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# Cultivating Your Imagery for Better Crops



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Unknown to the non-agricultural sector, farms are businesses too, and need to be as efficient as possible. Along with soaring oil prices, farmers have also had to contend with soaring fertilizer prices – as well as fierce competition from overseas providers. Traditional farming methods are often unable to meet the growing demands and cost pressures, increasing the need for advanced technology to ensure optimum crop yield and quality. To increase efficiency of production, as well as output yields, farmers in first-world countries have turned to high-tech precision agriculture. Individual farmers and corporations implementing precision agriculture techniques not only reap cost savings benefits, but are also better equipped to meet the needs of the populations they serve.

Agriculture data management is different from other types of data management in the vast volume of data that is regularly analyzed. The Earth is constantly changing, and to have the most accurate understanding, the data must be collected often for the smallest segments of a specific area. Precision agriculture utilizes geospatial technologies, including global positioning (GPS), sensors, satellite, and aerial images and information management tools to assess and understand variations. Collected information may be used to precisely evaluate optimum sowing density, estimate fertilizers, and other input needs and more accurately predict crop yields. These techniques avoid applying inflexible practices to a crop, regardless of local soil and climate conditions, and may help to better assess local situations of disease or lodging.

## MAXIMIZING THE POWER OF PRECISION AGRICULTURE

MapShots provides crop management solutions for growers, crop consultants, crop insurance agents, independent fertilizer and chemical retailers, and farm supply cooperatives throughout the United States of America. MapShots understands a variety of field operation needs, providing the framework documenting the full spectrum of user needs, from those without technology to those implementing the most advanced technology. Some of MapShots customers include Southern States Cooperative, John Deere's AMS, Agri Services groups, and DuPont Pioneer Hi-Bred. Specifically, MapShots provides those in the agriculture industry the tools necessary for better crop planning, recordkeeping, and GIS/Precision Ag functionality. MapShots ensures field operations data is openly exchanged between all systems employed in agricultural production. Fertilizer has increased in price much the same way oil has in the past few years. For Southern States Cooperative, fertilizer dealers are scattered across the East Coast. MapShots' agriculture precision technology enables this company to manage these farmers' services remotely, with analytical understanding of the quantity yielded and sold to customers.
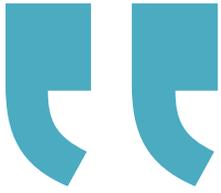
> Ultimately, the speed and performance that ERDAS APOLLO Essentials provides MapShots will enhance their customers' ability to access the most up-to-date imagery on-demand.

Recently, MapShots began exploring options for expanding their services through web mapping. Previously, customers utilizing MapShot's EASi Suite GIS software package operated entirely in the desktop environment. Providing their customers with massive amounts of USDA imagery, MapShots was regularly updating and delivering this data to their customers by DVD. Their customers then copied the imagery onto their desktop, using EASi Suite™ to then run the necessary processes and analytics on their areas of interest. By adding the option of a web mapping application, MapShots hoped to offer customers the added means to access and serve their imagery over the Internet, without abandoning desktop.

## INCORPORATING THE FASTEST IMAGE WEB SERVER

After exploring a number of web mapping applications, MapShots chose to implement ERDAS APOLLO Essentials. The program is a high-speed, specialized server application that efficiently distributes large volumes of geospatial image data. ERDAS APOLLO Essentials solves the infrastructure congestion problems associated with deploying large amounts of image data, enabling users to quickly access the information they need.

Several of the other solutions MapShots considered had problematic and expensive licensing issues and restrictions. Many farmers produce books of their maps each year, and the restrictive licensing practices of other applications did not allow this. Other options available to MapShots also forced the use of the imagery they provide, which is of low quality and/ or older for rural areas. The quality of imagery was paramount to MapShots customers. ERDAS APOLLO Essentials allowed MapShots to control their environment and quality of content by hosting their own imagery. MapShots could then maintain and update this information for all their customers regularly.

An added benefit of ERDAS APOLLO Essentials is that it does not require an SQL server database. The program seamlessly connects to MapShots' existing business applications, and is interoperable with their GIS-based core product. With Web Mapping Services (WMS), ERDAS APOLLO Ted Macy, President of MapShots commented, "Our customers are eager
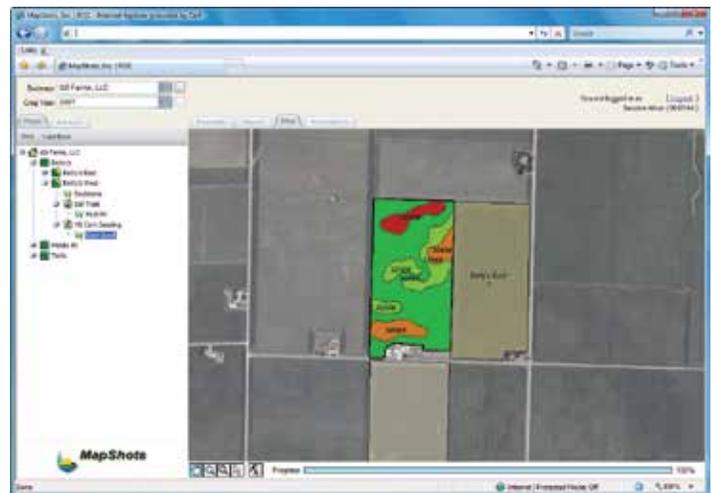


Mapshots' high-tech online agriculture application with imagery from ERDAS APOLLO Essentials

to implement the technology that ERDAS APOLLO Essentials provides. By offering the world's fastest web serving capabilities for massive amounts of imagery, ERDAS APOLLO Essentials has also opened doors to a number of new potential customers eager to further advance their investment in precision agriculture."

Ultimately, the speed and performance that ERDAS APOLLO Essentials provides MapShots will enhance their customers' ability to access the most up-to-date imagery on-demand. This faster access, combined with MapShots' powerful EASi Suite software ensures better precision agriculture, maximizing the potential of our Earth's resources and ability to cultivate the land to meet the needs of our ever-increasing population.

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