



**JOHN DEERE**

NOTHING RUNS LIKE A DEERE

# JOHN DEERE PRECISION AG TECHNOLOGY

YOUR GUIDE TO SMART FARMING SOLUTIONS



# FARM SMART, PROFIT' MORE



## YOUR JOURNEY TO MORE SUSTAINABLE AND PROFITABLE FARMING STARTS HERE.

Farming has never faced more challenges. The cost of seed, fertiliser and chemicals is increasingly volatile. The weather is more unpredictable and extreme. And the growing burden of environmental legislation is demanding new farm management practices and record keeping.

Whilst you cannot control the costs of inputs, the weather or government regulation, John Deere Precision Ag Technology helps you do more with less. It gives you new insights into your farm through the harvesting and analysis of field data for better, more informed decision-making.





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Displays  
JDLink™ connectivity  
John Deere Operations Center™

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AutoTrac™ Universal 300  
AutoTrac™ GREEN FIT  
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AutoTrac™  
AutoTrac™ RowSense™  
AutoTrac™ Vision  
AutoTrac™ Implement Guidance – Passive  
Active Implement Guidance  
Tractor Integrated Active Implement Guidance  
iGrade™



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## AUTOMATION SYSTEMS

AutoPath™  
 AutoTrac™ Turn Automation  
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 Active Fill Control  
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## MULTI-MAKE SOLUTIONS

All our components are interchangeable and even if your machine or implements aren't green and yellow you can still benefit from John Deere Precision Ag Technology.

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Section Control  
 Variable Rate Control  
 HarvestLab™ 3000



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## BEYOND BOUNDARIES

John Deere Operations Center™  
 Data Based Fertiliser Strategy  
 Machine Monitoring

# THE ESSENTIALS

4 TECHNOLOGIES TO START YOUR SMART FARMING JOURNEY



## DISPLAYS

Intelligent displays with simple menus and customisable screens.



## RECEIVERS

StarFire™ satellite receiver for highly accurate machine and implement guidance.

John Deere Precision Ag Technology is founded on four key components. Fully integrated they work together to provide a seamless experience. If you have bought a John Deere machine in the last few years you will already have the key components.



### **JDLink™**

JDLink™ provides two-way connectivity for the automatic uploading of crop and machine data to your John Deere Operations Center™ account. Best of all, the service is free.

### **JOHN DEERE OPERATIONS CENTER™**

The John Deere Operations Center™ connects you to your fields, machines, staff and advisors. It is your one-stop, secure space to plan, monitor, analyse, and share your farm data – anytime, anywhere. The Precision Ag Specialist at your local dealer can help set up your free account so you can start to unlock the full potential of your farming business.

# GUIDANCE

## PRECISION IN-FIELD STEERING OPTIONS

Our next generation StarFire™ 7500 Receiver brings a new level of accuracy to your farm. SF-RTK is similar to RTK, with +/- 2.5 cm horizontal pass-to-pass accuracy, but without the need for a separate network of base stations.







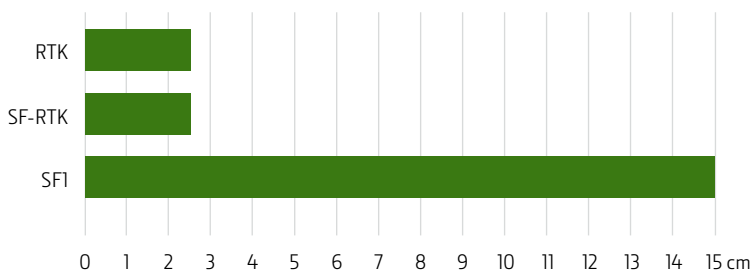
**RADIO RTK**

Radio RTK connects to one or more local base stations near your field for high +/- 2.5 cm horizontal pass-to-pass accuracy. This is a great solution in wide open terrain with good base station line of sight.

**MOBILE RTK**

Allows you to use RTK precision in difficult areas such as hilly terrain because there is no line-of-sight requirement to the base station.

**STARFIRE™ 7500 RECEIVER SIGNAL OPTIONS\***



**RTK:**  
Radio or Mobile RTK, +/-2.5 cm pass-to-pass accuracy, including 14 days RTK Extend™ if you lose line of sight or mobile network. Additional hardware and licence(s) are required.

**SF-RTK:**  
+/-2.5 cm pass-to-pass accuracy and 5 year repeatability. Requires licence, no additional hardware.

**SF1:**  
+/-15 cm pass-to-pass accuracy, free of charge.

The StarFire™ 7500 Receiver utilizes four GNSS satellite constellations (GPS, Galileo, BeiDou and GLONASS). They are corrected through the John Deere StarFire™ network to help maintain accuracy and performance.

The new SF-RTK signal provides our highest accuracy level with 5 years season-to-season repeatability.

Thanks to SF-RTK and RTK signals you will have confidence year on year that your field boundaries and guidance lines remain accurate. By knowing the exact placement of your products through each production step, you can increase your field productivity and optimize your crop production.



Universal or Integrated, you have the choice. We stay true to our promise of being compatible with most brands and models. The StarFire™ Universal Receiver can be easily transferred to different equipment on your farm.

More and more, recent John Deere machines can be equipped with StarFire™ Integrated Receiver.

\*Those 3 signal options are also available for the StarFire™ 7000 Receiver.

# DISPLAYS

## HIGH-DEFINITION FARMING IS HERE.

Information has never looked this beautiful. Our new G5 Displays bring high-definition viewing to your cab. Experience the benefits of the larger and faster display, no matter the job. They're also pre-loaded with plenty of productive features and you can add additional functions for more advanced applications.

On top, Gen 4 and G5 Displays share the same reliable and user-friendly interface.

### G5<sup>PLUS</sup> COMMANDCENTER™/ UNIVERSAL<sup>1</sup> DISPLAY

- Large, 32.5 cm (12.8 in) touchscreen display with 1080p High Definition resolution
- 3x faster processor than previous models, for quicker cold boot times
- Permanent AutoTrac™ and Section Control licence included

### G5 COMMANDCENTER™/ UNIVERSAL<sup>1</sup> DISPLAY

- 25.6 cm (10.1 in) touchscreen display with 1080p High Definition resolution
- 3x faster processor than previous models, for quicker cold boot times
- Permanent AutoTrac™, Section Control and AutoTrac™ RowSense™ licences available



**1080P HIGH  
DEFINITION  
35% LARGER  
75% FASTER**



<sup>1</sup> Universal displays are detachable and can be moved to compatible machines. They are IP65 compliant and can be used on machines with open operator stations.

### G5<sup>PLUS</sup> EXTENDED MONITOR

- Large, 32.5 cm (12.8 in) touchscreen display with 1080p High Definition resolution
- Reduces swiping between different pages on main display so you can monitor all core functions easier and make faster adjustments as necessary
- Range of mounts available and connecting power supply points



### SOFTWARE PACKAGES

G5<sup>PLUS</sup> Displays are available with all the applications you need to begin your smart farming journey. You can unlock additional technologies with the Advanced Licence package for either 1 or 3 years, so you only pay for what you need.

### G5 COMMANDCENTER™ G5 UNIVERSAL

#### INCLUDED

- Documentation
- Data Sync
- Variable Rate Application
- AEF ISOBUS conformance

#### PERMANENT LICENCES, ONE-TIME PAYMENT

- AutoTrac™
- Section Control
- AutoTrac™ RowSense™/Vision
- AutoTrac™ TIM

#### TIME BASED LICENCE, RECURRING PAYMENTS G5 ADVANCED PACKAGE:

- AutoTrac™ Turn Automation
- AutoPath™
- Machine Sync\*
- AutoTrac™ Implement Guidance\*
- In-Field Data Sharing

### G5<sup>PLUS</sup> COMMANDCENTER™ G5<sup>PLUS</sup> UNIVERSAL

#### INCLUDED

- Documentation
- Data Sync
- Variable Rate Application
- AutoTrac™
- Section Control
- AEF ISOBUS conformance

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- AutoPath™
- Machine Sync\*
- AutoTrac™ Implement Guidance\*
- In-Field Data Sharing
- SF-RTK\*\*

\* Machine-specific feature – not available for all machines.  
\*\* Optional package for all machines with integrated receiver.

# JDLINK™ CONNECTIVITY



## WIRELESS DATA CONNECTIVITY IN THE FIELD

JDLINK™ provides two-way connectivity for the automatic uploading of crop and machine data to the John Deere Operations Center™. With your permission your dealer can also use JDLINK™ to remotely monitor your machines in real-time. This allows them to advise on performance optimisation and provide in-field support with machine set-up through Remote Display Access.

JDLINK™ is included with all new machines.

## UPGRADE OPTIONS

If your machine is not equipped with our latest modem, there are two different upgrade options available for both older John Deere machines and other brands of equipment. Please ask your dealer to check the compatibility of your machine.



