



GEOSYS
Growing agriculture

A leader in agronomic and satellite technology for more than 25 years

Satellite base crop monitoring and Big Data

Friday, October 13, 2017

AGENDA

- I. Introduction
- II. GEOSYS
- III. Feeding the world
- IV. Doing more with less
- V. Satellite technologies
- VI. Questions



Introduction

New PPT Template

- I have been with GEOSYS for just over three years
- Prior to GEOSYS I was with Topcon Precision Ag and GPS-AG
- My career has moved me through the precision ag market and evolution.
- My talk today will be outline some of the benefits of Satellite data and the potential improvements in production it can lead too.



Unique combination of capabilities







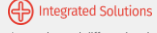
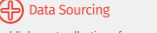
Global Operations with Local Insights




Cloud-based solutions from continent to field



Our Global Platform

PRODUCTS			
 <p>Agriquest™ GLOBAL MONITORING</p> <p>Single interface to analyze crops conditions throughout the world</p>	 <p>Croptical™ MONITORING APPLICATION</p> <p>Insightful solution with fresh, accurate, global field data</p>	 <p>Farmsat™ MAPPIER APPLICATION</p> <p>Industrial solutions to optimize inputs placement and increase growers' profit potential</p>	 <p>Bridge™ GEOSYS API</p> <p>Scalable, accurate and easily integrated APIs for your ag GIS custom applications</p>
SERVICES			
 <p>Integrated Solutions</p> <p>Innovative and differentiated solutions combining GEOSYS platforms and customer expertise</p>		 <p>Data Sourcing</p> <p>World's largest collection of weather data and satellite imagery</p>	





Satellite technology



Satellite Technology and Data

- Satellite data is every growing and unlocking more information
- Google Earth – Free and amazing
- There are multiple nations launching Satellites now and into the future
- Data is becoming more available
 - USA
 - China
 - Europe
 - Japan
 - Russia
 - Private cooperation's



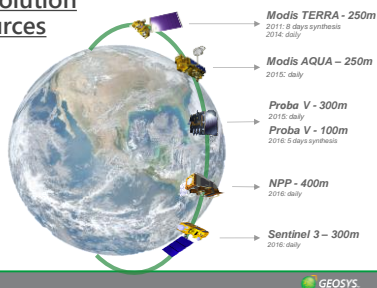


Satellite data

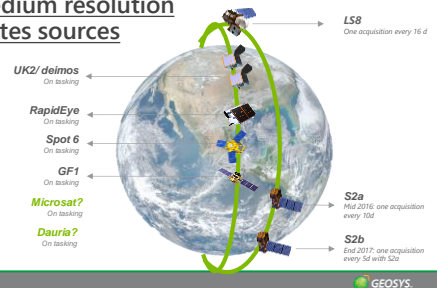
- What's it all mean
 - Wavelengths
 - Resolution
 - Frequencies
- With all these new Satellites the storage and filtering of data is required to really deliver to your needs



Geosys Low resolution satellites sources



Geosys Medium resolution satellites sources



Drones / UAVs



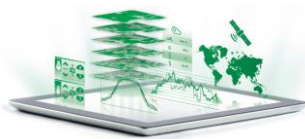
- Drones have there place in AG
- They are not new
 - GEOSYS experimented with Drones 15 years ago
- The core of Crop monitoring is scalability
 - Currently (never say never) drones don't meet the scalable demands of global crop monitoring
 - It would take 70,000 people daily to capture the data in the USA alone that GEOSYS covers.

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Drones / UAVs

- Drones have there place in the market
- Japan utilises drones for rice planting in remote rice patties
 - Japan times estimate nearly 2500 drones and in agricultural use
- Drones have been use it horticulture to count flower and then fruit to pre determine harvest size
- Currently Satellites cant do this – Never say Never

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Big Data ??

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What is big Data

- Farmer level big data
 - Moving from a note pad to a Smart device
 - Recoding yield against weather
- Corporate farm big data
 - Multiple farm production numbers
 - Multiple weather stations and climatic data points
 - Yield Vs input cost
- Government body big data
 - Regional production number
 - Export figures
 - Local and global climatic conditions

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Digital Agriculture

- Big Data is a very broad term
- Digital Ag is more descriptive and relevant
- Digital Ag really expresses the movement towards having a digital footprint for your fields
- Moving towards having a library of information on your fields that can be shared with your key advisors and colleagues

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Linking the world markets

- The internet has made the world a small place
- Information is live
- Traders know what has happened in crops as it happens
- Leverage this digital revolution to benefit your position



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GEOSYS Big Data

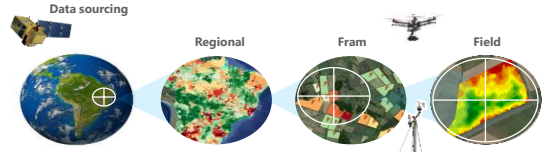
- Currently GEOSYS has 1 petabyte (PB) of satellite data available, live, real time
 - Equivalent to 1,000,000 pickup trucks of paper
- This grows daily by 300GB
- Storing and processing this data is key
- Data must be fast
 - Having 15 years of historical sat data and 30 years of weather data needs to be stored and managed
- The market wants information yesterday.



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Making Data meaningful

- Linking multiple sources of data is key
- Big picture down to high accuracy precision



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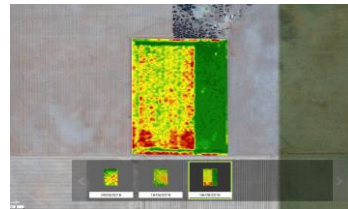
Making it all work for you

- Nitrogen application
- Insurance assessment
- Field assessment
- Validation of your knowledge



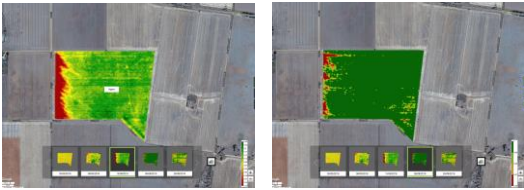
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Seeder application



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Chemical spray drift



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Feeding the world

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“Feeding the world will be the biggest challenge of this century.”



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Meeting the demand

By **2050**, global population will rise by about a third to **9 billion** people.....

But

Global calorie demand will increase by **50%**

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Doing more with what we have

- Productive land in a lot of the developing world is decreasing
 - Urban expansion
 - Poor farming practices
 - Environmental factors
- Managing what we have is the key
 - Understanding your fields
 - Understanding zones within you fields
 - Treating zones not the farm

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Cotton in Australia

- Australian cotton production has increased between 20 to 30% over the last 10 year
- Better genetics
- Better water
- Better management of soils



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Soy Beans in the USA

- USA produce around 100 million tons per year
- Increase by 1% per year



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Conclusion

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Wrapping things Up

- Satellite data is not the only tool
- Drones will have there place in the market and into the future
- Managing what we have is KEY
- Push the envelope on what can be produced sustainably and ethically on what we have
- More ground is not necessarily the answer



Questions



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Growing agriculture

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Thank you!