Worldwide No.1
WINTERSTEIGER
in field research equipment.

DELAIR
AERIAL INTELLIGENCE

Alteia

What is included in the „Delair package“?

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1. Fixed wing drone UX11AG

I. Mainpart → Brain of the drone
II. Two clickable wings
III. Camera → Heart of the drone
    I. Red, Green, Blue reflection
    II. Red edge reflection
    III. Near infrared light (NIR)

Hard facts UX11AG

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I.	Endurance	52 min	
II.	Weight	1,6 kg	3,5 lb
III.	Wingspan	1,1 m	3.6 ft
IV.	Cruise speed	54 km/ h	34 mph
V.	Flying range	47 km	30 m
VI.	Wind resistance	45 km/ h	28 mph
VII.	Backpack weight	14 kg with all accessories	
VIII.	Spectral bands	Red, Green, Blue	
		Red edge	
		NIR	

- Flight is pre planed on tablet
- Drone flies autonomously, without remote control

Delair afterflight tool

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1. Correcting GPS with PPK Process

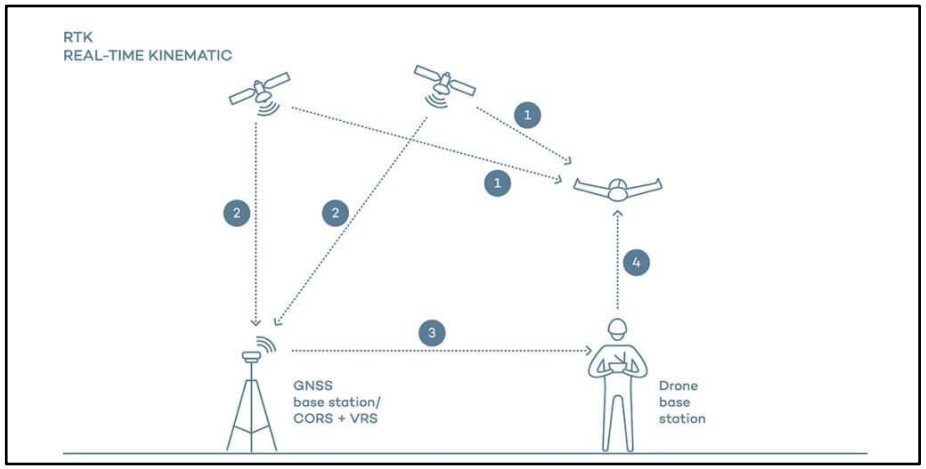
I. Pre select your pictures
II. Geo referencing
    I. GPS correcting of your pictures
        I. PPK (**P**ost **P**rocessed **K**inematic)