### OLDER JOHN DEERE MACHINES WITH AN MTG

The JDLink™ R Modem is the ideal upgrade for John Deere machines with the previous generation MTG (Modular Telematic Gateway). You'll enjoy faster data transfer and will always be a step ahead thanks to better monitoring of your activities and Machine Sync functionality (see page 42).

### OLDER JOHN DEERE MACHINES WITHOUT MODEM AND OTHER BRANDS

The JDLink™ M Modem is a cost-effective alternative to the R Modem for John Deere machines without an MTG and other brands of equipment. Easy to install in less than 15 minutes, the built-in antenna means you can connect and manage all your different brands in your fleet using the John Deere Operations Center™.



# JOHN DEERE OPERATIONS CENTER™

DATA IS THE FUEL FOR YOUR OPERATION

Securely storing all your machine and crop data the John Deere Operations Center™ is a powerful farm management tool.



## THE JOHN DEERE OPERATIONS CENTER™ FOR MONITORING AND MANAGEMENT

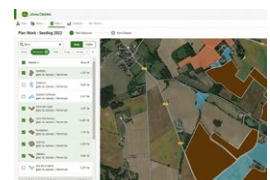
Accessible from any device, you can provide temporary permissions for seasonal workers as well as access to external partners such as your agronomist and dealer. Data can also be shared with more than 200 smart farming software partners allowing you to combine other field information such as soil analysis to support better decision-making.

## SETUP AND PLANNING, MONITORING AND ANALYSIS



### JOHN DEERE OPERATIONS CENTER™ MOBILE

A powerful app that lets you monitor your machines in real-time.



### WORK PLANNER

Prepare work in the office. Send the set-up data to the machine in advance so the operator will have all needed information to get started.

**DEALER**

Service ADVISOR™ Remote allows remote analysis of potential issues and Expert Alerts adds predictive maintenance for better uptime.



**200+ SOFTWARE PARTNERS**

Many independent software providers can share their data with the Operations Center and vice versa, so you can manage everything on a single platform.



**EMPLOYEES AND SPECIALISTS**

Employees and business specialists such as agronomists can be given access to help improve machine productivity and crop and field analysis.



**JOHN DEERE OPERATIONS CENTER™**



**THIRD PARTY DATA SHARING**

**FIELD APPLICATIONS**



**VARIABLE RATE SEEDING**

No more overlaps or misses, saving expensive seed and avoiding over-planting.



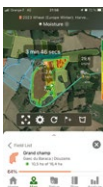
**MANURE SENSING**

Precisely apply N, P and K based on a nutrient target with site-specific prescription maps.



**SECTION CONTROL AND SPOT SPRAYING**

Avoid over-spray by applying the exact crop protection where it's needed.



**FLEET MANAGEMENT**

Cut phone calls with your drivers by 50%+ as everyone can see each other's location.



**REMOTE DISPLAY ACCESS**

Remotely access in-cab display to assist operators with machine set-up and optimisation.



**AGRONOMIC OPTIMISATION**

Easy-to-use field analyser tool for better agronomic decision-making and improved yields.

# GETTING STARTED

The foundation for all your guidance and future precision farming applications is accurate field boundaries.



There is no getting away from it, this takes time. The good news is you only have to do it once. The data is then stored on the John Deere Operations Center™ and can be used for all your applications throughout the farming year.

The most accurate way to create digital boundaries is to drive your StarFire™ equipped Gator™ or tractor along the edges of each field. For the best possible accuracy this should be done using the SF-RTK or RTK signal. There is a built-in guide in the display that will take you through the set-up which is easy to follow, or you can ask the Precision Ag Specialist at your local dealer who may offer a boundary mapping service.

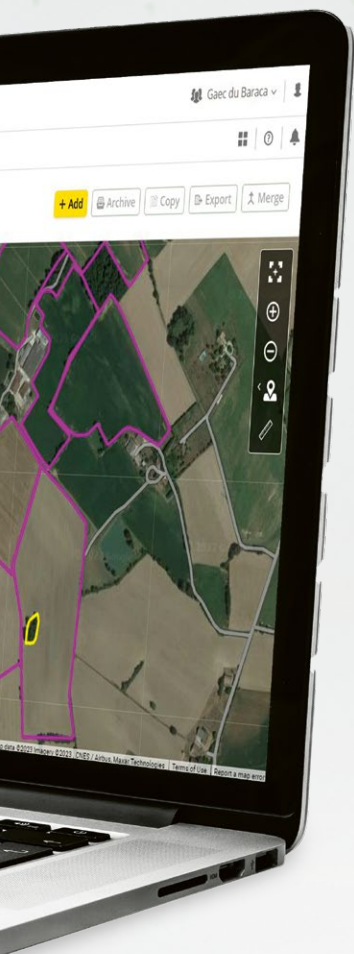


# SET UP ONCE. USE THE DATA FOREVER

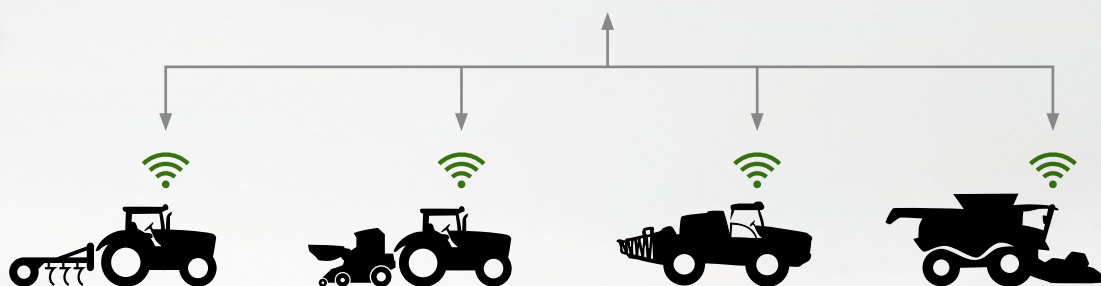
Thanks to Data Sync all your field data is shared across all of your machines, minimising set-up time when it comes to starting a new application.

Data Sync works the same as your smartphone and other devices that use Google Android or Apple iOS. If you make a change to a contact or diary entry, it is automatically updated across all devices via a cloud server.

The John Deere Operations Center™ performs the same role, updating the displays on all John Deere machines and those of other brands automatically\*. Make a change in the combine display... and it's automatically uploaded on your tractor's display. Data Sync reduces the possibility of mistakes as the same data is shared across all machines and doesn't rely on individual operator entry. What's more, you can also share the field information with contractors via the Operations Center.



Data Sync synchronises clients, farms, fields, field boundaries, guidance tracks, operator details and much more.



**GET JOHN DEERE  
OPERATIONS CENTER™  
NOW, FOR FREE**



Apple



Google Play

\*Data Sync requires a Gen 4 (CC4200, CC4600 V2, 4640, 4240) or G5 Displays Series with the latest software updates available, JDLink™ connectivity service active and a John Deere Operations Center™ account. We recommend reaching out to your John Deere local dealer for recommendations.

# THE FARMING YEAR



## CONTINUOUS IMPROVEMENT THROUGHOUT THE AGRICULTURAL CYCLE

John Deere Precision Ag Technology supports your operation throughout every step of the farming year. You'll be able to track and manage how you prepare the field, plant and seed your crop and then protect and nurture it as it grows. When it comes to the harvest, our technology can provide valuable information on yields and crop quality. This will help you plan for the following year as part of a process of continuous learning and improvement.



## A SIMPLE TRANSITION TO SMART FARMING

James Dyer runs a cattle farm in the UK with around 800 head of cattle and grows almost all his feed. He's a big fan of the basic John Deere Precision Ag Technology capabilities, setting up field boundaries and guidance lines for AutoTrac™ in the John Deere Operations Center™. During recent harvests he could see some significant differences in the yields throughout his fields, but wasn't sure what to do with the information. After a training session on the Operations Center at his local dealer James decided to make a small upgrade to his seed drill to enable variable rate applications.



## INSTANT RESULTS

Where yields were lower James increased the amount of seed, using around an extra 30 kg per ha. The results speak for themselves with fields averaging around 10 t/ha and up to 17 t/ha in places. Quick to realise the benefits this could bring him he is now carrying out soil sampling and resistivity measurements to understand how he can benefit from variable rate fertiliser applications.

