GRYFN

REMOTE SENSING PLATFORM

THE GRYFN DIFFERENCE

In the past remote sensing platforms have failed to deliver what researchers really need...DATA and lots of it.

In a data-driven world, data is the fuel for deeper understanding, driving decisions, and determining action. Our remote sensing platforms empower plant breeders with cutting-edge, high-throughput phenotyping technologies to capture research-quality data and thus quantify genetic response to environmental variables and management practices. These insights in turn can drive improved product characterization, product placement, and customer success.

THE GRYFN ADVANTAGE

- Objectively capture multiple phenotype measurements at the same time.

- Quantify phenotypes that could only be observed previously.

- Enable spatial & temporal analysis of trials.

- Uncover insights and get a glimpse into G x E interactions
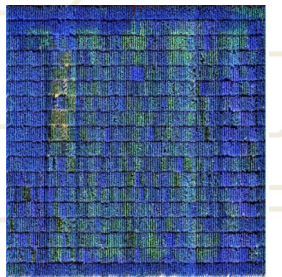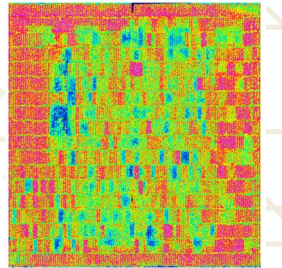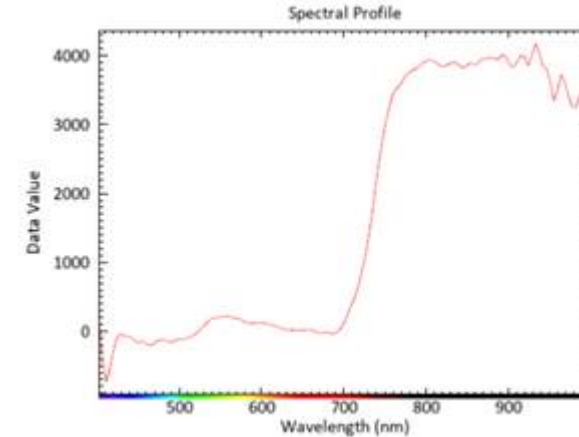
HARDWARE CONFIGURATION

- Multi-Modal UAV-based remote sensing platform

- Line-scanning hyperspectral camera

- 3D LiDAR laser scanner

- High resolution RGB camera

- Survey-grade GNSS-inertial system

STANDARD SENSORS

- Headwall Nano-Hyperspec
  - 400-1000nm 270 bands
  - 640 spatial pixels
- Velodyne VLP Series LiDAR Units
  - 16 or 32 channel configurations
  - 360-degree horizontal FoV
  - Various vertical FoV options
- Sony α7RIII Full-Frame Mirrorless Camera
  - 42 Megapixels
  - 1.5 second trigger interval
- Applanix APX-15L
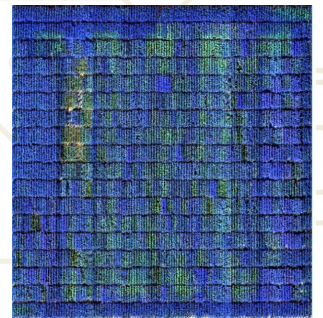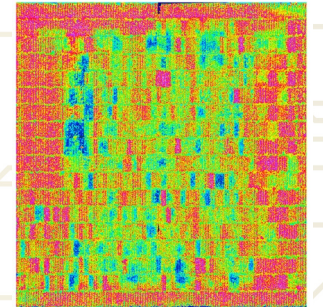 - Post-processed GNSS-Inertial solution accurate within 2-5cm

PRODUCTS- VNIR HYPERSPECTRAL

- Raw Data
  - Digital number or "DN" cubes

- Intermediate Data
  - Radiance cubes
  - Radiance flight lines
  - Radiance orthomosaic
  - Standard ENVI format

