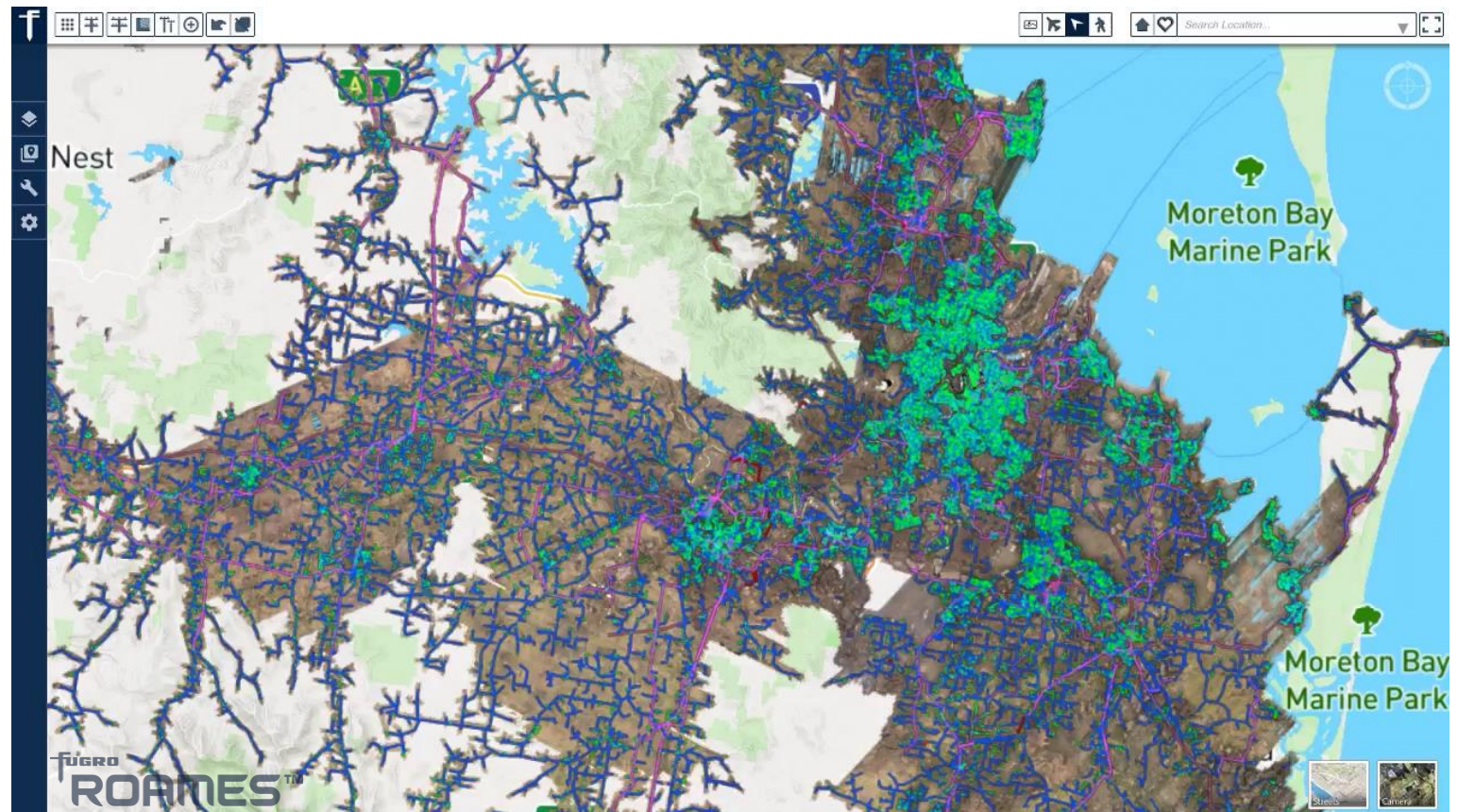
New, simple design



Survey-level accuracy



Secure collaboration for unlimited users



Explore with ROAMES World.

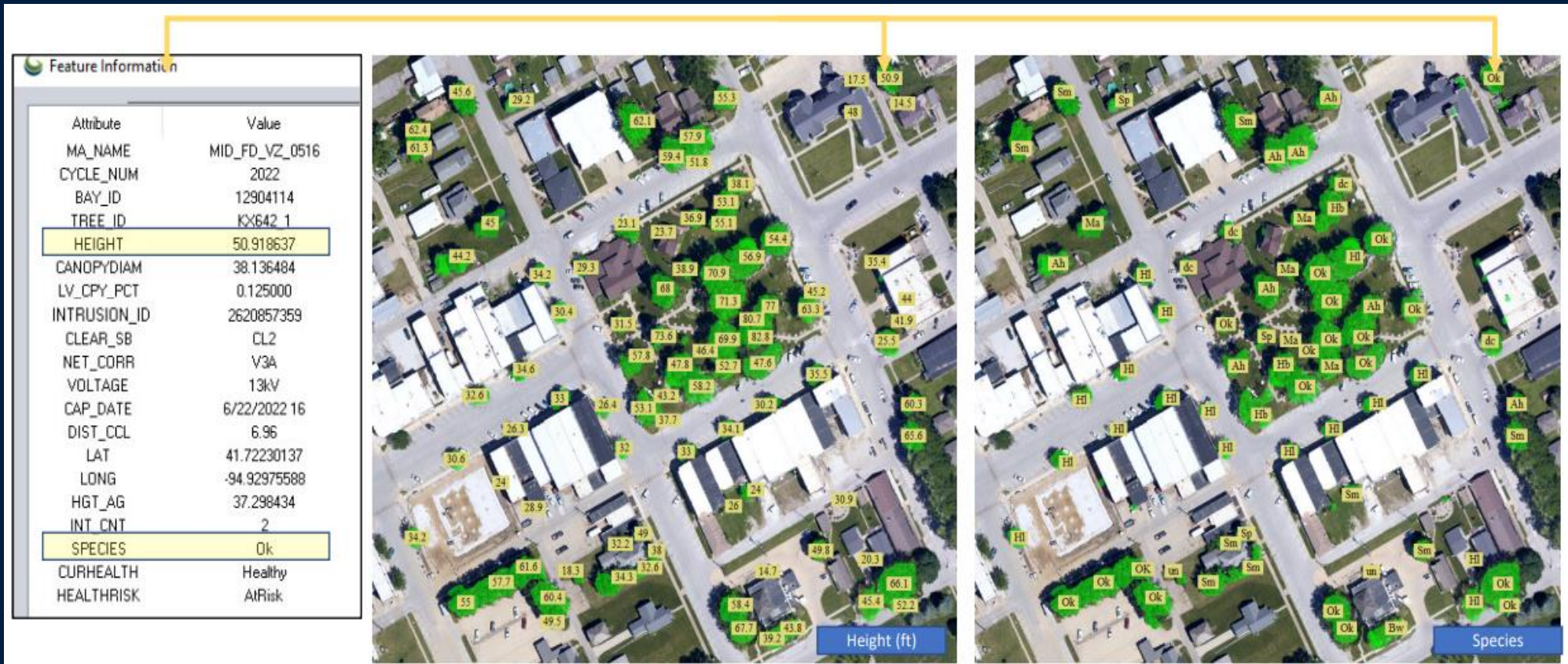
Tree Analysis

Select the best
equipment and
crew for removal

Identify risk that
can't be seen by
the human eye

Find hazard trees

Monitor tree
health and
condition over
time





Thank you

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 <https://www.fugro.com/our-services/asset-integrity/roames-power>