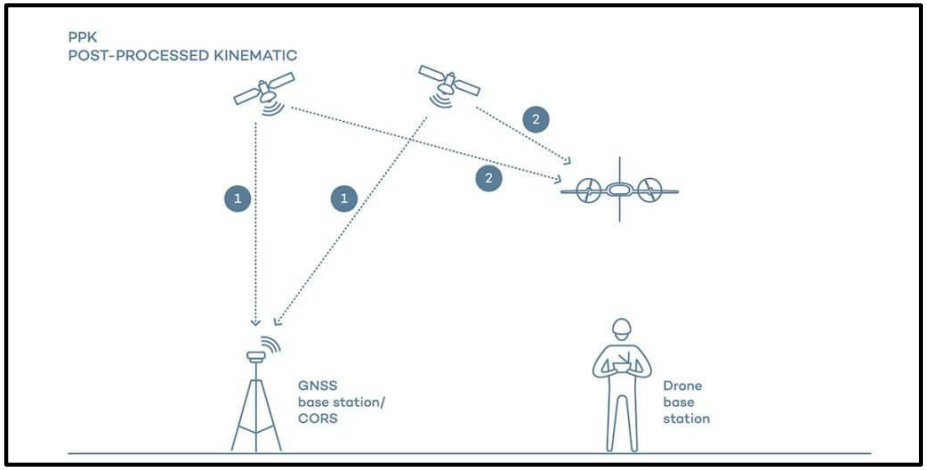
GPS correction

1. Real Time Kinematic VS. Post Processed Kinematic

I. Real time kinematic?
- ➢ GPS correction during a flight

II. Post processed kinematic?
- ➢ GPS correction after a flight





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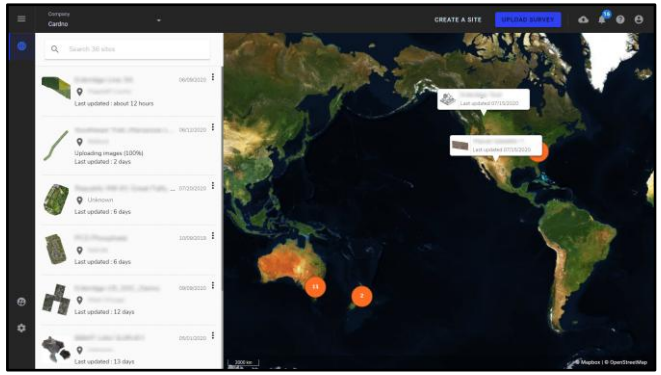
ALTEIA PHENOTYPING PLATFORM

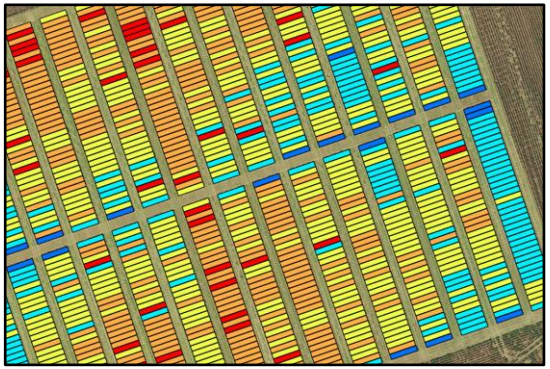
V2 – October 2021

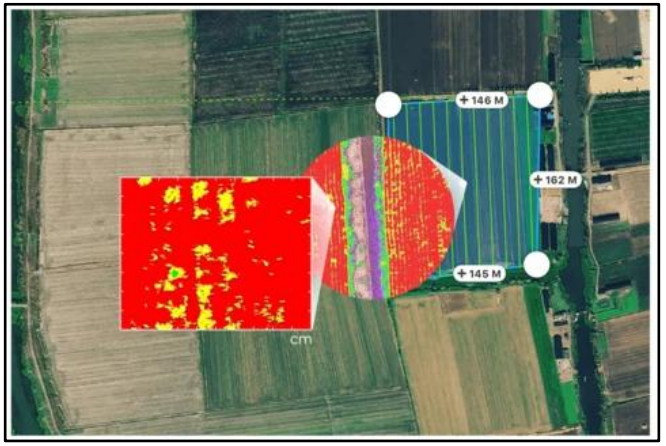
What is Alteia?

I. Visual intelligence end to end platform for agricultural field research
II. Matches perfect to the Delair system + many other different sensors

Alteia







Off the shelf analytics

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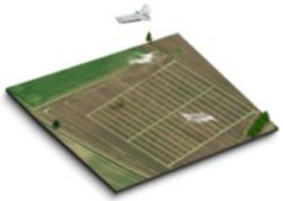
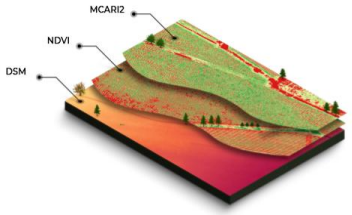


Photogrammetry and (custom) vegetation indices



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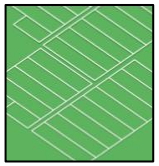
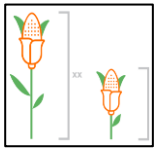


1. Microplot/Field vectorisation
Digitalize and georeference microplot boundaries

2. Row vectorisation
Detect, digitize and measure rows within fields: for guidance of machine – or as a basic for plant counting



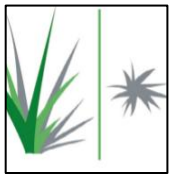
3. Plant Height
Estimate plant height for phenotyping

