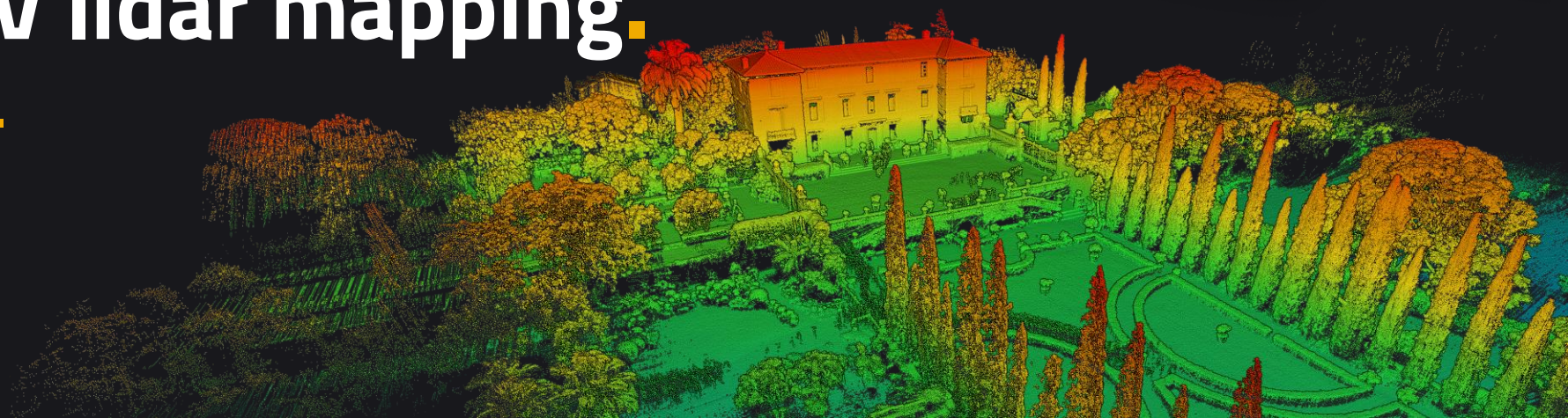
YellowScan

Designed to innovate.

Tristan Allouis, *PhD.* YellowScan CTO

30 May 2022 / 15:00 - 17:00
EPIC Online Technology Meeting on Photonics for Woodworking

UAV lidar mapping.



A full ecosystem for our users.

Mapping tools

Turnkey, easy-to-use LiDAR systems

Software

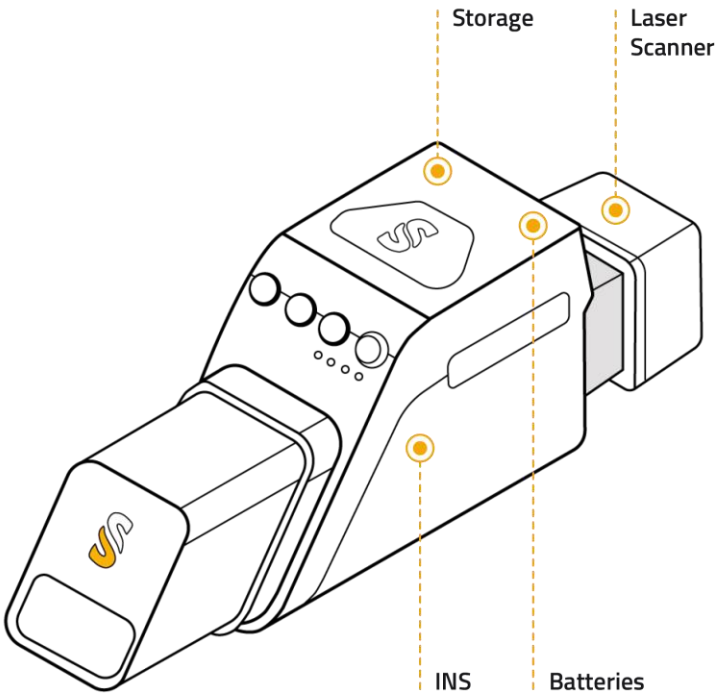
Streamlined, state-of-the-art software solutions

Support

A committed and supportive team

Hardware offer.

