Monitoring a pine forest using automated drone surveys.

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A drone has been custom-built and is equipped with a unique combination of sensors.

SNAPSHOT hyperspectral cameras

460-600 nm | 600-860 nm | 1100-1700 nm

SIF sensor

QE-Pro Ocean Insight

thermal camera

FLIR Tau 2 Thermal Focus

pyranometer

SMP11 Kritech

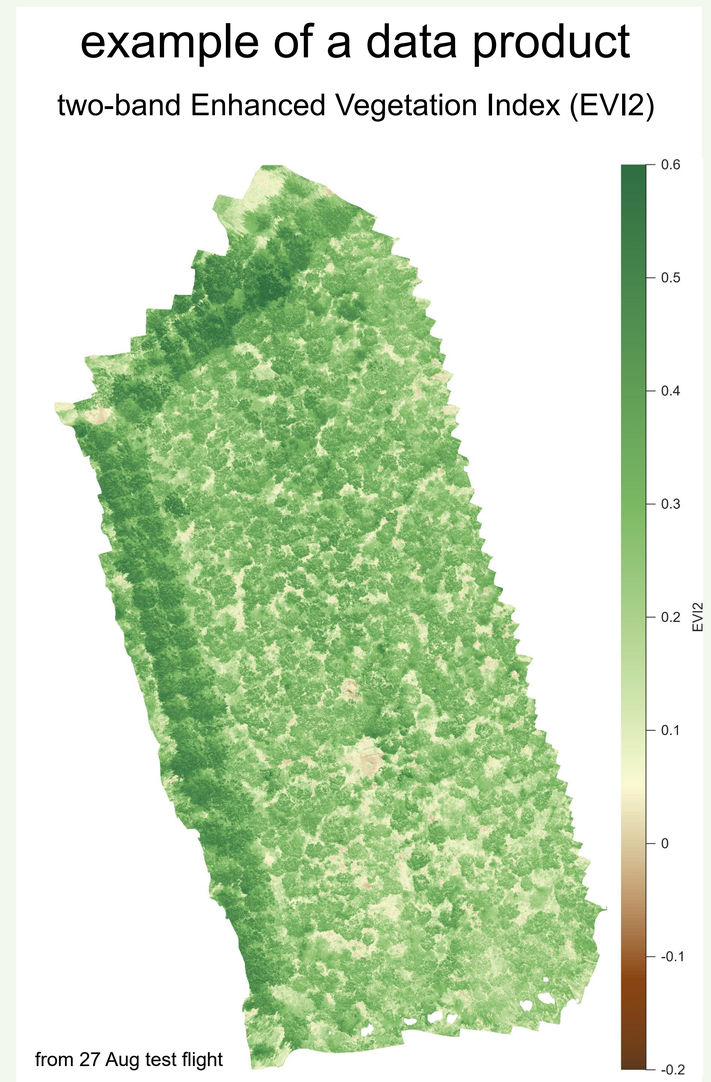
pyrgeometer

SGR4 Kritech

This drone will be deployed at a pine forest in Belgium (ICOS station BE-Bra).

example of a data product

two-band Enhanced Vegetation Index (EVI2)



from 27 Aug test flight

The drone will carry out repeated, automated flights and collect a plethora of data. These data will be linked with ICOS measurements, such as greenhouse gas fluxes.

- spectral reflectance: 40 bands in 460 – 1700 nm
- Sun Induced Fluorescence
- canopy temperature
- reflected shortwave & longwave radiation

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- estimating Gross Primary Production (GPP)
- assessing tree stress and health status
- identifying tree species
- ground truthing of remote sensing data

Routine flights are expected to start at the beginning of the 2026 growing season.

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