

MAKING SENSE OF DIGITAL FARMING



FIELD SENSE
Precision in partnership

What makes
FieldSense
different?



PEOPLE NOT PROCESSES

Those who already work with ProCam know that we are a business built on the credibility of our people, not processes. Now is the time to take our grower/agronomist relationships into an exciting new era.

We've watched closely with interest as our industry has become immersed in technology and increasingly more complex.

Having taken time to review the digital precision farming packages on the market, we wanted to develop a platform to enhance and support the work we already do in partnership with our growers, not to dictate it. That's what makes FieldSense different.

FieldSense is designed with common sense in mind, taking the complexity out of precision farming while still giving all the benefits precision farming can offer.

We call it 'precision in partnership' because the very best results come from us working together. With our ProCam Agronomists setting the course and navigating the technology, everything makes perfect sense.



This is
precision in
partnership



KNOWLEDGE NOT INFORMATION

With FieldSense, it's not only about gathering valuable in-field information; it's knowing what to do with it that makes the difference. Data means nothing without skilled interpretation.

The responsibility of managing and operating the FieldSense platform lies predominantly with our ProCam Agronomists, taking the complexity, stress, and time away from our growers, especially at the busiest times of year.

They will make sense of the satellite image capture and spatial data, interpreting the information based on their observations and crop knowledge, drawing on their 'boots-on-the-ground' experience of the field, thereby ground-truthing the images.

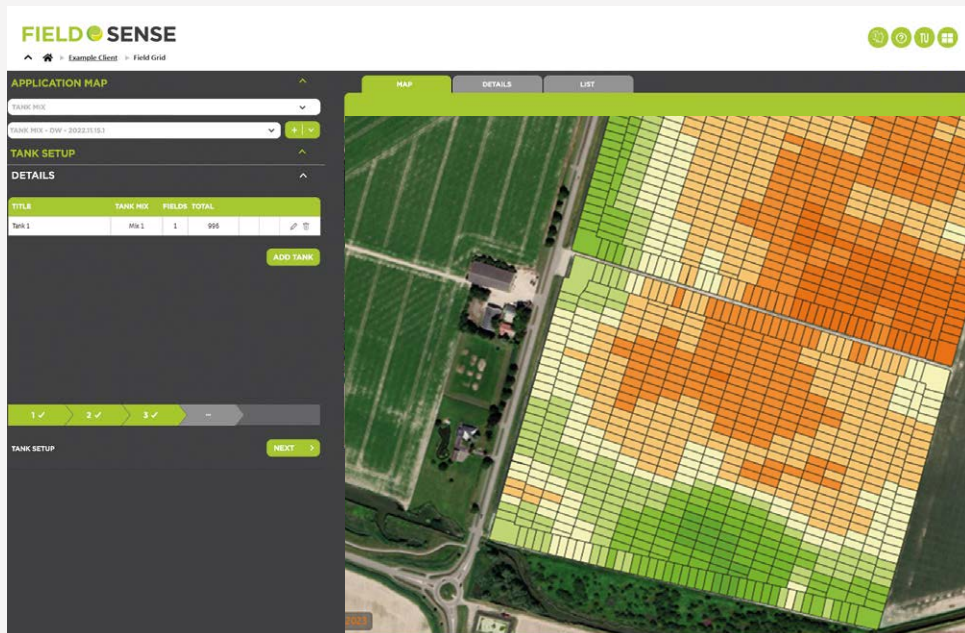
Satellite mapping is one element of precision farming, but it's just the start. It needs underpinning with solid field experience, overlaid with historical factors and our growers' knowledge and expertise.

With FieldSense, there's no minimum field area, so growers can try the platform to see how well it works on just a few hectares, before rolling out the technology further afield.

SOLUTIONS NOT INPUTS

At ProCam, we've always been about providing our growers with solutions, not inputs. FieldSense now makes this all the more powerful.

FieldSense provides accurate field mapping through the interpretation of soil nutrients or crop biomass, utilising GPS technology and the use of variable rate inputs.



FIELD MAPPING

Fields are mapped into grids, bespoke to the farm system and equipment. This allows accurate variable rate inputs such as seed rate and nutrient application, ensuring inputs match both the field and crop to maximise value and importantly, to fit with the farming systems. For example 1ha grids for soil sampling, 24m grids for fertiliser spreading, 4m grids for variable seed rates.

HARVEST YIELD DATA

In fields where yield mapping is carried out on the combine harvester, yield data can also be uploaded into FieldSense to guide future agronomic decisions.

MAXIMISE OUTPUTS

Through visualising practical farm data, FieldSense takes the guesswork out of improving decision making, reducing risk, optimising crop production and bringing environmental gains.

VARIABLE RATE DRILLING

Historical NDVI satellite data showing variations in crop biomass over a number of selected years can be used to create a variable seed rate plan to ensure seed rate reflects the field potential to optimise output across the whole field.

VARIABLE APPLICATIONS

From interpreting satellite maps, historical crop variable rate files can be downloaded to the tractor controlling the fertiliser applicator for variable application of nitrogen (N), phosphate (P), potash (K) and lime.