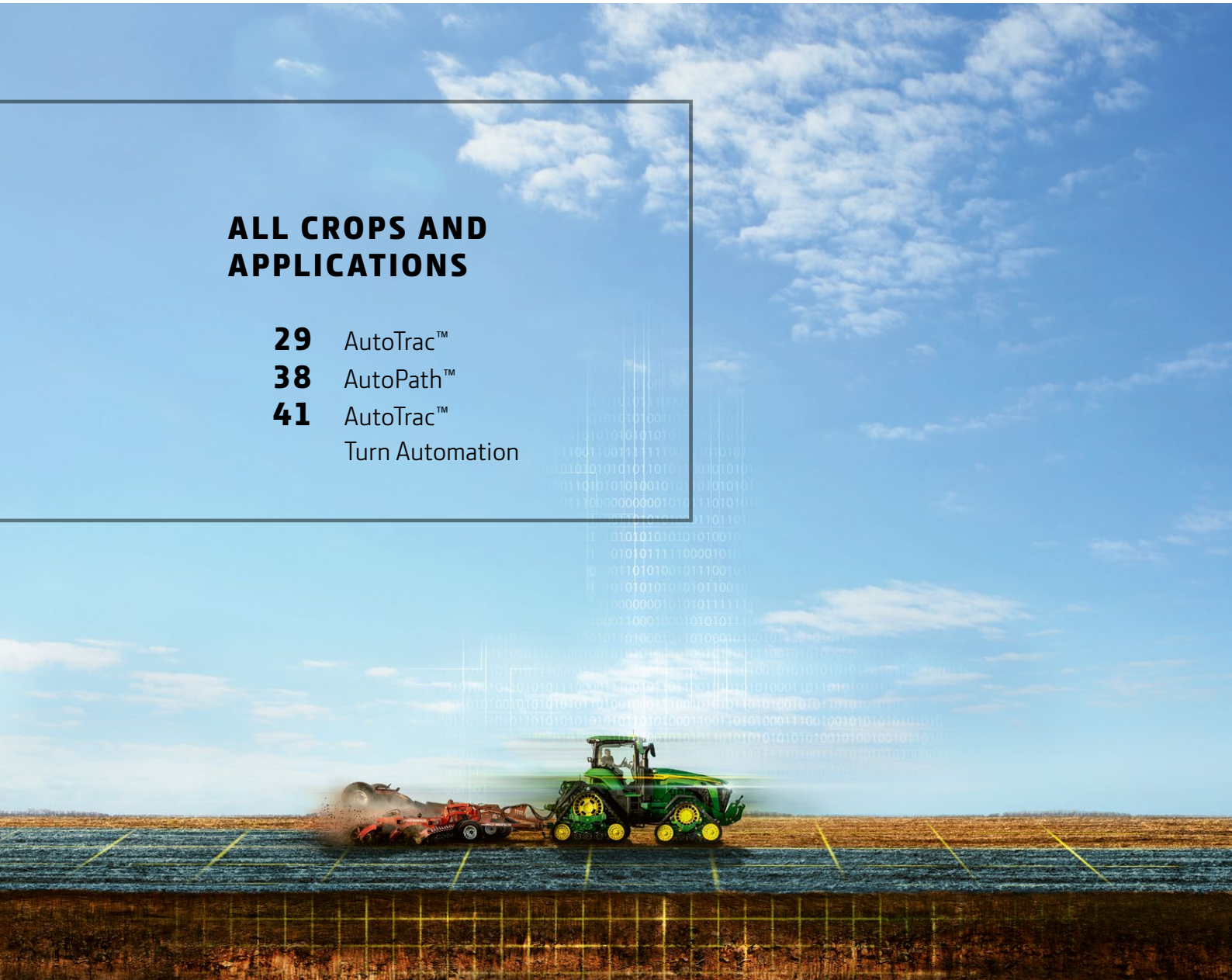
# PREPARE

## CREATE THE BEST POSSIBLE SEEDBEDS

Deep, shallow or minimum tillage? Whatever your production system, accurate guidance improves seedbed preparation, minimises soil compaction and guarantees a great result every time. You'll pull implements faster and save time without leaving gaps.

### ALL CROPS AND APPLICATIONS

- 29** AutoTrac™
- 38** AutoPath™
- 41** AutoTrac™  
Turn Automation





# PLANT & SEED

## GIVE YOUR CROPS THE BEST POSSIBLE START

John Deere Precision Ag Technology puts the right seed in the right place at the right depth for successful germination. Easy to use and fast in the field it helps you plant your crop at the perfect time for a successful future harvest.

### AIR SEEDER AND CORN PLANTER

- 29** AutoTrac™
- 38** AutoPath™
- 41** AutoTrac™  
Turn Automation
- 48** Section Control
- 49** Variable Rate Control

### SPECIALTY CROP PLANTING

- 09** RTK
- 29** AutoTrac™
- 32** AutoTrac™ Implement  
Guidance – Passive
- 33** Active Implement  
Guidance



# PROTECT & NURTURE

## MAXIMISE YOUR CROP YIELDS

John Deere Precision Ag Technology applies exactly the right amount of care to let your crop reach its full potential. Our solutions help you with everything from high speed mechanical weeding to precise application of crop protection products and fertiliser.

### SPRAYER, MINERAL FERTILISER AND SLURRY APPLICATIONS

- 29** AutoTrac™
- 38** AutoPath™
- 48** Section Control
- 49** Variable Rate Control
- 53** Manure Sensing

### MECHANICAL WEED CONTROL

- 09** RTK
- 29** AutoTrac™
- 33** Active Implement Guidance
- 34** Tractor Integrated Active Implement Guidance
- 38** AutoPath™

# HARVEST

## BOOST YOUR HARVEST POTENTIAL

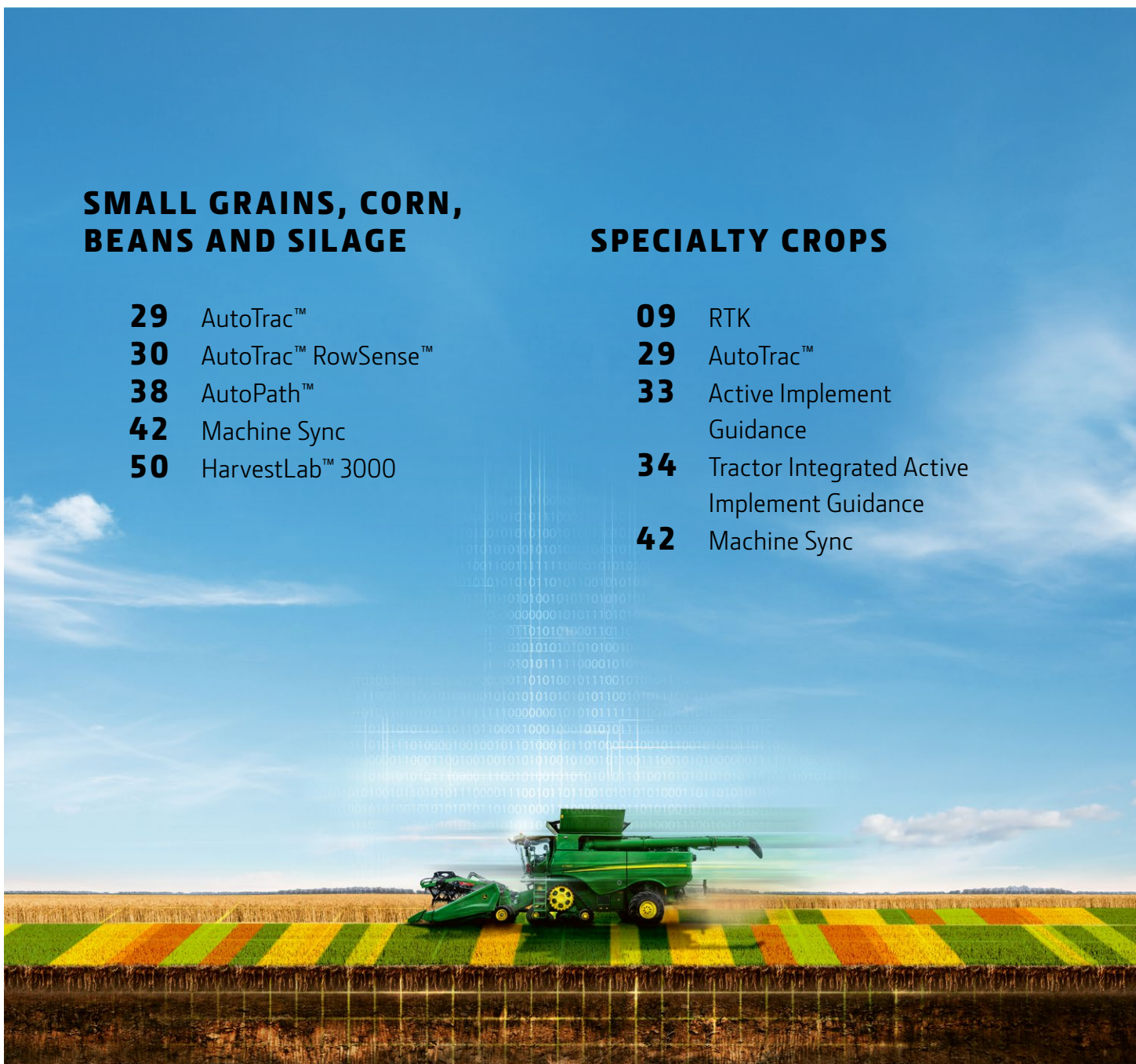
Harvest at higher speed with a full header width. Make decisions on the go based on real-time crop analysis. Harvest valuable data for yield analysis and planning next year's seed and planting. John Deere Precision Ag Technology will take your harvesting to the next level.

