ViSOAR Ag Explorer

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Raw UAS Imagery to Actionable Information

ViSOAR Ag Explorer provides an end-to-end solution for converting raw UAS imagery to actionable information. Farmers and farm consultants will be able to optimize the use of fertilizers and more finely control reseeding as well as the amount of pesticides and herbicides necessary to increase crop yield. Furthermore, farmers mitigate costs and losses by being able to spot problem areas, minimize the spread of plant diseases, and identify issues such as standing water, irrigation malfunctions, and persistent automated machinery errors in planting or cultivation. The technology proposed by ViSUS is part of a broad initiative in agriculture addressing the need for a 70% increase food production by 2050 in response to the projected growth of the world's population.

ViSUS
Task driven solutions
meeting needs in data management, analysis and visualization

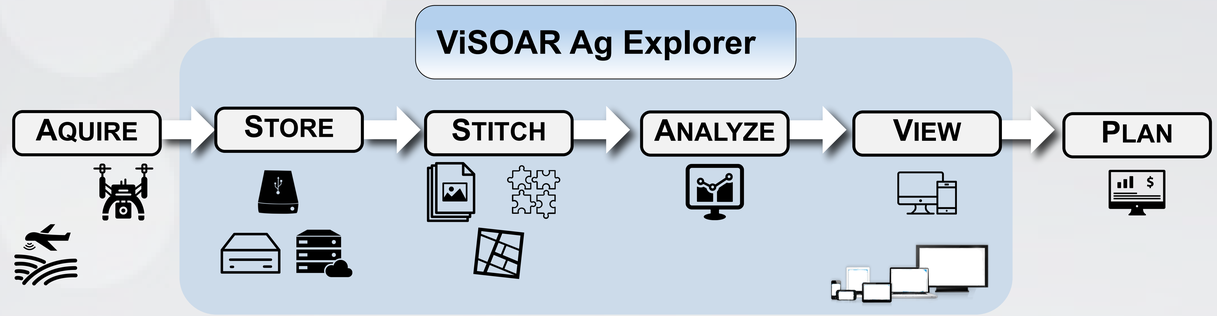
Farmers need to decrease input and increase yield

Currently 90% of fields are inspected by feet on the ground and eyes at 5' or 6' off the ground

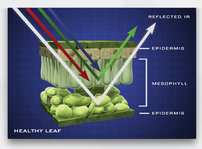
UAVs collecting aerial imagery are an attractive option for crop management

- Low cost per acre
- Frequent high-resolution imagery

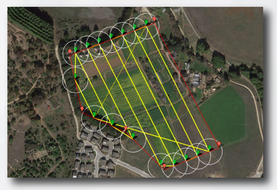
Solution: ViSOAR Ag Explorer Ecosystem



AQUIRE — Aerial Imagery from Sensors:



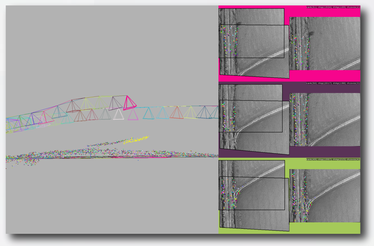
RGB:	visual inspection, elevation modeling, plant counting
NIR (near-infrared):	soil property & moisture analysis, crop health/stress analysis, water management, erosion analysis, plant counting
RE (red-edge):	crop health analysis, plant counting, water management
Multispectral:	both NIR & RE applications, except plant counting
Thermal infrared:	plant physiology analysis, water, maturity evaluation, yield

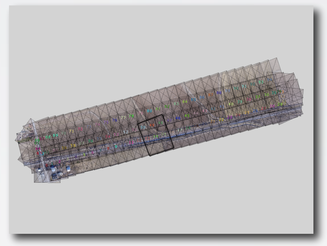


STORE — On a Server or Locally:

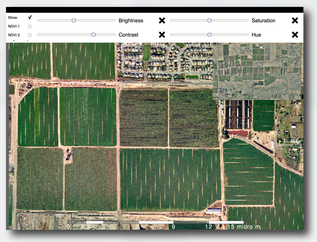
IDX file format and API provides progressive, fast reads and writes, locally or remotely.

STITCH — Images Into a Mosaic:

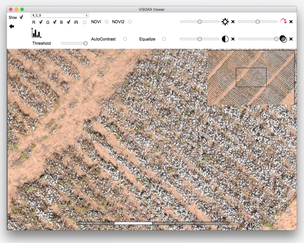


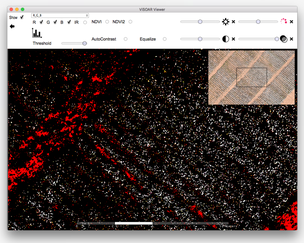


ANALYZE / VIEW — Normalized Difference Vegetation Index:



Towards Counting:





Conclusion:

- Enables farmers and crop consultants to decrease inputs and increase yields using aerial imagery.
- Eliminates the complexity, time, and labor involved in using massive image mosaics.
- Works with commodity hardware.
- Works with high-latency low-bandwidth networks in rural areas to lower the bar to entry.

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