SOIL HEALTH

Grid-based soil sampling and analysis in conjunction with SoilSense, helps growers gain a deeper understanding of their key asset, and the practical steps to protect and improve it.

For a full introduction and demo of the FieldSense web-based digital platform, speak with your ProCam Agronomist or email Fieldsense@procam.co.uk



SOIL SAMPLING



FIELD GRIDS



SCOUTING



DATA UPLOAD



REPORTS



APPLICATIONS
MAP



WEATHER



SEED RATE
CALCULATOR

DIGITAL APPLICATIONS

Being digital, we will continually develop and improve the FieldSense platform to grow and adapt to changing needs. Current applications include:

SOIL SAMPLING

Build a complete picture of your soil's health, using grid-based soil sampling, field by field to generate analysis-driven solutions.

FIELD GRIDS

Satellite imagery maps fields into different sized grids for operations such as soil sampling and variable rate fertiliser spreading and drilling.

SCOUTING

Targeted crop walking by satellite, to observe in-field variation. A highly effective part of the FieldSense toolkit.

REPORTS

The ability to extract data and information exactly how you want it, packaged into a simple set of documents.

APPLICATIONS MAP

By cross-referencing the collected data, FieldSense will create an application map for each field that optimises inputs.

WEATHER

Hyper-localised forecasting within 1km via satellite and radar, so you can plan effectively for cultivation, harvest, drilling or spraying.

SEED RATE CALCULATOR

FieldSense will automatically calculate the required sowing rate (kg/ha) based on your planned seed rate/m² and TGW. Total seed requirement is also given.

DATA UPLOADS

Data can be captured from around the farm and uploaded in one central location to influence the management.

RESULTS DRIVEN BENEFITS

The FieldSense digital platform is a highly flexible and adaptable tool that delivers tailored solutions to optimise yields on farms of all types, sizes and locations across the UK.

VARIABLE RATE DRILLING

Virtually every field will have variations in soil type, seedbed quality, weed burden or pest pressure. These can all affect crop establishment, performance and ultimately output. Minimising this variation provides the major step to optimum populations and performance. Ultimately, the best performance will be achieved by establishing the correct plant count and tiller count as a foundation for the season to come.

By utilising crop biomass imagery, plant and tiller counts, visual assessments through the season and, if available yield maps, combined with both your and the agronomist's knowledge of the fields, FieldSense can be utilised to address those areas, producing variable drilling rate plans to allow optimum sowing rate to create even crop establishment and growth.

Plans can be made at any time. Ahead of expected sowing time will give an idea of seed requirement,

at the time of drilling to take account of current conditions such as seedbed quality, expected weed burden or pest pressure. If drilling is delayed or variety or seed quality changes, plans can easily be adjusted to modify seed rates appropriately.

Benefits expected from the use of variable rate drilling include:

- Targeted seed rate to soil type and seedbed condition so maximising the potential of every seed within the field
- Optimised plant populations and green leaf area optimises yield potential
- Optimised canopy structure for best performance
- Reduced risk of lodging and disease, help with weed control and improves harvestability
- Help to manage stress and improved crop resilience

An aerial photograph of a combine harvester working in a vast, golden-brown field. The harvester is positioned in the lower center, moving away from the viewer. A large flock of white birds is scattered across the field ahead of the harvester. The background shows rolling hills under a blue sky with scattered clouds. A large green speech bubble is overlaid on the right side of the image.

Talk to
us about a
FieldSense
demo today!

VARIABLE RATE FERTILISER

Variable rate fertiliser application is not about saving fertiliser cost, it's about optimising crop structure and performance by tailoring inputs.

FieldSense uses GPS soil analysis data to map nutrient variability across fields. Combined with in-field knowledge, this allows production of accurate variable rate application maps.

LIME

Fundamental to soil function, managing pH is essential to maintain soil health. Nutrient availability can be decreased if the soil pH is outside of the optimum, pH 6 - 7.2. Using GPS samples soil analysis, FieldSense can map soil variation and produce accurate variable rate plans for products to correct pH.



FieldSense map indicating pH status across fields. FieldSense uses the soil analysis results to map the need for additional lime applications to correct pH for optimum growth in every hectare. A variable rate lime application plan is produced, to be used on farm or by contractors, to optimise the pH across the field.

P&K

Phosphate is vital for efficient photosynthesis, promoting root growth and tiller formation. It is required for seed set and development and is a key nutrient for end use quality.

Potash is essential for the maintenance of water balance in the plant, minimising stress and

increasing drought resistance. It is required for formation and movement of protein and sugars in the plant.

By GPS sampling and mapping, soil indices can be managed to ensure they are optimised and availability for crop production is not limited.



Mapping P and K is essential to understand the nutrient need. In this field mapping has shown the Phosphate indices are very variable and remedial action is needed to ensure they are corrected and crop need is met. A variable rate nutrient application plan can be produced, tailored to either maintenance doses or to build indices.

