Simplot Relies on Airbus to Deliver Valuable Agronomy to Their Farmers

Case Study

Challenge

To provide agronomic insights and value through the use of satellite imagery and mobile technology.
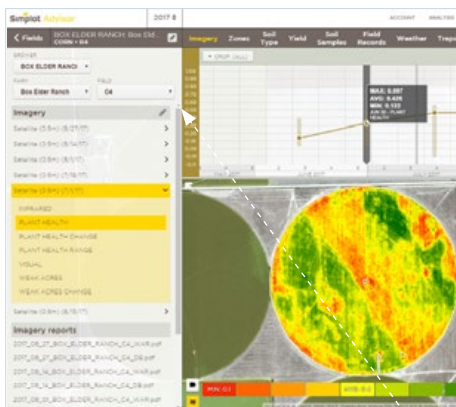
Solution and Results

A fully automated, scalable and integrated imagery processing engine for delivery of data driven agronomy into Simplot Advisor™ portal.

Benefits

A reliable system that allows Simplot to grow their business and support farmers in the field.

AIRBUS

> **" Satellite imagery is the backbone of our SmartFarm® Precision Agriculture platform. The high resolution, high frequency imagery we receive from Airbus enables our crop advisors to quickly respond with more agronomic insight to issues occuring in the growing season. "**
>
> Allan Fetters, Director of Technology
> J.R. Simplot Company

Challenge

Satellite imagery has been used since the 1970s to provide insight on crop health to farmers and agronomists. However, it has been viewed as nothing more than static, tricolored maps with minimal value for farmers. As GPS-enabled mobile devices grew in use and satellite imagery started to become more relevant with better imaging quality, frequency and resolution, then new solutions became possible.

Although the technology continued to improve, turning this data into valuable, timely agronomy that was easily scalable, remained a challenge for both agriculture retailers and farmers. As the advent of mobile devices began altering the historic imagery market and printed maps were no longer preferable, J.R. Simplot Company, one of the largest privately-held food and agribusiness companies worldwide, struggled to efficiently assist farmers in making sound agronomic decisions in this new digital era.

Solution and Results

Simplot and Airbus jointly developed a scalable, automated system to collect, process, analyse and digitally display satellite imagery from Airbus' Pléiades and SPOT6/7 constellations. This provides spatial

resolutions of 50cm to 6m and up to weekly temporal resolution. This imagery process has enabled Simplot's SmartFarm® Precision Agriculture team and agronomists to gain insight on their farmers' fields, such as:

- **Infrared** – Radiation reflectance from the plants surface in the Infrared spectrum.

- **Plant Health** – Infrared imagery converted to a standard vegetative index.

- **Plant Health Change** – The amount of plant health index change since the previous image.

- **Plant Health Ranges** – The standard plant health index divided into color ranges with a given color for each index value.

- **Visual** – A natural color photo.

- **Weak Acres** – The plant health index statistically devided into classifications at a 95% confidence level.

- **Weak Acres Change** – The amount of weak acres changed since the previous image.

These specific imagery derivatives began as a printed deliverable for Simplot's farm customers and became invaluable once the process was fully integrated into the SmartFarm® agronomic data portal Simplot Advisor™. Then the conversion from print media to digital took Simplot's imagery offerings to a whole new level. From field

enrolment to tasking to processing and display of imagery, each step became integrated and seamless. The digitisation of imagery also enabled Simplot to overlay other digital agronomic data layers (soil type, management zones, yield, etc.) and begin determining correlations within the data to facilitate agronomic decisions. The digital format also allows Simplot agronomists to use imagery on their mobile devices. This new ability to provide directed-field scouting over multiple imagery layers has proven to be a great agronomic tool and time saver.

Organisation Involved

The J. R. Simplot Company, a privately-held agribusiness firm headquartered in Boise, Idaho, has an integrated portfolio that includes phosphate mining, fertiliser manufacturing, farming, ranching and cattle production, food processing and food brands, plus other enterprises related to agriculture. Simplot's major operations are located in the US, Canada, Mexico, Australia, and China with products marketed in more than 40 countries worldwide. The company supports 4R Nutrient Stewardship – using the right source of fertilizer at the right rate at the right time and in the right place. For more information, visit www.simplot.com

Simplot

Benefits

- An unrivalled agronomic imagery useful time-saving tool for farmers and agronomists.

- Increase in the number of monitored fields and acreage thanks to reliability in image collection, imagery quality, automated processing and ease of use.

- Detailed change detection layers to farming advisors as a result of the precise spatial accuracy of processed imagery.

- Increased directed-field scouting revenue, due to imagery integration into Simplot Advisor™ and the ability to scout over imagery derivatives.

- Increased opportunities for value creation through the development of multiple imagery derivatives.

- Support for farmers in their daily work and decision making, fulfilling the SmartFarm® mission of delivering data-driven agronomy.

AIRBUS