

# Evo NIR

**NEAR INFRARED TECHNOLOGY FOR  
SLURRY SPREADING, HARVESTING AND FEEDING**







# THE SPECIALISTS IN NIR TECHNOLOGY

Dinamica Generale has developed NIR technology systems since the year 2000. Thousands of installations worldwide, vast on-site, real time analysis experience and internal calibration curves generation capabilities are the foundation of our success.

Farm managers, nutritionists, biogas plant owners, growers and contractors, to name a few, are using Dinamica Generale NIR analyzers worldwide to make intelligent decisions and take immediate, effective actions to optimize profits.





## THE COMPETITIVE ADVANTAGE OF DINAMICA GENERALE: TURNING CUSTOMER EXPECTATIONS INTO EFFECTIVE SOLUTIONS



Internal firmware  
development  
and deployment



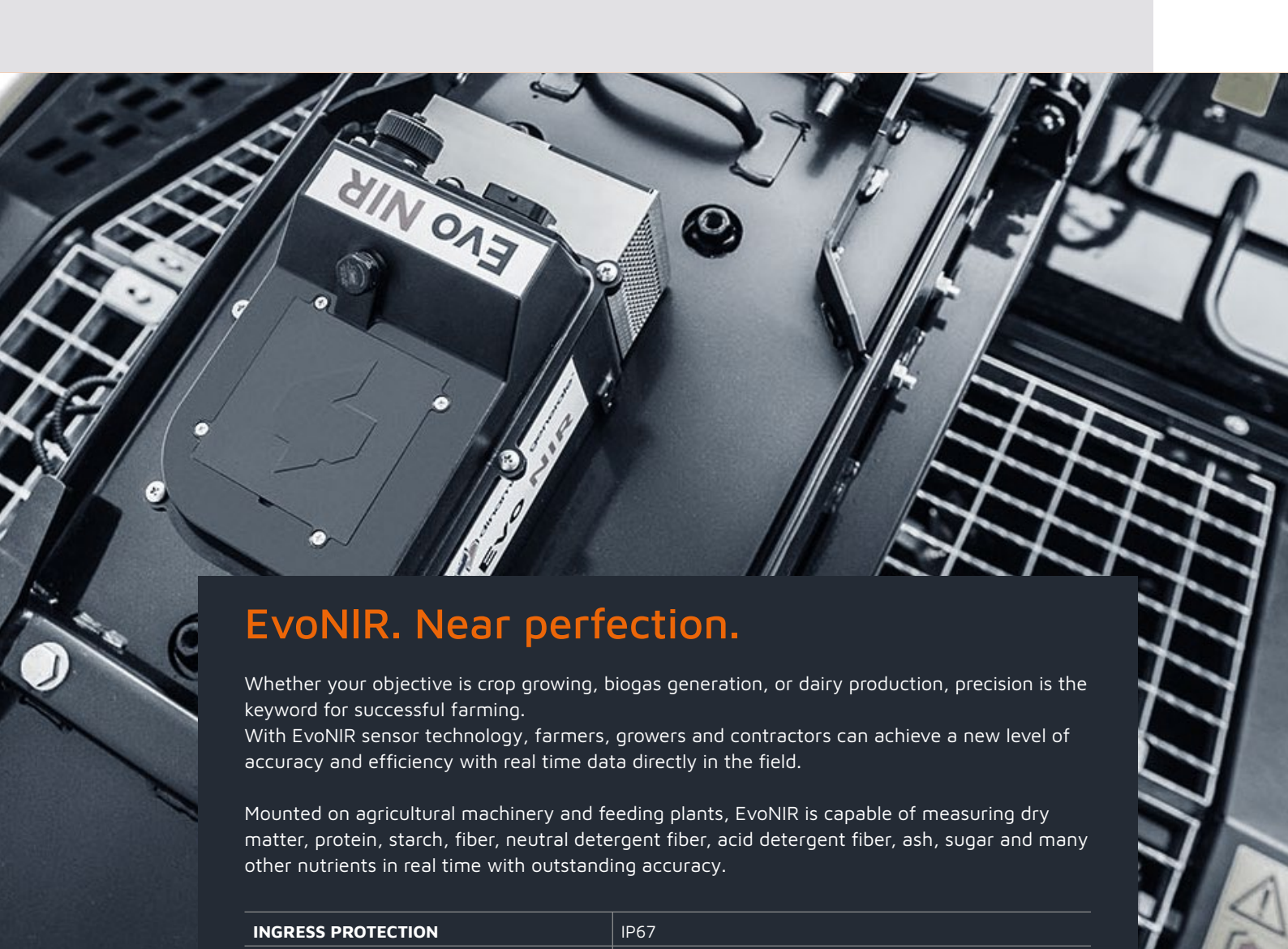
In-house  
development of  
calibration curves



Insourcing hardware  
design and Cloud  
software development

### Our strengths towards competition:

- A team of world-class talented engineers and mathematicians focused on NIR research and development.
- Thousands of samples collected worldwide and partnerships with main laboratories in 5 continents.
- Exclusive patents on different applications: automatic adjustment of the target weight for feedstuffs and water on feed mixers, NIR and Imaging analysis on harvesting machines.
- In-house lab for extensive calibration curve creation capabilities.
- Cloud based software for management of calibration curves



## EvoNIR. Near perfection.

Whether your objective is crop growing, biogas generation, or dairy production, precision is the keyword for successful farming.

With EvoNIR sensor technology, farmers, growers and contractors can achieve a new level of accuracy and efficiency with real time data directly in the field.

