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SPACESIUM

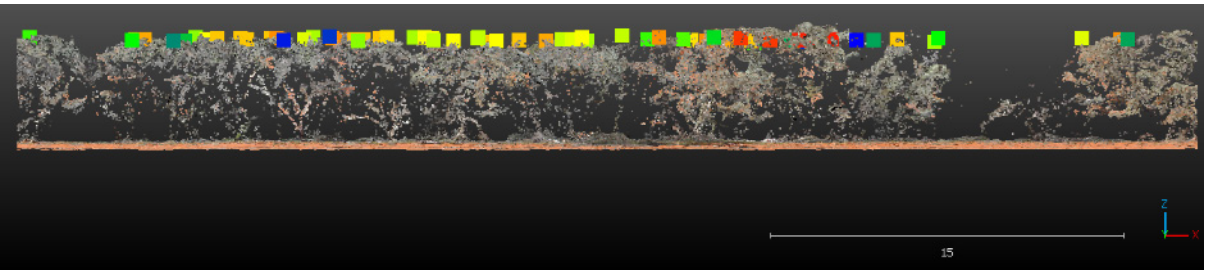
How Envirocapture Collaborates with Spacesium to Quantify Forestry Metrics

Project Description

As the evolution of drones and sensors progresses, advancements in data processing capabilities has some catching up to do. Spacesium has been partnering with Australian drone operator Envirocapture in harnessing the full potential of their current drone lidar technology.

Specifically, Spacesium's tree segmentation algorithms have played an important role for Envirocapture, particularly in our endeavours focused on carbon farming projects spanning across Australia.

In 2023, Envirocapture engaged with a long relationship to capture lidar scans in the Australian outback. The end goal was to develop a streamlined workflow to capture > process > deliver at scale!



Data Acquisition from the Air

For optimal efficiency, drone lidar flights were carried out on small blocks - each comprising of a 30-minute flight mission.

There were multiple flight areas across the state of Western Australia and the Northern Territory spanning over 500 flight missions and over 460GB of processed data. Now that is a lot of kilometres on 4WD tracks with even more take offs and landings.

The flight plan was used to take continuous grid like patterns with parallel flight lines. All scans were taken with the relevant survey ground control points over the entire area.