- Lightweight
- Fully integrated with embedded batteries
- Easy setup
- Compact
- Adaptable to any UAV platforms



Software offer: CloudStation.

Manage point clouds

A complete software solution to create and manipulate your point cloud data.

Customize data

Extract, process and display data immediately after the acquisition flights

Export .LAS and .LAZ files

The auto-generation of strips and the production of .LAS and .LAZ files are done in a few clicks. Only 15 min to export your LAS files.

Strip adjustment

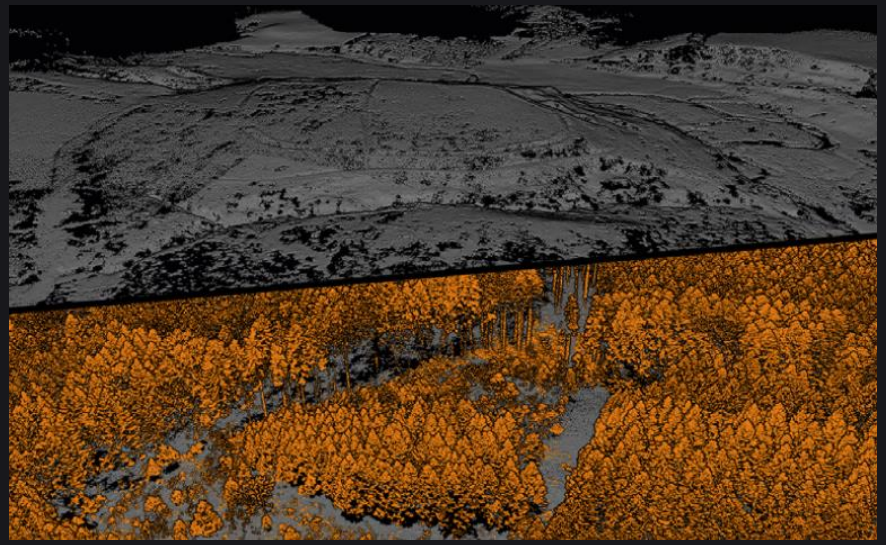
A point cloud enhancing toolbox

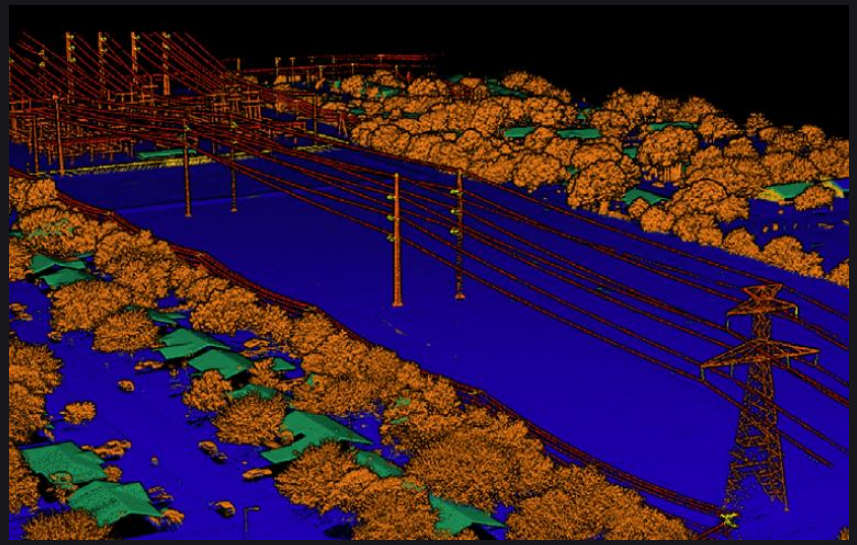
Terrain

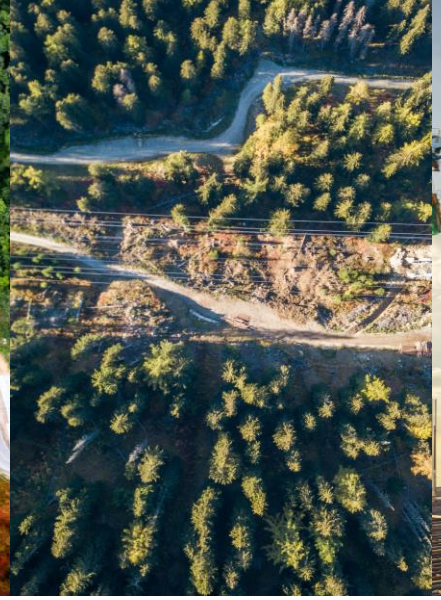