4. Plants and gaps counting
Detect and count plants and gaps

5. Flowering characterisation
Estimate % of flowering for row crops - canola and sunflower

6. Emergence Characterisation
Estimate % of green at early stage of crops to characterize seedling vigor

7. Stay green
A measure of a crop ability to stay a green growing plant in late-season plant



8. Fraction of vegetation cover (FCOVER)
A measure of the fraction of ground covered by green vegetation. Practically, it quantifies the spatial extent of the vegetation

9. Ear count in cereals
Detect and count ears in cereals

Vegetation Indices

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Index	What information is given ?
RGB – Bird view	Have a look at your field from above
NDVI (Normalized Difference Vegetation Index)	**Crop Vigor** : Map to analyse vigor, that is a mix of biomass development and crop health. The basic tool to scout for field anomalies.
NDRE (Normalized Difference Red Edge)	**Chlorophyll Content** : Map to analyse chlorophyll content, thanks to an index that correlates well with chlorophyll. The basic tool for nitrogen recommendation based on chlorophyll analysis.
VARI (Visible Atmospherically Resistant Index)	**Greenness** : Map to discriminate green plants from the remaining soil, or the intensity of the green.
MCARI2 (Modified Chlorophyll Absorption Index Ratio 2)	**Green Biomass** : Map that is a good predictor of green leaf area index to analyse biomass development.
Custom scouting maps	**Create and integrate your own vegetation index formulas**

Season planner

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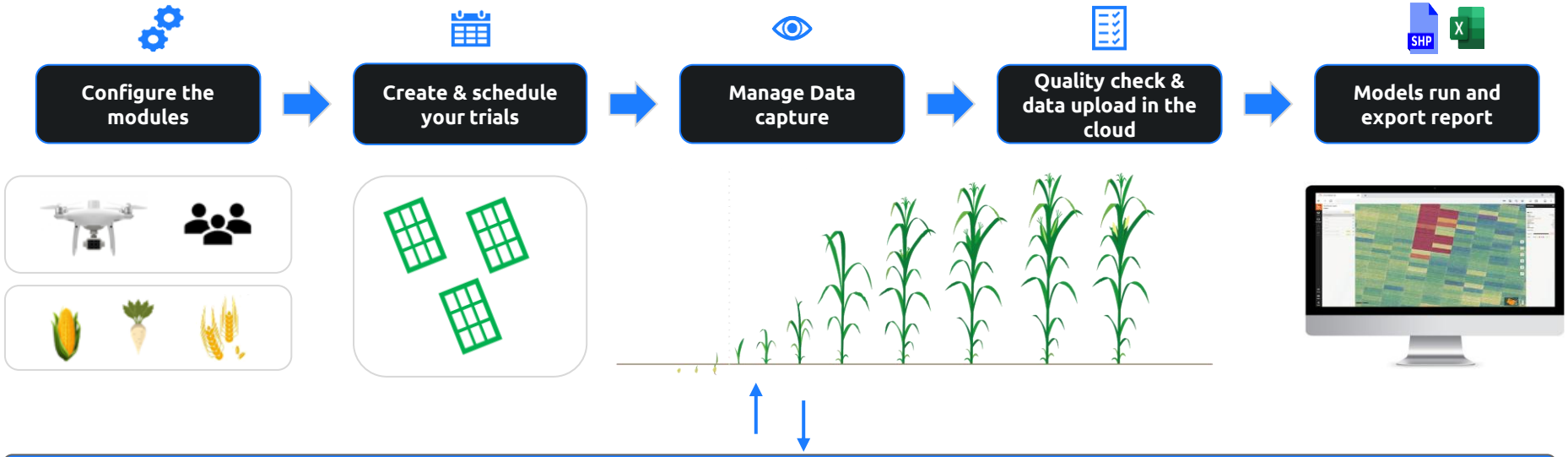
90% time saved in data management, thanks to the season planner tool and its planification & automation features :

- Standardise & deploy similar trial visualisation programs on every field
- Save time : define in low season your program : what to see, how, when … and automate the process : data transfer, flight parameter generation, analytics generation ...
- Data capture tool provide infield pictures quality check (works offline)



Internal use / Alteia knowledges