

Spatial Image Digitizer to Improve Agricultural GIS

(2015-070)

Spatial Image Digitizer with Normalized Difference Vegetation Index and Soil Analyzing Capabilities

Market Overview

This spatial image digitizer (SID) provides not only normalized difference vegetation index (NDVI) data with true color imagery but can also indicate soil texture variability. From 2017 to 2018 there is a forecasted nearly twelve percent drop in farming net income in the U.S., making 2018 forecasted to have the lowest net income in over eight years. This decrease in net income will affect over two million farms in the U.S. with over 850,000 employees. Clemson University researchers have developed a spatial image digitizer (SID) to help farmers with growing crops and increase yields. The SID technology is specifically developed and marketed for agricultural management application. Prior technologies do not have options for digitized pixel outputs and require specialized cameras to collect NVDI data. SID solves these problems and can be used to determine soil qualities.

Technical Summary

The SID creates new methods for using GIS software in agricultural applications. It is designed to work with preexisting farm management technology, making it easier to incorporate. Created with people less experienced with global information systems (GIS) in mind, SID accessible to a wider range of people. SID's ability to analyze pixel brightness of soil images allows for data on soil texture variability, leading to improved development of management zones for precision agriculture. It allows for NDVI to be calculated from true color images, reducing the investment farmers need to put in to get their land surveyed by unmanned drones. The SID technology allows for more applications in a centralized bundle.

Application

Farming; GIS software

Development Stage

Provisional

Advantages

- Calculates NDVI from true color images, eliminating the need for more costly specialized cameras
- Determines soil texture variability from pixel brightness, enabling more accurate judgements on crop placement
- Works with satellite images, reducing the need for farmland to be surveyed with drones for soil analysis

App Type	Country	Serial No.	Patent No.	CURF Ref. No.	Inventors
Copyright Registration	United States		TXu 2-007-647	2015-070	Dr. Kendall Kirk

About the Inventors

Dr. Kendall Kirk

Precision Agriculture Engineer and Assistant Professor in the Edisto Research and Education Center at Clemson University

Dr. Kendall Kirk earned his Ph.D. in Biosystems Engineering from Clemson University. He is a member of several professional societies including the American Society of Agricultural and Biological Engineers, World Aquaculture Society, and Aquaculture Engineering Society. Dr. Kirk's research interests focus on precision agriculture, agricultural power and machinery, control systems, and computer modeling.



For more
information on this
technology contact:

curf@clemson.edu

Please put technology ID in subject line of email.