

"NDVI Remote Sensing: Matrice 100 AgroSENSE" Technology

NDVI: the importance

The demand for immediate action in the agriculture industry where timing is vital has become an essential need. Precision Farming has so far reasonably focused on the detail and the accuracy of the attainable results. In consideration of the fact that cultivations growth stages change at a very high speed and that factual, timely information is required in order to be able to promptly make the corrective decisions Analist Group has devised a revolutionary system: AgroSENSE.

AgroSENSE: timely and immediate NDVI

The main features of the AgroSENSE technology are:

- timely and immediate results
- processing simplicity and speed
- intuitive, simple workflow



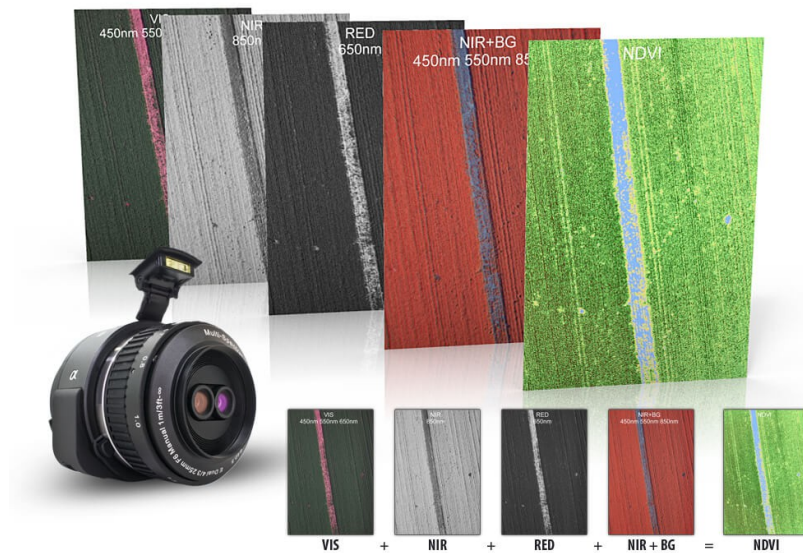
AgroSENSE workflow

How is the AgroSENSE approach different from other multispectral remote sensing imaging processing tools?

The agroSENSE objective is not the creation of a detailed orthomosaic. This feature is sublimely one if not the most important difference. In order to achieve immediate factual information the AgroSENSE technology allows for a much faster workflow.

With the new technology no massive quantity of frames is required, no overlapping thus no lengthy processing times. One simple photo processed by AgroSENSE in Analist 2016 CLOUD provides the NDVI index for a first immediate evaluation of the surveyed area. With the **AgroSENSE Matrice 100 Solution with the modified Sony QX1 Camera** we have the possibility to approach multispectral imaging with two frames of mind. The camera is of the most elevated quality and with its 20 megapixel resolution allows for traditional photogrammetric approaches with cm accuracy as well as for more higher elevation flights with fewer frames, thus extant detailed results.

This to say that with AgroSENSE the user can timely access vital information on macro-areas for first impact **timely evaluations**.



Application example

Procedure for data acquisition and NDVI map generation

- Site analysis and flight planning
- Flight execution and image acquisition
- Image processing with **Analist 2016 CLOUD AgroSENSE module for the NDVI generation**
- Targeted intervention planning (pesticides, fertilizers, etc.)

Technical details

- Flight with Matrice 100 equipped with the Agrowing modified QX1 camera
- Flight height: 50m or above
- Shooting sequence: not mandatory
- Flight time: 20 minutes
- Speed: 5m/s
- Surveyed area: about 8 hectares
- Data obtained: NDVI Map with professional report of the surveyed area
- Camera shooting settings: infinity focus type

	Analist 2016 CLOUD AgroSENSE	Traditional Photogrammetry
Flight frequency	In any period of plant growth (also every day)	In any period of plant growth (for continuous assessment processing times to be considered)
Flight height	Above 50 m	Up to 50 m
Minimum number of shots	One	In the range of 100s
Processing time	Few seconds	Hours
Results obtained	High detailed NDVI	High detailed NDVI

Benefits

- Immediate and timely
- Simple and fast processing
- Extant DSS
- Timely targeted interventions
- Time saving
- Resource saving

The AgroSENSE Matrice 100 Solution includes: the DJI Matrice 100 Drone + modified Sony QX1 camera + Analist 2016 CLOUD AgroSENSE module. [Click here to learn more](#)

The link below for further information on AgroSENSE

<http://www.analistgroup.com/en/drone-applications/agrosense-precision-farming>

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All techniques described in this document are to be considered as rule of thumb guidelines. Weather conditions, light conditions and other factors need to be taken into consideration.