### SMALL GRAINS, CORN, BEANS AND SILAGE

- 29** AutoTrac™
- 30** AutoTrac™ RowSense™
- 38** AutoPath™
- 42** Machine Sync
- 50** HarvestLab™ 3000

### SPECIALTY CROPS

- 09** RTK
- 29** AutoTrac™
- 33** Active Implement Guidance
- 34** Tractor Integrated Active Implement Guidance
- 42** Machine Sync



# GUIDANCE SOLUTIONS

## PRECISION IN-FIELD STEERING OPTIONS FOR MACHINES AND IMPLEMENTS

We have a steering solution for almost every type of machine and implement. Even if you're not running a John Deere machine there's a range of options to suit different budgets and requirements. Just ask your John Deere dealer to help you get started.







# AUTOTRAC™ UNIVERSAL 300

## + YOUR BENEFITS

- Enjoy premium John Deere guidance across mixed fleets
- Less than 30 minutes machine-to-machine transfer time
- Minimum speed of only 0.5 km/h
- Water and dust resistant
- Fast line acquisition

AutoTrac™ Universal 300 is multi-brand, automated steering solution that fits more than 600 different machines, from older John Deere models to alternative brands. It's not only easy to install and use, it's extremely robust and reliable and is even approved for open operator station tractors. ATU 300 can be operated at speeds down to 0.5 km/h. What's more, transfer to another machine take less than 30 minutes.



### EASY TO FIT

ATU 300 is well proven and can easily be transferred between machines.



# AUTOTRAC™ GREEN FIT

This third-party interface from our partner REICHHARDT® brings AutoTrac™ fully integrated steering to other machine brands. It utilizes many of the existing guidance ready components, allowing you to enjoy AutoTrac™ without the need to fit a different steering wheel or various controller components. Using the same monitor and interfaces as AutoTrac™ on a John Deere machine, the AutoTrac™ GREEN FIT solution eliminates the need for user training when switching between different brands of equipment.

## **+** YOUR BENEFITS

- Brings automatic steering to non-John Deere brands
- Doesn't require extensive machine conversion
- Approved by John Deere
- Fitted at your nearest John Deere dealer



## **PLUG AND PLAY INSTALLATION**

GREEN FIT from REICHHARDT® is connected to the vehicle's steering interface and communicates directly with the machine's systems via ISOBUS. The components of each kit are slightly different depending on the make and model.



# AUTOTRAC™ TIM

## YOUR BENEFITS

- Perfect solution for operators of mixed fleets
- Enjoy fully integrated AutoTrac™ steering
- JDLink™ connectivity
- Connects to the John Deere Operations Center™
- Easy installation

AutoTrac™ TIM (Tractor Implement Management) is a fully integrated guidance system that is currently available for tractors that are certified for AEF TIM guidance\*. All it requires is a StarFire™ receiver and a John Deere display which connects directly to the tractor's AEF TIM interface. This doesn't just give you the same AutoTrac™ experience as if you were driving a John Deere machine, it also gives you JDLink™ connectivity to the John Deere Operations Center™ for all your work planning and documentation.

\* At the printing time of this document, FENDT, Case IH and New Holland have some tractor models certified in the AEF Database for TIM guidance curvature. Please always check the compatibility of a specific model in AEF database and reach out to your John Deere dealer.





# AUTOTRAC™

AutoTrac™ handsfree steering boosts your productivity while reducing input cost on fuel, fertiliser and crop protection products. Depending on the application you can expect input savings of up to 8%\* and productivity increases of up to 14%\*\* . Jobs can be set-up in advance on the John Deere Operations Center™ using Work Planner and when you enter the field it can now start automatically. What's more, the Data Sync feature shares the guidance lines and all setup data across all your machines for faster, error-free work.

\* From "Lohnunternehmen" 1/2010  
 \*\* From "Landtechnik" 6/2006

## **+** YOUR BENEFITS

- Work faster with higher in-field speeds
- Save on fuel, fertiliser and seeds
- Set up once with RTK, use year after year





# AUTOTRAC™ ROWSENSE™

## + YOUR BENEFITS

- Automatic guidance for corn rows for combines and forage harvesters
- Improves harvest efficiency even in challenging conditions
- Improves yield quality
- Reduces operator stress

Down corn, curves or simply harvesting a field with uneven row spacing because it has been planted without AutoTrac™, John Deere AutoTrac™ RowSense™ helps you stay in the right row. Designed for AutoTrac™ ready combines and forage harvesters it brings together data from row sensors on the header and satellite data. This means that even in spots without crop, when the sensor is unable to detect a crop row, it will still keep the harvester on track.





# AUTOTRAC™ VISION

AutoTrac™ Vision gives you all the benefits of fully automated steering in fields planted without guidance lines. You'll be able to work at speeds of up to 30 km/h with reduced crop damage. The system uses a front-mounted camera that can identify early-season corn or grain that's at least 10 cm high. It will even work with a slurry tanker in early season corn, as soon as the plants are at least 20 cm high.

## + YOUR BENEFITS

- Brings automated steering to fields planted without a guidance system
- Reduces crop damage
- Enables working speeds up to 30 km/h
- Cover 20% more hectares per day

## WORK FASTER

AutoTrac™ Vision compensates for uneven rows due to planter drift, or if the crop was planted without guidance. The combination of a camera image and auto-generated A-B guidance lines will help you cover 20% more hectares per day when spraying or weeding.



# AUTOTRAC™ IMPLEMENT GUIDANCE – PASSIVE

## + YOUR BENEFITS

- Perfect path to path accuracy in sloping terrain with pull-type implements
- Less operator stress
- Consistent placements of inputs for optimal crop growth
- Easy to install

AutoTrac™ Implement Guidance – Passive, compensates for implement drift on slopes and uneven terrain. It ensures you'll get consistent pass-to-pass accuracy for all your tillage, seeding and planting operations. The system uses an additional StarFire™ receiver mounted on the implement which is linked to the tractor's StarFire™ receiver. The implement receiver detects any difference of its own position versus the tractor receiver's position and the tractor changes its path to compensate for the implement drift, ensuring perfectly aligned rows.







## ACTIVE IMPLEMENT GUIDANCE

When the highest accuracy is essential, Active Implement Guidance (AIG) ensures that tractor and implement follow exactly the same path, ruling out crop damage on subsequent passes. The system works with steerable implements equipped with side-shift, drawbar, axle or disc steering. StarFire™ receivers mounted on both the tractor and implement share the signal for even greater accuracy producing straight, curved or circular tracks.

### + YOUR BENEFITS

- Tractor and implement follow exactly the same track
- Aligns tracks and plant spacing
- Eliminates crop losses due to wheels or tracks
- Avoids damage to irrigation pipes or drip tape
- Perfectly straight furrows and even seed beds

### IMPLEMENTED MOUNTED RECEIVER

A second StarFire™ receiver mounted on the implement ensures it follows exactly the same guidance lines as the tractor. The receiver can easily be removed and mounted on other machines or implements for different applications.



# TRACTOR INTEGRATED ACTIVE IMPLEMENT GUIDANCE

## **+** YOUR BENEFITS

- Alternative method for mechanical weed control
- Weed at speeds up to 16 km/h
- Minimises soil compaction

Tractor Integrated Active Implement Guidance lets you mechanically weed at speeds up to 16 km/h. It helps solve the challenges of increasingly strict environmental legislation and progressive weed resistance.



## **PREVENTS CROP DAMAGE**

At higher speeds, even a tiny unevenness in the ground may cause the tractor to roll slightly and push the implement into the crop. Tractor Integrated Implement Guidance automatically compensates for this, allowing you to work at higher speeds.





## iGRADE™

John Deere iGrade™\* is the ideal way to plane or level your land accurately. Unlike laser systems, this RTK-based system works reliably in poor visibility and rough weather conditions – even at night. Whether you're making constant slopes for drainage or perfectly levelled planes for speciality crops, the adjustment of scraper blades is fully automated. In combination with the T3RRA Cutta™ software from our partner T3RRA, iGrade™ simplifies the planning of levelling and even optimises routing.

### **+** YOUR BENEFITS

- Reliable in rough weather and low visibility conditions (dust, fog)
- Compatible with T3RRA software
- Larger signal range than a laser
- Allows multiple machines to work in different planes at the same time
- +/- 4.2 cm vertical pass-to-pass corrections

\*Available in selected countries. Please check with your dealer.

