Using GPS, Guidance, and Variable Rate for Increased Profits

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Trimble Agriculture

- Designing Solutions to Improve Efficiency
  - Autopilot - Automated Tractor Steering <1”
  - TrueTracker - Automated Implement Steering <1”
  - Field Level - Automated GPS “3-D” Leveling
  - True Application Control
    - Variable Rate Fertilizer, Seed Drives, Etc
    - Rate Control
    - Automated Boom Switching
Trimble AgGPS Autopilot
Issues with Tractor Steering Alone
AgGPS TrueTracker
Customer Success

Vegetable Farm: Southern CA
Onions, Garlic, Carrots, Potatoes
Autopilot JD 9520/7530, Harvesters
TrueTracker planter/shaper, cultivator
Harvesting - Autopilot vs. Manual
- Autopilot (automated steering <1")
  - simultaneous implement steering
  - simultaneous 3-D (GPS) Land Leveling

- Two integrated GPS + GNSS Receivers
- integrated radio
- True Application Control
  - variable rate, rate control, boom switching, monitoring
Variable Rate Available in all Trimble Autopilot Displays

- VRA Variable Rate Application
  - Prescription import via SHP file
  - Single product control
  - Boom section control
## Display capabilities

<table>
<thead>
<tr>
<th>Feature</th>
<th>EZ-Guide 250</th>
<th>EZ-Guide 500</th>
<th>FmX</th>
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<tbody>
<tr>
<td>EZ-Steer</td>
<td>![Icon]</td>
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<td>May '09</td>
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<tr>
<td>Autopilot</td>
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<tr>
<td>TrueTracker Implement Steering</td>
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<td>Implement monitoring</td>
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<td>TrueGuide Implement Guidance</td>
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### Application Control

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<td>EZ-Boom</td>
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<td>3rd Party rate controllers</td>
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<td>Boom switching</td>
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<td>Variable rate serial output</td>
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<td>Planter monitoring and control</td>
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<td>Aircart/Seeding and NH3 control</td>
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<td>Liquid sprayer control</td>
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<td>Granular spreader control</td>
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<td>TruCount row control</td>
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### Water Management

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<td>Field Level II single scraper</td>
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<tr>
<td>Field Level II single scrapers with Autopilot</td>
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<td>Field Level II tandem or dual scrapers</td>
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### Information Management

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<td>Ag Manager / Cross Check</td>
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Trimble AgManager
AgManager Functions

- Locate vehicles/assets
- Mobile Alerts to Phone/Blackberry
- Vehicle History (where was it?)
- Site entry/exit alerts
- Moving/not moving alerts
Trimble AgManager

- Three components
  - CrossCheck hardware
    - Cellular Modem + GPS
    - Analog inputs
    - Mobile Data Terminal
  - Back-end server and communications that manages the data
    - Hosted in a highly secure environment
  - Trimble AgManager software
How it Works

1. Agricultural vehicles enabled with Trimble AgManager
2. Data transmitted to server using cellular network
3. Managers access the data from their PC via the Internet
Trimble Nomad

- Ruggedized Handheld with internal GPS
- Data collection
- Feature mapping
- Soil Sampling
- 3D Map View
- Shape file export

- Sync data between PC or EZ-Office Mobile
- Sync data to other Trimble displays
Trimble Connected Farm Community
Trimble Connected Farm Community

- Upload and securely share documents and records with many others like supply inventories, crop plans, application records, work orders in addition to Trimble field display data.
- Powerful user management allows the owner to extend access to the partners they choose.
- Powerful file versioning – ensuring that you have the most current file.
What does the Future Hold for GPS in Agriculture?
Injecting Drip Tape with GPS

Questions?