- Products
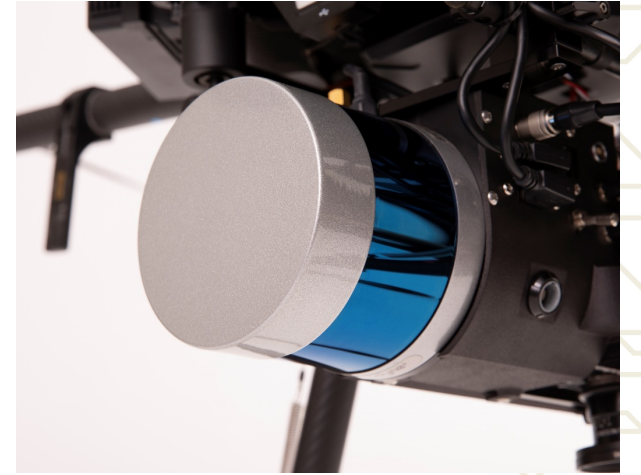 - Reflectance orthomosaic
  - Standard ENVI format
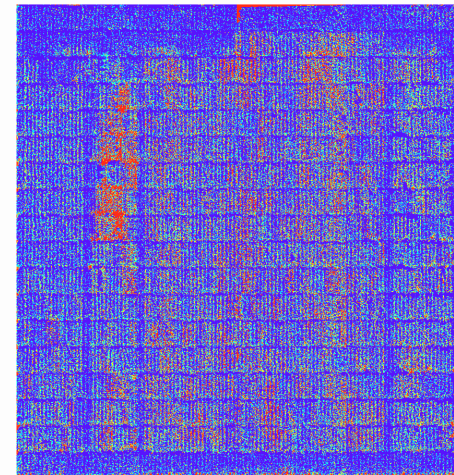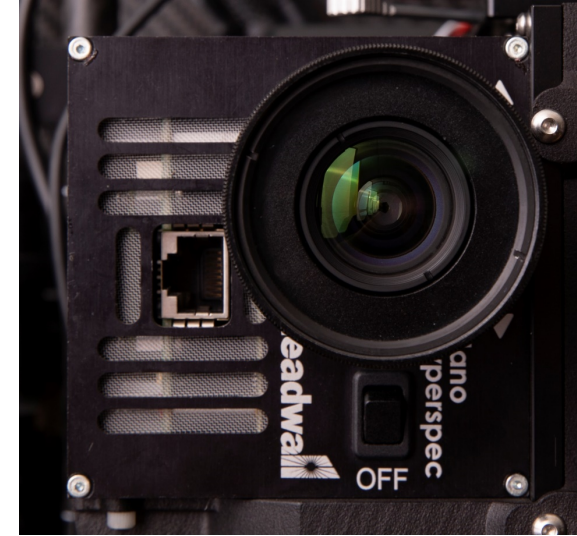
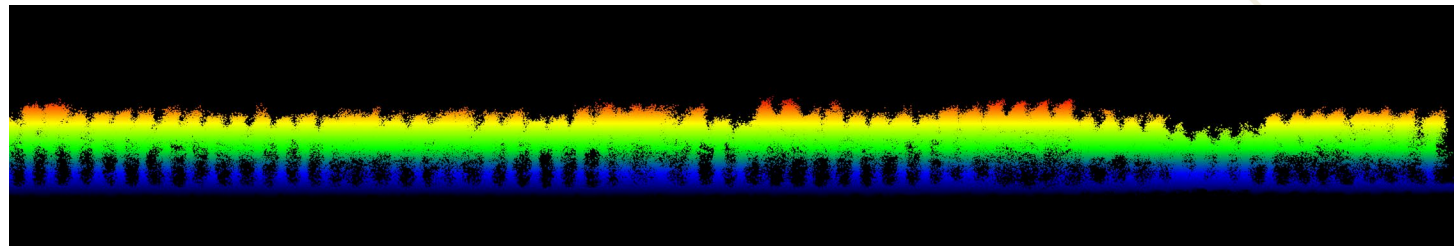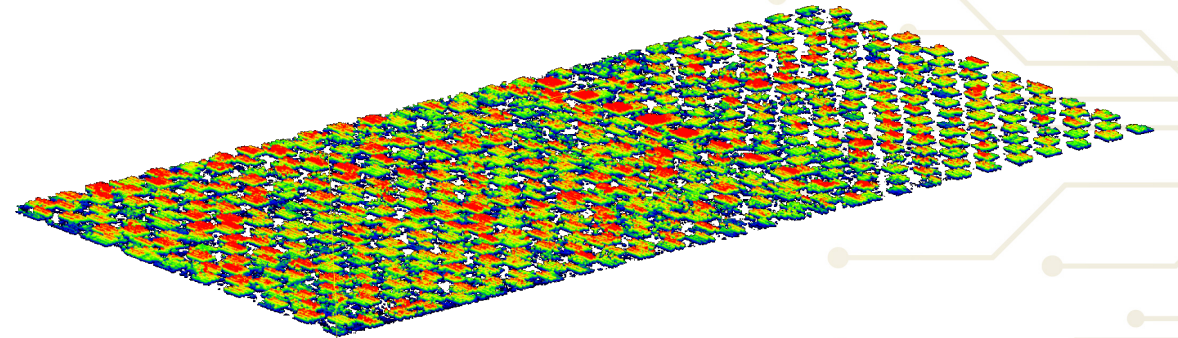Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA

PRODUCTS- LiDAR

- Raw Data
  - Range, azimuth, and intensity, and timing data
  - PCAP format
- Intermediate Data
  - Reconstructed LAS files
- Products
  - Digital surface model
    - TIFF, LAS, TXT formats

PRODUCTS- RGB

- Raw Data
  - ARW and/or JPEG images

- Intermediate Data
  - Pre-processed RGB images
    - (optional ARW to JPEG conversion with editing)

- Products
  - RGB orthophoto
   - TIFF format

20m Flight Alt. – 3mm

THIS IS JUST THE BEGINNING

GRYFN's remote sensing platform has the potential to unlock a number of plant breeding insights in the future.

- Disease resistance or susceptibility measurements
- Drought stress resistance or susceptibility measurements
- Heat stress resistance or susceptibility measurements
- Nutrient content measurements
- Emergence & Vigor measurements

- High throughput plant architecture measurements
- Leaf area measurements
- Leaf characterization measurements
- Biomass measurements
- Tassel detection, size and shape characterization
- Maturity measurements
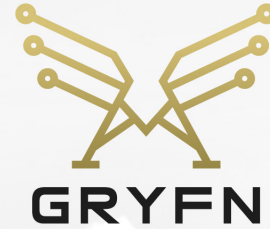
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FOR MORE INFORMATION