# AUTOMATION SYSTEMS

## SAVE TIME AND STRESS ON REPETITIVE TASKS

Automation tools take away the boring, repetitive tasks and give you the freedom to spend time managing your operation. They're also useful if you're relying on part-time or less experienced operators. Automation guarantees a great job every time.





# AUTOPATH™

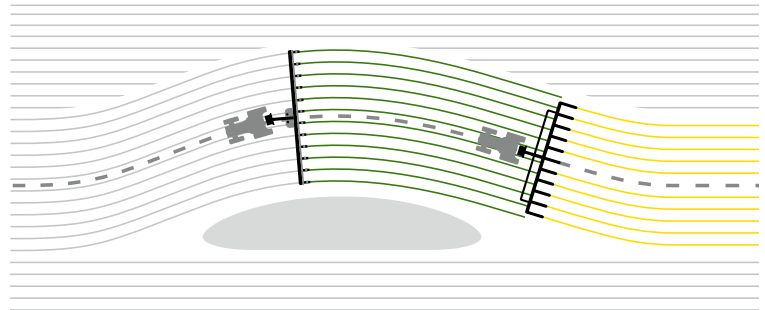
AutoPath™ uses an implement mounted receiver to record the precise rows during the first application of the season. This brings huge savings in both time and inputs on future passes, promoting better plant growth and avoiding crop damage.

## + YOUR BENEFITS

- Tyres and tracks always follow planted rows
- Accurately plant on top of strip till to maximise yield
- Guidance lines automatically calculated to implement width
- Stay on track when harvesting in down crop when you can't see rows
- AutoPath™ lines are stored in John Deere Operations Center™ and can easily be shared with other machines on your farm

## AUTOPATH™-ROWS

The exact location of each crop row is automatically stored in the John Deere Operations Center™ during strip till or planting. This data is used by AutoPath™ to create accurate guidance lines for every crop row. These guidance lines can then be used during subsequent operations throughout the farming year even with different width implements. AutoPath™ manages your guidance lines thus protecting nutrient investment and helping you make each pass with confidence and precision. It's particularly useful in applications such as strip till slurry injection as the corn seeds are accurately placed on top of the fertilizer injected strip till rows.





**PLANTING**

Start documenting your paths – either you start with strip till or planting, you can document the correct position of your rows with AutoPath™. Use those rows for future operations to reduce crop damage by precisely following planted rows for future operations. Also, maximise yield by accurately planting your crop rows on strip tilled rows.



**MECHANICAL WEED CONTROL**

AutoPath™-rows enables mechanical weeding operations to fit perfectly between the rows to avoid crop damage.



**SILAGE HARVEST**

AutoPath™-rows helps you locate harvest starting points quickly and easily. When harvesting the machine will be guided to the correct starting point with guidance lines automatically calculated for the header width.



**CORN HARVEST**

Using the benefits of locating harvest point, AutoPath™ also simplifies the harvest in the down crops as the machine knows exactly where the rows are.

**AUTOPATH™ – BETTER PLANT DEVELOPMENT**

**WITH AUTOPATH™**

Corn plants have a deep, but narrow root structure. AutoPath™ ensures fertiliser is precisely injected and the corn seeds are accurately placed on top of the fertilizer injected strip till rows. Less fertiliser is used and yields are higher due to better nutrient availability for the corn and improved soil capillares as they are not destroyed by intensive soil cultivation after strip tillage.



**WITHOUT AUTOPATH™**

Without AutoPath™ the fertiliser is spread across the field. Corn seed is not planted right above a nutrient depot like from a strip till slurry application, what leads to less accessibility and smaller nutrient use efficiency following by smaller yields.

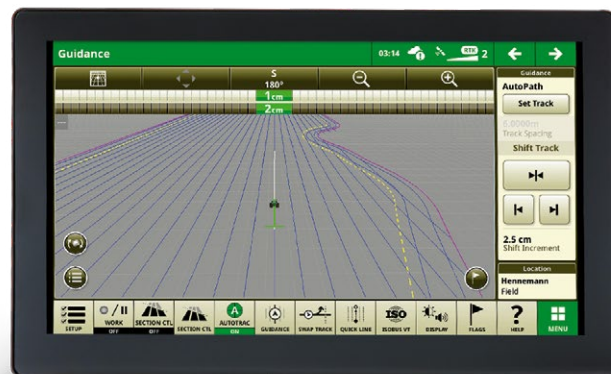


## **+** YOUR BENEFITS

- Saves on set-up time
- Enables new planting applications
- Creates headland guidance tracks to the shape of the field
- Superior buffer zone management

## **AUTOPATH™-BOUNDARY**

Using the field boundary data, width of implement and the desired size of the headland, the AutoPath™-boundary feature automatically calculates all guidance lines for the entire field, including the ones for the headland. It also enables new farming practices such as precise seeding between rows of the previous season's drilled grain, drilling with minimal or no till between last year's rows, or the planting of cover crops to help the establishment of the main crop. The operator has full flexibility: all created tracks can be shifted as needed and re-saved as an additional template. AutoPath™-boundary templates are stored on the display and in John Deere Operations Center™ and can be used for future guidance planning outside of the current crop season, as is, or with slight adjustments.





# AUTOTRAC™ TURN AUTOMATION

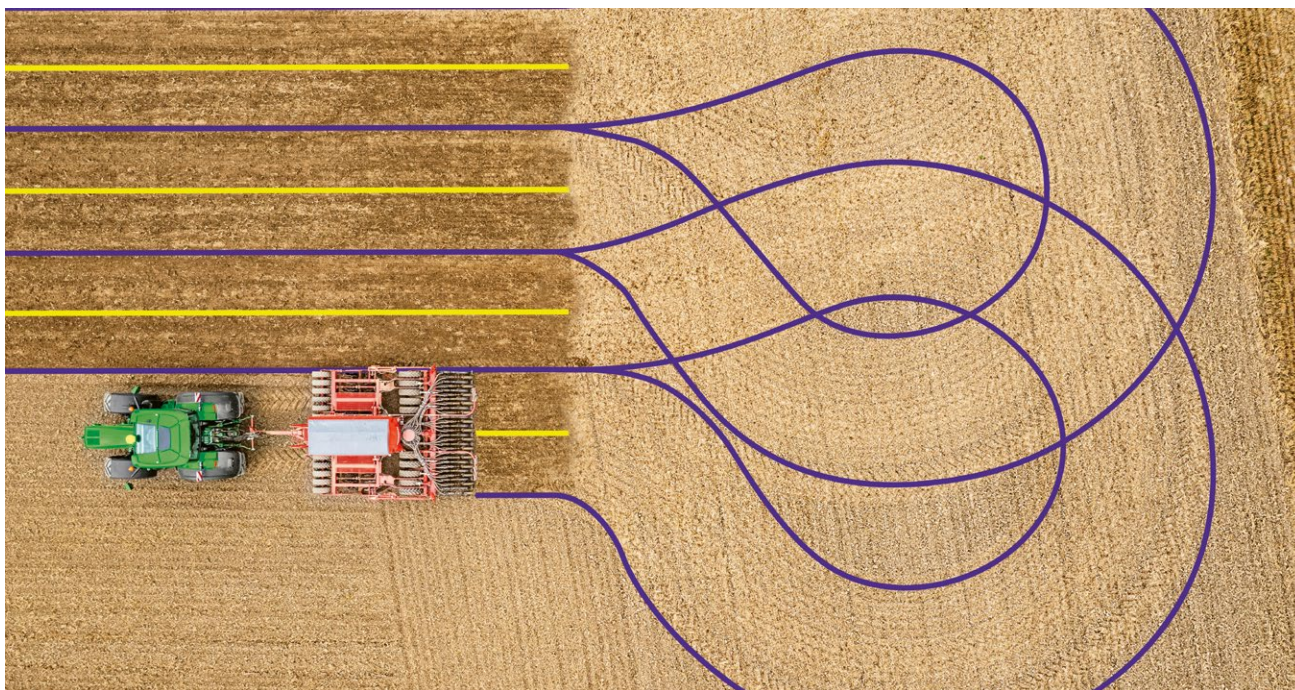
Whatever the shape of the field, AutoTrac™ Turn Automation controls the entire headland turn. On 6R – 9R Series tractors it automatically manages all tractor and implement functions, including forward speed changes, PTO switching and the raising or lowering of linkages at exactly the right time and position in the field. On combines it allows faster and safer turns, automatically calculating the optimum turning position depending on the header length. It also allows you to improve your inputs in terms of variety choice, fertilizer and crop care.

## **+** YOUR BENEFITS

- Reduces skips and overlaps
- Saves time
- Minimises soil compaction
- Reduces input costs for fertiliser, seeds and fuel
- Gives confidence to less experienced operators

## **PERFECT HEADLANDS**

Even inexperienced operators will produce perfect headlands without any overlaps. The system can be programmed for simple U-turns or figure-of-eight turns. You can also choose to get the iTEC™ sequences executed automatically and drive manually on the headland turn.