NITROGEN

Managing crops to produce optimum leaf area, tiller number and canopy structure ensures output will also be optimised. Variable rate nitrogen can target areas with higher or lower plant or tiller numbers, or areas identified from NDVI mapping as variable yielding, ensuring optimum nitrogen availability to optimise crop output.

Precisely matching crop structure with nitrogen requirement can ensure both yield and quality needs are met. For example, milling wheat protein or malting barley quality can be optimised, at the same time ensuring nitrogen use efficiency is managed and the environment is protected.

FieldSense uses satellite imagery (NDVI) to identify variance in crop biomass over years and throughout the season. Interpreting the maps to identify variation in biomass, FieldSense produces variable rate maps to optimise nitrogen applications.

Mid March

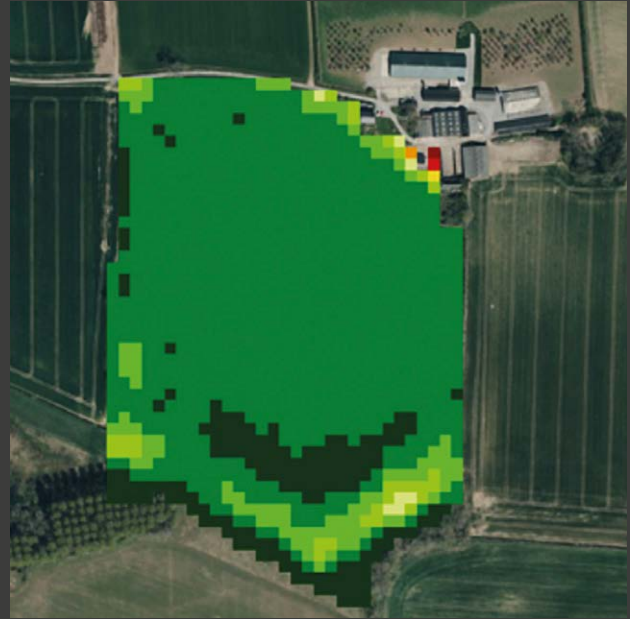


In cereals, variable rate nitrogen has been shown to increase yield in most situations, but not all. Yield improvement has been shown to be in the range of 0 to 8%, averaging around 3.5%. But this is not the only benefit. For example, managing crops to minimise the threat of lodging, or to improve overall marketable quality and harvestability are all clear benefits.

2 weeks later (end of March)



2 months later (June)



These NDVI images (above) show the management of variable rate nitrogen applications to a crop of winter oilseed rape. Correct interpretation of the biomass images combined with in-field observation allowed nitrogen rates to be matched to crop development and canopy structure. By June, the crop biomass and canopy had developed from a very uneven condition to very even, with improved structure, yield potential and eventually, harvestability.

PROVEN RESULTS



“THE AREA THAT HAS IMPRESSED ME MOST IS THE VARIABLE RATE SEED...”

“I’ve been working with FieldSense for 3 years now, creating better solutions that are more tailored to the field, and practical applications. I’ve used the variable seed rate information to create a more even establishment in the field, improving performance on a range of fronts; from increasing yield to creating even crop for weed suppression.

Through ground truthing with plant and tiller counts I can see that the wide range of seed rates produced by FieldSense is the best way to improve the output of the crop, with establishment ranging from 50% to 90%. The end result is a very logical, accessible platform that has delivered results to the field, improving the bottom line of crop.”

**HARRY JAMES
AGRONOMIST**





“WORKING WITH OUR PROCAM AGRONOMIST, FIELDSense HAS BEEN EASY TO USE.”

“We used variable rate nitrogen on the winter oilseed rape through FieldSense – about 100ha in total. Being in the catchment area was the main reason, but the SFI incentive helped.

Previously the land had outdoor pigs on it, so there was quite a lot of variability. But the conclusion was, it worked well. It evened the crop up. We used the same amount of nitrogen but targeted it better.”

**STEVE LEAR
FARMER, DORSET**



OUR DEPOTS

To find out more about FieldSense and how it could impact your farm, speak to your ProCam agronomist or contact your nearest depot.

1. Robertson Crop Services – Kildary
01862 842552
2. Robertson Crop Services – Cuminstown
01888 544666
3. Fieldcare North – Thirsk
01845 537555
4. BCS – Garton
01377 240118
5. County Crops – Burscough
01704 895001
6. Fieldcare South – Gamston
01777 839000
7. Fieldcare South – Scothern
01673 866118
8. ProCam UK – Cambourne
01954 712150
9. Field Options – Cambourne
01954 712150
10. ProChem – Leominster
01568 615686
11. ProCam Agriculture – Bassingbourn
01763 245223
12. Croesgoch Farm Stores – Haverfordwest
01348 831777
13. ProCam Agriculture – Little Bentley
01206 231999
14. Chemega – Swindon
01672 539591
15. ProCam South West – Cullompton
01884 34275
16. Rutherfords – Ashford
01233 820693
17. Rutherfords – Alton
01420 544227
18. Rutherfords – Lewes
01273 478860
19. Rutherfords – Isle of Wight
01983 522938



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AGRONOMY THAT DELIVERS™