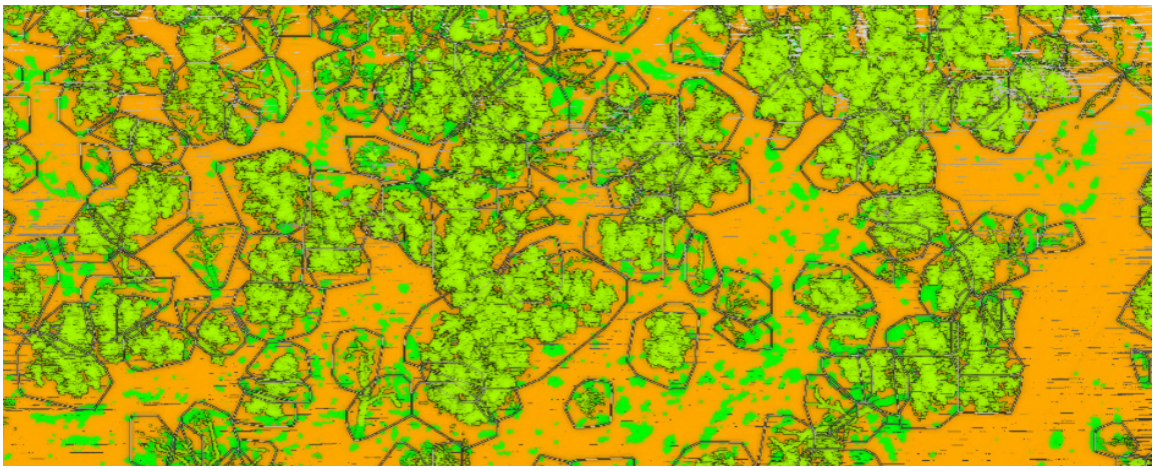
Achieved Results

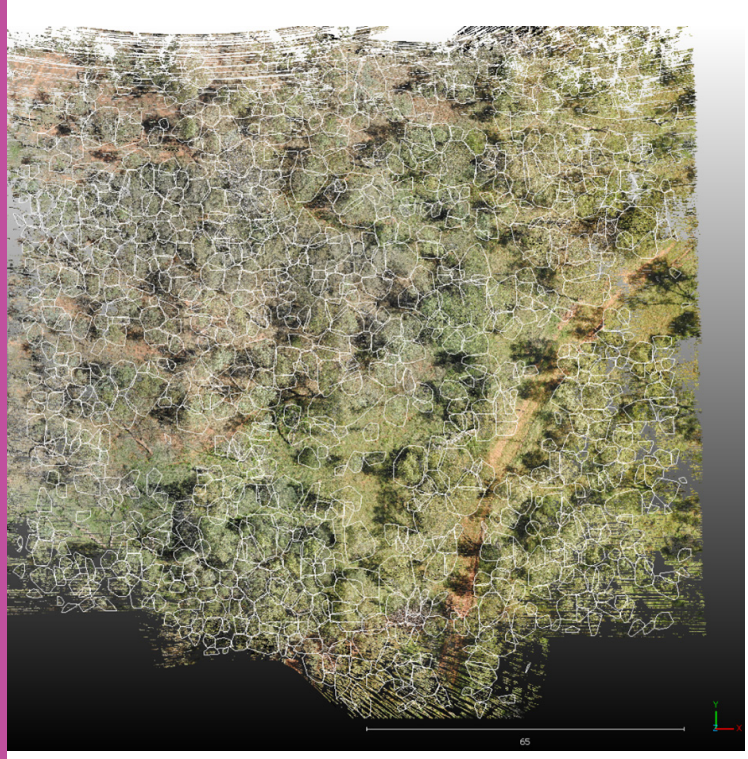
Requests for deeper insights from our LiDAR and photogrammetry data capture lead to us working with Spacesium. Tree segmentation has improved our ability to analyse and report tree canopy areas. In particular, segmenting trees according to specific requirements and being able to report parameters of individual trees based on specification.

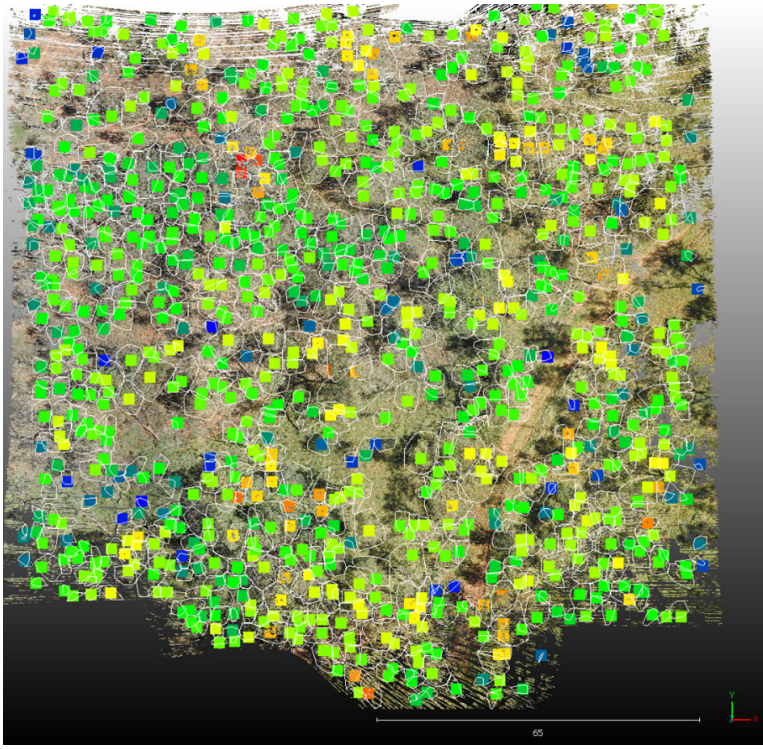
Time is always a key requirement for any client. The quick turnaround from Spacesium has meant that we can rely on getting timely results and meeting or exceeding delivery. From initially only processing tree segmentation we have subsequently been working with Spacesium to use their ground and vegetation as part of a more comprehensive workflow.

It became apparent that in order to accurately identify tree segments within the point clouds, the teams at Envirocapture and Spacesium fine-tuned specific parameters in the algorithms to align with the sensor and land conditions.

Customising these settings offered the primary advantage of facilitating the true automation of batching the work through our software algorithms.







Advancement of Automation and Software

"We continue to work with Spacesium on expanding our existing workflow as well as other data processing tools." says Peter Evans, Director of Envirocapture.

The ever-improving quality of data is a predictable solution, constantly evolving alongside advancements in hardware and data capture methods. In the realm of forestry and tree projects, harnessing this evolving data landscape requires a multifaceted approach.

By constructing software that is not only agile but also customisable, we empower ourselves to adapt to the changing needs and complexities of forestry management. This adaptability ensures that we remain at the forefront of providing the highest quality solutions for forestry and carbon initiatives.

Moreover, the automation of data processing within this framework introduces a transformative element. It establishes a scalable processing engine capable of handling vast quantities of data while maintaining rigorous quality standards. This combination of automation and scalability not only streamlines project workflows but also ensures consistency and reliability across a spectrum of endeavours.

In conclusion, the ingenuity of agile and customisable software represents the cornerstone of our commitment to excellence in forestry and tree projects. By leveraging these tools, we not only meet the demands of the present but also lay the foundation for the successful execution of future initiatives, ensuring a sustainable and thriving ecosystem for future generations.

Ready to explore more? Please contact Peter Evans at

www.envirocapture.com.au