# MACHINE SYNC

## **+** YOUR BENEFITS

- Ensures spill-free, precision unloading on-the-go
- Reduces the chance of collisions between machines
- Prioritises combine unloading and improves harvest efficiency
- Less operator stress

Machine Sync allows operators to connect up to 6 machines with their own wireless network for better harvest logistics. One machine acts as the 'Leader', controlling the speed, direction and position of the 'Followers'. Machine Sync is most commonly used on combines and forage harvesters as well as on tractors for speciality crop harvesting (e.g.: potatoes, vegetables, etc.). For instance, a trailer driver can remotely check the grain tank of different combines to prioritise unloading. When the trailer arrives alongside the combine the driver can take control of the tractor, moving the trailer back and forth for even loading.



### REMOTELY CHECK COMBINE GRAIN FILL LEVEL

The grain trailer operator can view the location of all the combines in their network and the grain tank fill level thanks to In-Field Data Sharing. They can then decide which combine to unload next. Alternatively, the combine operator can request a tractor for unloading. This ensures optimised routing for grain trailers, saving time, fuel and reducing soil compaction.



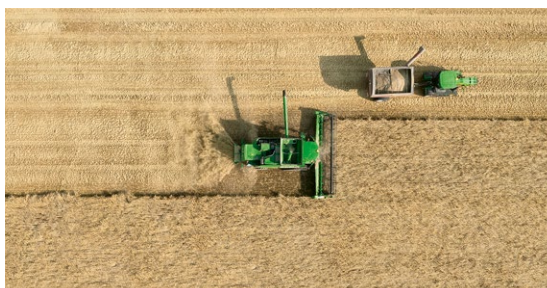
### COMBINE OPERATOR TAKES CONTROL OF UNLOADING TRACTOR

As the tractor pulling the grain trailer arrives near the combine, the operator activates Machine Sync. The system automatically takes control of the tractor's steering and speed. The tractor driver can then take their hands off the steering wheel.



### COMBINE OPERATOR STEERS TRACTOR

The combine operator can now control the position of the tractor relative to the combine. If the combine changes direction or speed, the tractor also changes direction or speed. The tractor can be nudged back and forth by the combine driver to ensure the grain trailer is evenly filled.



### OPERATOR RELEASES CONTROL OF UNLOADING TRACTOR

When the trailer is fully loaded the tractor operator can take over control simply by turning the steering wheel or depressing the brake or accelerator pedals. Alternatively, the combine operator can also stop the synchronisation from their display.





# ACTIVE FILL CONTROL

## + YOUR BENEFITS

- Maximises operator comfort
- Optimises harvest efficiency
- Enables less experienced operators to harvest with peak productivity
- Harvest day and night with minimal spillage

Active Fill Control ensures spill-free unloading for forage harvesters. Stereo cameras automatically track the position of the unloading trailers so the SPFH driver doesn't have to always be checking their location. Once engaged the system detects the edge of the nearest trailer, controlling the rotation and flap position of the spout and filling it to maximum capacity. It even works where the trailer is positioned directly behind the SPFH, making it easier when opening a new field.



## MORE RELAXING

The fill status of the trailer can be monitored via a video feed on a separate display. This removes the stress of the operator having to constantly turn their head for a visual check.

# TRACTOR IMPLEMENT AUTOMATION

Tractor Implement Automation allows the implement to automatically make adjustments to electronically controlled tractor functions when producing bales, planting or harvesting potatoes, planting corn or applying manure. For instance, when baling the tractor will be automatically stopped for wrapping, enabling maximum efficiency and consistent work. The system is compatible with John Deere round balers and manure sensing and it also works with Horsch Maestro, Grimme Exacta & Root Runner, Krone Fortima, Comprima and Ultima balers, and Fliegl Manure Sensing.

## + YOUR BENEFITS

- Maximises throughput and productivity
- Reduces operator stress
- Ensures a consistent level of quality
- Lowers fuel consumption



# SITE-SPECIFIC FARMING

## MANAGEMENT OF INDIVIDUAL AREAS OF YOUR FIELD

Site-specific farming can transform the economics of your farm by only applying inputs such as seed, crop protection products and fertiliser exactly where they are needed. Delivered by a combination of John Deere Precision Ag Technology and analytical management tools it will bring a new level of understanding and accuracy to your farm.







## SECTION CONTROL

### + YOUR BENEFITS

- Lowers input costs
- Reduces crop damage and environmental impact
- Automatically switch sections on/off to avoid overlap in the field and at headland turns
- Ensures equally spaced crops and consistent growing conditions

Section Control automatically turns individual implement sections on and off at predefined locations in the field. By reducing potential overlap and gaps, you only apply the exact amount of fertiliser, seed or crop protection, where they are needed. This cuts your input costs and increases efficiency while minimising crop damage and environmental impact at the same time. It also helps to create the best possible growing conditions for your crops by avoiding overspraying or overplanting. Gen 4 & G5 Displays can control up to 255 individual implement sections. They can manage two AEF-certified ISOBUS control units: one front plus one rear implement, e.g. front hopper and planter.







## VARIABLE RATE CONTROL

Variable Rate Control precisely controls the amount of seed, fertiliser or crop protection products to optimise crop yields, lower input costs and increase profits. Using yield maps from the John Deere Operations Center™ or other field data such as biomass you can easily create variable rate maps for seeding, fertilising or spraying. The maps drive the variable rate controller on ISOBUS equipped implements ensuring the right amount is applied in the right place.

### + YOUR BENEFITS

- Optimizes input distribution according to the yield potential of each zone
- Applies precisely the right amount of seed, fertiliser or crop protection product
- Ensures consistent growing conditions
- Easy set-up with John Deere Operations Center™



## HARVESTLAB™ 3000

HarvestLab™ 3000 is a highly accurate mobile laboratory that measures crop and slurry constituents for better analysis and planning of crops and fertiliser strategies. It can be fitted to combines, slurry tankers and forage harvesters or used as a standalone analytical tool for feed analysis. Using Near-Infrared Spectroscopy HarvestLab™ 3000 takes more than 4,000 measurements every second for highly accurate analysis. It replaces traditional manual sampling techniques with real-time measurement in the field.



### UPGRADE YOUR EXISTING MACHINE

HarvestLab™ can be retro-fitted as an upgrade to older models of S and T-Series combines as well as Self-Propelled Forage Harvesters. Ask your dealer for details.

## SILAGE HARVESTING

Mounted on the spout of a John Deere forage harvester, HarvestLab™ 3000 enables automated length of cut adjustment based on dry matter content, optimising bulk density and silage quality. It also provides highly accurate, real-time measurement of crude protein, starch, crude fibre, NDF, ADF, sugar and crude ash. This enables operators to adjust silage inoculant dosing for the optimal fermentation and invoice or purchase harvested crop based on quality, not quantity. It also allows you to improve your inputs in terms of variety choice, fertilizer and crop care.

### + YOUR BENEFITS

- Real-time in field constituent measurement at point of harvest
- Automatic length of cut adjustment based on dry matter content
- Accurately adjusts silage inoculant dosing to optimise fermentation
- Permanent record for silage management and crop planning
- Constituent information can be sent to the Operations Center seamlessly

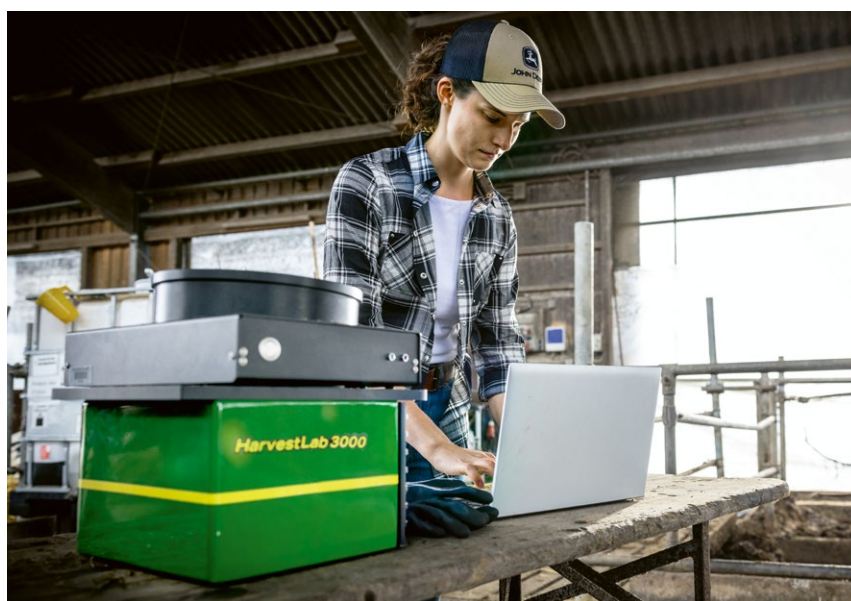
CROP TYPE	MOISTURE/ DRY MATTER (DM)	CRUDE PROTEIN (XP)	STARCH	CRUDE FIBRE (XF)	NDF <sub>OM</sub>	ADF <sub>OM</sub>	SUGAR (XZ)	CRUDE ASH (XA)
Corn	■	■	■	–	■	■	–	■
Grass	■	■	–	■	■	■	■	■
Alfalfa	■	–	–	–	–	–	–	–
Whole Crop Silage	■	–	–	–	–	–	–	–

## MOBILE LABORATORY

HarvestLab™ 3000 can also be dismantled from a machine and used as a standalone laboratory analysis unit. All you need is a connection to a vehicle power outlet for instant crop information wherever you are. Using our powerful web interface you can easily visualise the results to help ensure proper bunk management, accurate feed rationing and livestock health. This can bring you savings on supplements and feed optimisation for higher yields in beef and dairy herds, or for biogas production.