Generate your DTM in just a few clicks

Colorization module

Colorize and texturize your point cloud with simultaneously captured pictures






Forestry

Tree inventory, biomass estimation, tree height measurements, get all the data you need for your forest management.

Power lines

Secure your power lines and plan the trimming of offending vegetation with 3D data.

Civil engineering

Plan excavation & backfill, follow your construction sites and stockpiles with real-time aerial imagery from lightweight UAV.

Mining

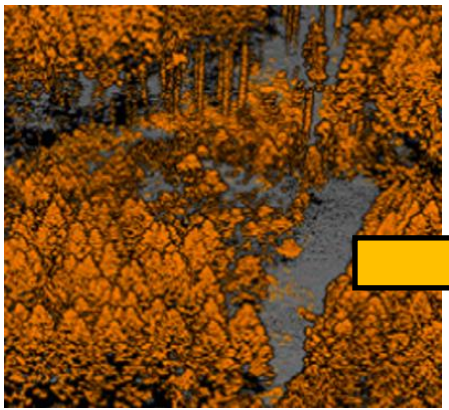
Manage raw material inventory or site development.

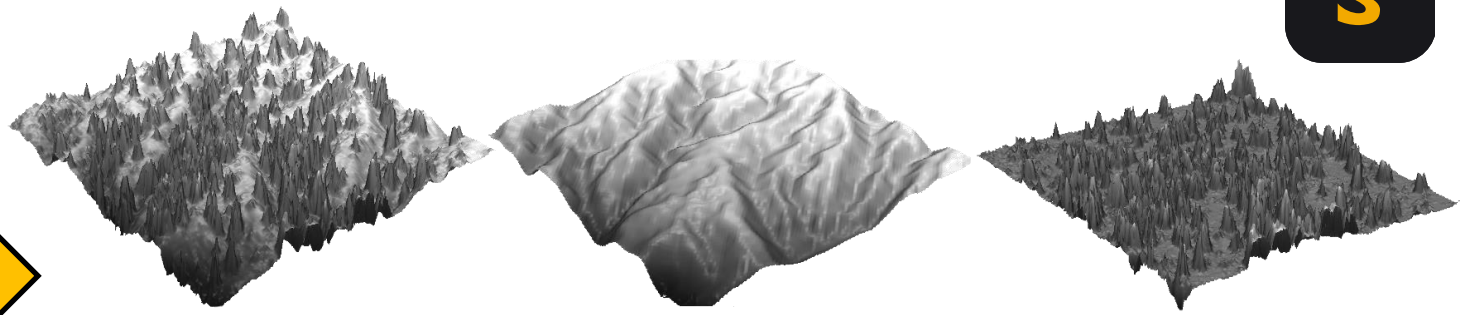
Archeology

Discover the ancient ruins buried under vegetation.

