



sim^aactive

Perform forest monitoring at higher accuracies

QUICK GUIDE

Challenges

Accurate information is critical for forest monitoring. Traditional field survey can be a long and tedious process to correctly map a site. Typically, a wide range of information is required on various types of forest attributes including tree heights, species information and extent. Recently, the use of drones to collect data is becoming popular as it is much more effective than traditional methods. Photogrammetry provides forest managers a quick way to map their survey site.



Collection

While aircrafts can be used, drones offer major advantages due to their low cost and ease of use. Multi-rotor or fixed-wing platforms can be flown, depending on the resolution required, the size of the area to be covered and operational constraints. Dense forest can be more challenging for photogrammetry, since trees and leaves can have a very different aspect between two consecutive images. Therefore, when planning a drone survey in forested areas, it is important to have high overlap/sidelap (e.g. 80-60%) and a high-flying altitude.

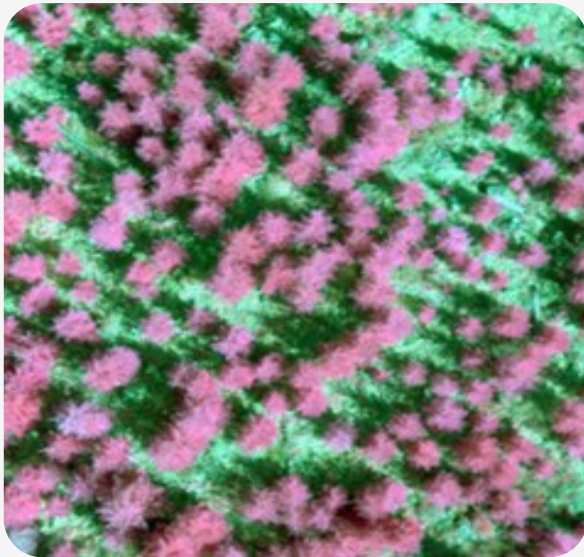


Processing

The collected data can be quickly processed by Correlator3D™ software to create different mapping products. The use of a high-end photogrammetry suite allows to generate highly accurate results. These include digital surface models (DSM), digital terrain models (DTM) as well as orthomosaics. Also, a canopy height model (CHM) of the survey area can be obtained by subtracting the DTM from the DSM. This can be easily achieved with the software's change detection module.



Interpretation



Interpreting the map data requires specific knowledge about forest management and remote sensing. The CHM can be used to delineate individual tree crowns and determine a precise tree count. The orthomosaics typically provide information about species, especially if non-visible wavelengths are used for the survey such as a near-infrared (NIR). If multispectral data are available, some diseases can be identified by calculating a normalized difference vegetation index (NDVI) or creating composite images (CIR) since vegetation has a strong reflectance in the near infrared wavelength.

Benefits

Advanced photogrammetry brings major advantages for forest monitoring. It is a solution that can be quickly deployed and gives forest managers vital information about the status of their forest. The height of trees and timber volume can be precisely calculated. Also, tree genus and species can be identified. It can assist the recognition and monitoring of diseases, as well as help preventing them. It can also be used for mapping canopy gaps and wildfire.



Next Steps

DISCUSS YOUR SPECIFIC
REQUIREMENTS WITH
OUR SPECIALISTS

SCHEDULE MEETING