### + YOUR BENEFITS

- Complete constituent analysis for farmers, biogas plant operators and nutritionists
- Real-time detection of feed quality
- Easily plan winter feeding
- User friendly web-interface





### GRAIN SENSING WITH HARVESTLAB™ 3000

HarvestLab™ measures the protein content and more in real-time as you harvest. Allows you to separate higher value, higher protein wheat to get the most out of your harvest.

### + YOUR BENEFITS

- Real-time measurement of moisture, protein, starch and oil
- Separate grain according to protein content
- Assess performance of different seed varieties
- Plan nitrogen fertiliser strategy

### GRAIN SENSING

Grain Sensing provides real-time data on crop quality while you're harvesting\*. Measuring moisture, protein, starch and oil in different crops it can help you assess the suitability of different seed varieties. You can also tell if your wheat is bread or feed quality, allowing the separation of different loads as you harvest. At the end of the season, analysis of constituent maps provides valuable information on how successfully nutrients such as nitrogen have been used for planning next season's fertiliser applications.



HARVESTLAB™ CROP CAPABILITY				
	Moisture	Protein	Starch	Oil
Wheat	■	■	■	
Barley	■	■	■	
Rapeseed	■	■		■
Corn	■	■	■	■
Soybeans	■	■		■

\*HarvestLab™ is currently available on T and S-Series combines.

## MANURE SENSING

John Deere Manure Sensing lets you precisely apply N, P and K based on nutrient target and limit rates in kg/ha. You can even use it with site-specific prescription maps to apply fertiliser exactly where it's needed for more even crop growth throughout the field. HarvestLab™ 3000 is approved by the German Agricultural Society (DLG) for all three important organic fertilisers (cattle and pig manure as well as biogas digestate) with an accuracy comparable to certified laboratories.

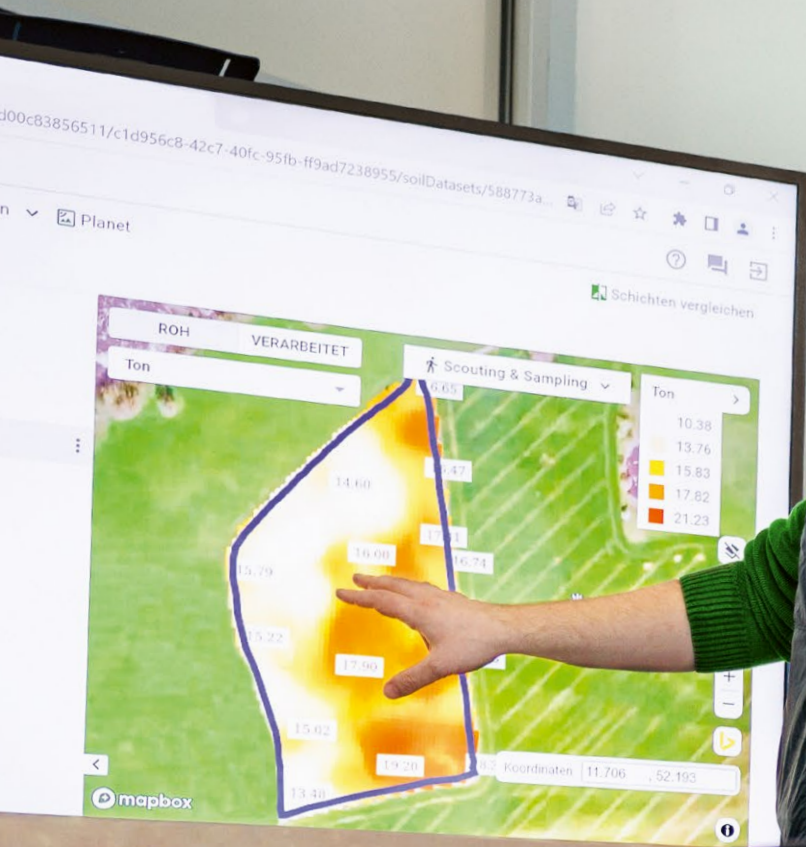
## + YOUR BENEFITS

- Reduces mineral fertiliser costs
- Delivers more consistent crop growth throughout field
- Provides information of compliance with local regulations
- Precisely dose using site-specific prescription maps
- Compatible with most slurry tankers and umbilical systems



MANURE TYPE	DRY MATTER (DM)	NITROGEN	AMMONIUM	PHOSPHORUS	POTASSIUM
Pig/Hog	■	■	■	■	■
Dairy/Cattle	■	■	■	■	■
Biogas Digestate*	■	■	■	■	■

\*if not produced with food waste



# BEYOND BOUNDARIES

The real power of John Deere Precision Ag Technology is in the data your machines collect. Stored in the John Deere Operations Center™ it can help you better manage your inputs and your machines for more sustainable farming.

Now is the time to move beyond boundaries and guidance lines and begin your smart farming journey. Our dealer network is investing in Precision Ag Specialists who are there to help you make the transition to a more productive, better informed and profitable farming operation.



# ONE PLACE FOR EVERYTHING

## JOHN DEERE OPERATIONS CENTER™

Your machines collect thousands of valuable data points from every hectare. It can all be securely stored in one place: your John Deere Operations Center™ account. Data can be easily exported too. You can combine it with data from more than 200 connected software partners. This gives you a level of management control that is unrivalled in the agricultural industry.

If you've not set up your account, talk to your Precision Ag Specialist today. What's more, there's no monthly payments or fees either. John Deere Operations Center™ is free to use.



### PROFESSIONAL DEALER SUPPORT

Our dealers are making big investments in Precision Ag specialists. They can help you get started on your smart farming journey, setting up your account in the Operations Center and explaining the different smart farming capabilities. With your permission they can also monitor your machines and help with performance optimisation.



### BETTER PROFITABILITY

You can only manage what you measure. The John Deere Operations Center™ supports your profitability throughout the entire farming year by giving you valuable data on every action. Save time with pre-planning work. Monitor progress in real-time. When the season is over, review and analyse the harvest data to improve your long-term sustainability and profitability.



### SECURE DATA PROTECTION

All your data is well protected, meeting the high compliance standards such as data locality, protection and confidentiality. It is also automatically backed up on multiple servers for added safety. Data can only be accessed by the registered account holder unless you provide access rights to other members of your team, your dealer or independent advisors such as an agronomist.



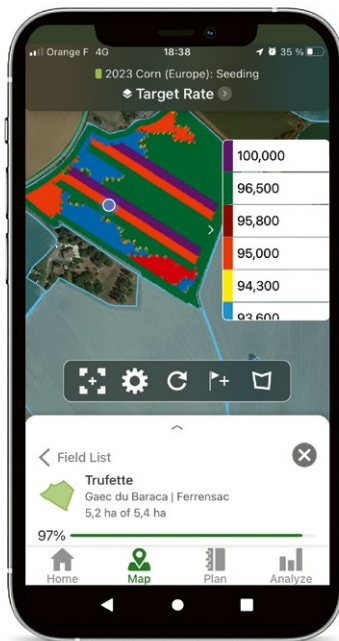


# SIMPLE TO USE

## JOHN DEERE OPERATIONS CENTER™

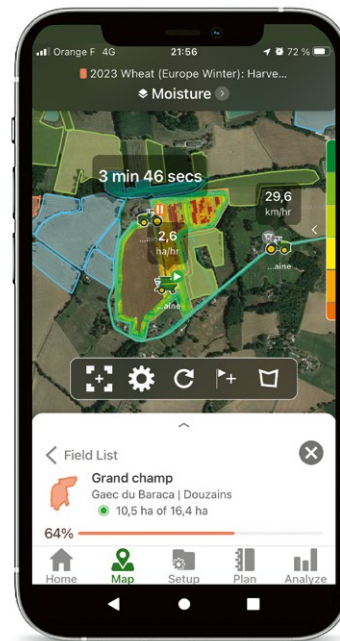
Designed by farmers for farmers you'll find the John Deere Operations Center™ is easy to use with minimal learning required. Just like your smartphone's operating system it's constantly being updated as well, with upgrades and extra functionality.