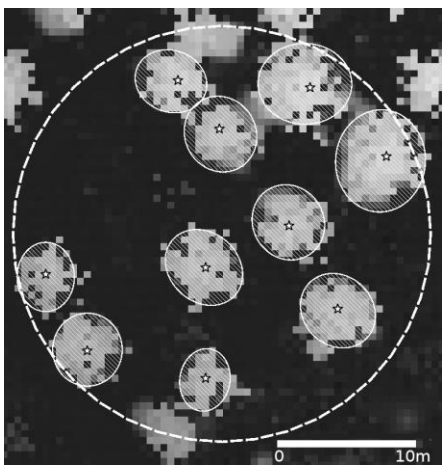
... from various industries.

How to work with lidar data?





Digital Surface Model - Digital Terrain Model = Canopy height model

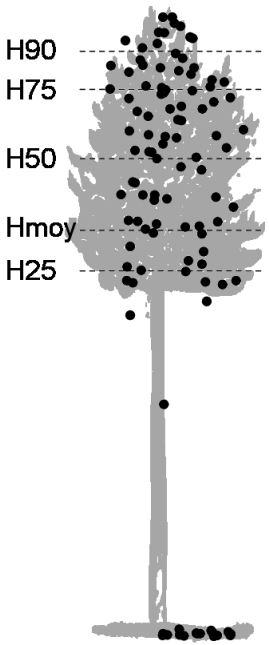


Processing Canopy Height Model for assessing :

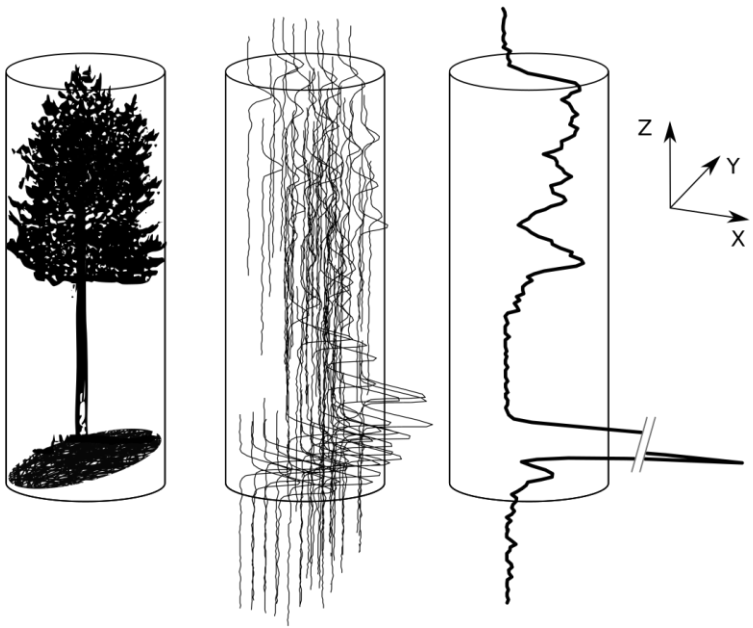
- Tree height
- Crown dimension
- Tree density
- Volume / biomass (allometry)
- Tree Species (in combination with RGB, multispectral or hyperspectral data)

How to work with lidar data?

More **precise Volume and Biomass estimates** at the individual tree level can be achevied using **point cloud** or **full-waveform** lidar data



Estimates accuracy & precision	Volume (bias ± σ)	Biomass (bias ± σ)
Canopy height model	19% ± 18%	30% ± 42%
Canopy height model + Point cloud	16% ± 15%	30% ± 42%
Canopy height model + Fullwaveform	21% ± 23%	21% ± 23%



T. Allouis, S. Durrieu, C. Véga and P. Couteron, "Stem Volume and Above-Ground Biomass Estimation of Individual Pine Trees From LiDAR Data: Contribution of Full-Waveform Signals," in *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol. 6, no. 2, pp. 924-934, April 2013, doi: 10.1109/JSTARS.2012.2211863.