It's incredibly versatile too. The combination of the John Deere Operations Center™ mobile app and cloud base storage allow you to manage your machines in real-time from any device with any brand of machine.



### SAVE TIME

Set up work days or weeks in advance with the Work Planner feature. As soon as the machine enters the field it can start working with just one click. No delays. No mistakes.



### MANAGE MACHINES

Know where all your machines are in real-time. See how long is left before a machine is finished in the field. Check the grain tank level in your combine, the amount of fuel left in the tank and more.

**"IT'S SO SIMPLE TO USE AND YOUR  
DATA IS SAFE. THERE'S NO REASON  
NOT TO TRY PRECISION AG."**

MATT RANSON, PRECISION AG SUPPORT SPECIALIST,  
HUNT FOREST GROUP



## MAKE BETTER DECISIONS

Did one seed variety perform better than another? How well did the last nitrogen treatment work? Exchange data from more than 200 connected software companies to build up a comprehensive picture of your fields and make informed decisions about next year's preparation, planting and crop protection.

# DATA BASED FERTILISER STRATEGY

***“PRECISION AG HELPS  
US BECAUSE OF OUR  
VARIABILITY...  
THIS DATA WILL HELP  
US MAKE SOME NEW  
DECISIONS.”***

SIMON BEDDOWS, MANAGER,  
COPPID FARMING, UK

## HARVESTLAB™

HarvestLab™ Grain Sensing protein data can give you powerful insights into how applied nitrogen is being used when combined with a wide range of other information such as soil analysis, moisture measurements, biomass mapping and more. This creates the opportunity for farmers, dealers and agronomic crop advisers to much better understand the efficiency of nutrient uptake of their applied nitrogen for each variety, field and zone.

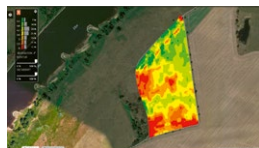
Simon Beddows manages around 400 ha near Reading in the UK. The soil is extremely variable with huge differences in yields, making it the perfect location for precision farming. He's been using HarvestLab™ for two years and like many farmers cut back on nitrogen for the 2022 season. The protein levels in the harvested wheat were encouraging and indicate the potential for variable nitrogen applications in future.





Biomass

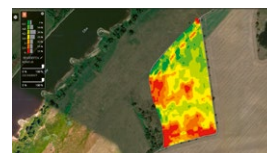
OR



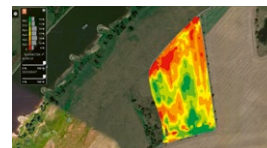
Yield



Potential Yield

Variable Rate  
Fertiliser Application

Yield



Protein



Remaining Nitrogen

## 1. PLAN

Using 5-6 years of either combine yield maps, or if not available, satellite biomass maps, a map showing the potential yield from different areas of the field is calculated.

## 2. APPLY

The potential yield is used to create a variable rate application map for usually 3 applications throughout the growing season

## 3. ANALYSE

After the harvest the nitrogen remaining in the field is calculated before some of it is washed away in the sandy soil.

### CALCULATING NITROGEN UPTAKE

In East Germany, LVA, a John Deere dealer is using HarvestLab™ data to help customers analyse their variable rate nitrogen applications. Historic yield maps from the past 5-6 years, or satellite biomass data if yield maps are unavailable, are used to create maps of the potential yield expected from a given field. From this, variable rate prescription maps are produced for nitrogen fertilising applications throughout the growing season.

During harvest, the combine measures both yield and protein. The protein content provides a useful indicator of the amount of fertiliser that has been used by the plant. This can then be subtracted from the amount applied to understand how much nitrogen is unused.

### LARGE POTENTIAL SAVINGS

By understanding how much excess nitrogen was applied the farmer can regulate application rates with potentially large savings. For instance, if 166 kg/ha was applied and the plants only used 50 kg/ha, then clearly there is a possibility to reduce the amount of fertiliser as the plants are unable to use it. Conversely, if all the nitrogen is used, then the possibility exists to increase the amount of fertiliser.



# DATA BASED MACHINE MANAGEMENT

## JDLINK™ CONNECTIVITY

JDLINK™ connectivity provides valuable data on machine usage which can deliver substantial savings in operating costs.

With your permission your dealer can remotely monitor your machine. This allows them to provide a range of powerful services:

### REMOTE DISPLAY ACCESS

Lets you share the display screen on your machine with your dealer for real-time advice on troubleshooting and set-up.

### UPTIME EXPERT ALERTS

Unique to John Deere, this predictive monitoring service identifies potential issues and allows your dealer to fix them before they could hold up your farming operation.

### PERFORMANCE EXPERT ALERTS

Provides recommendations for optimising your machine's performance.

**“MANY CUSTOMERS THINK REDUCING IDLING IS ALL ABOUT SAVING FUEL, BUT THERE ARE MUCH BIGGER SAVINGS TO BE HAD.”**

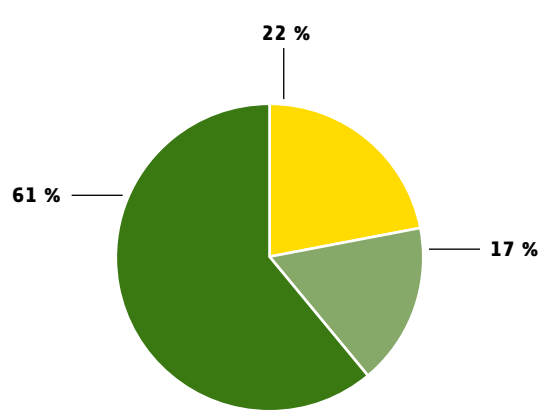
CARL PITELEN, GROUP PRECISION AG & HARVEST MACHINERY MANAGER, BEN BURGESS

**BIG SAVINGS ON WHOLE-LIFE COSTS**

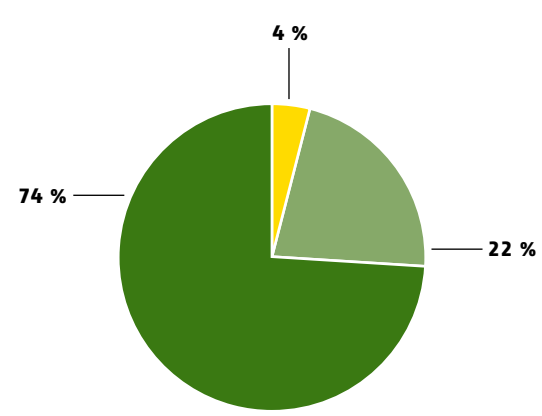
JDLink™ can be used to measure machine usage: time spent working, on the road (transport) and idling. The most obvious way to use this data is to reduce idling time. Unnecessary time spent idling doesn't just waste fuel, it puts extra unproductive hours on machines and that adds to their service and maintenance requirement. Those extra hours have an even larger impact on depreciation, affecting future resale value.

Your John Deere dealer is able to support you with machine monitoring and provide comparisons with equivalent machines so you can benchmark your usage. In the example below the customer's 6215R is spending 22% of its time idling. Reducing that to 15% brings a large saving in maintenance, depreciation and fuel. Cost savings that would have otherwise gone unnoticed without John Deere Precision Ag Technology.

**MACHINE UTILISATION**



**FUEL CONSUMED**



Idle
  Transport
  Working

IDLING TIME	COST/€*
22%	6,361.72
15%	4,377.61
<b>SAVING PER YEAR</b>	<b>1,984.11</b>

\*Costs based on 1,000 hours per year. Maintenance & Protection at €5.00/h, Depreciation €20.60/h and fuel at idle €3.52/h.

# **NEW TO SMART FARMING? WE'RE HERE TO HELP.**

***"THERE ARE JOHN DEERE PRECISION AG SPECIALISTS AT YOUR LOCAL DEALER WHO ARE READY TO HELP YOU GET STARTED ON YOUR SMART FARMING JOURNEY. THEY CAN ADVISE YOU ON THE RIGHT PRECISION AG TECHNOLOGY, SET UP YOUR OWN PERSONAL ACCOUNT IN THE JOHN DEERE OPERATIONS CENTER™ AND HELP YOU ENTER YOUR FIELD AND GUIDANCE DATA.***

***THOUSANDS OF USERS ACROSS THE WORLD ARE ALREADY BENEFITTING FROM SMART FARMING. ISN'T IT TIME YOU JOINED THEM? JUST GIVE YOUR LOCAL DEALER A CALL AND THEY'LL GET YOU STARTED."***

ALEXIS DUMAINE, PRODUCT MARKETING MANAGER AGRONOMIC OPTIMIZATION, JOHN DEERE

**FARM  
SMART,  
PROFIT'  
MORE**