Mounted on agricultural machinery and feeding plants, EvoNIR is capable of measuring dry matter, protein, starch, fiber, neutral detergent fiber, acid detergent fiber, ash, sugar and many other nutrients in real time with outstanding accuracy.

<b>INGRESS PROTECTION</b>	IP67
<b>ACCURACY</b>	Moisture (Max 2%)* - ADF, NDF, Starch, Ash, Crude Fat, Sugar, pH (Max 3%)*
<b>POWER SUPPLY</b>	12-32 V DC
<b>WEIGHT</b>	4kg
<b>WORKING TEMPERATURE</b>	-10°C, +50°C
<b>CASE DIMENSIONS</b>	171 x 233 x 174 mm
<b>CASE MATERIAL</b>	Aluminium
<b>ISOBUS VIRTUAL TERMINAL COMPATIBLE</b>	Yes
<b>ISOBUS TASK CONTROLLER COMPATIBLE</b>	Yes

\* The degree of accuracy depends upon the availability of prediction models for each product, on-site verification of the instrument, use of the NIR Evolution Cloud Software

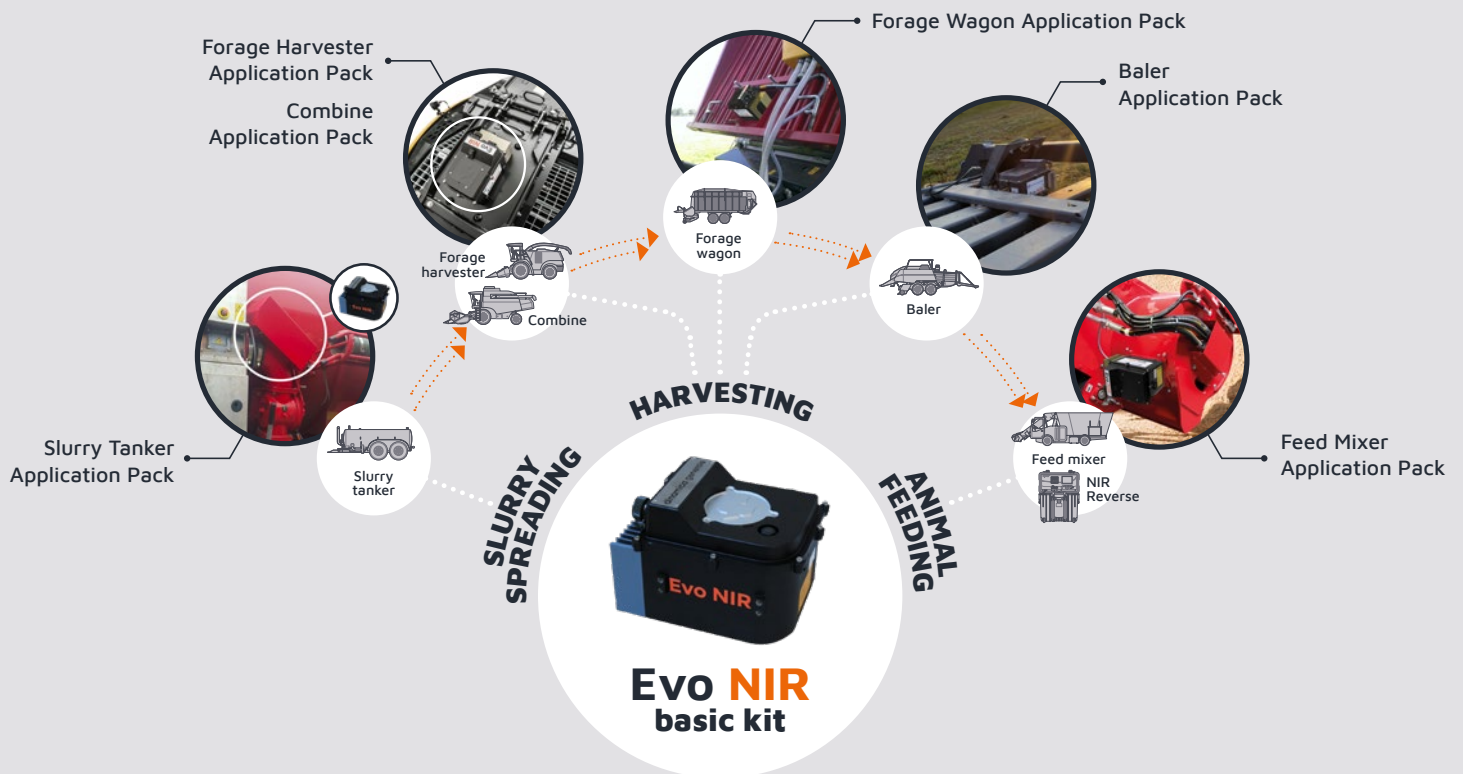


# EvoNIR. Near everything you do

## 8-in-1 sensor.

The EvoNIR sensor can be mounted on forage harvesters, combines, balers, forage wagons, slurry tankers, compactors, feed mixers and portable in a carrying case.

The core of the system is the Evo NIR basic kit: only one part number for a streamlined supply chain management. Customers willing to install the EvoNIR onto their machines just need to add the specific application pack to the basic kit.



# EvoNIR. Near you.

## **Dairy and beef farmers:**

Automatic adjustment of feed ration for dairy cows and beef cattle based on nutritional value to improve quality, production and profit.

## **Crop growers:**

Detect plant disease in advance for more effective use of agrochemicals and a more sustainable method of crop management. Measure plant quality prior to harvest, during and after harvest.

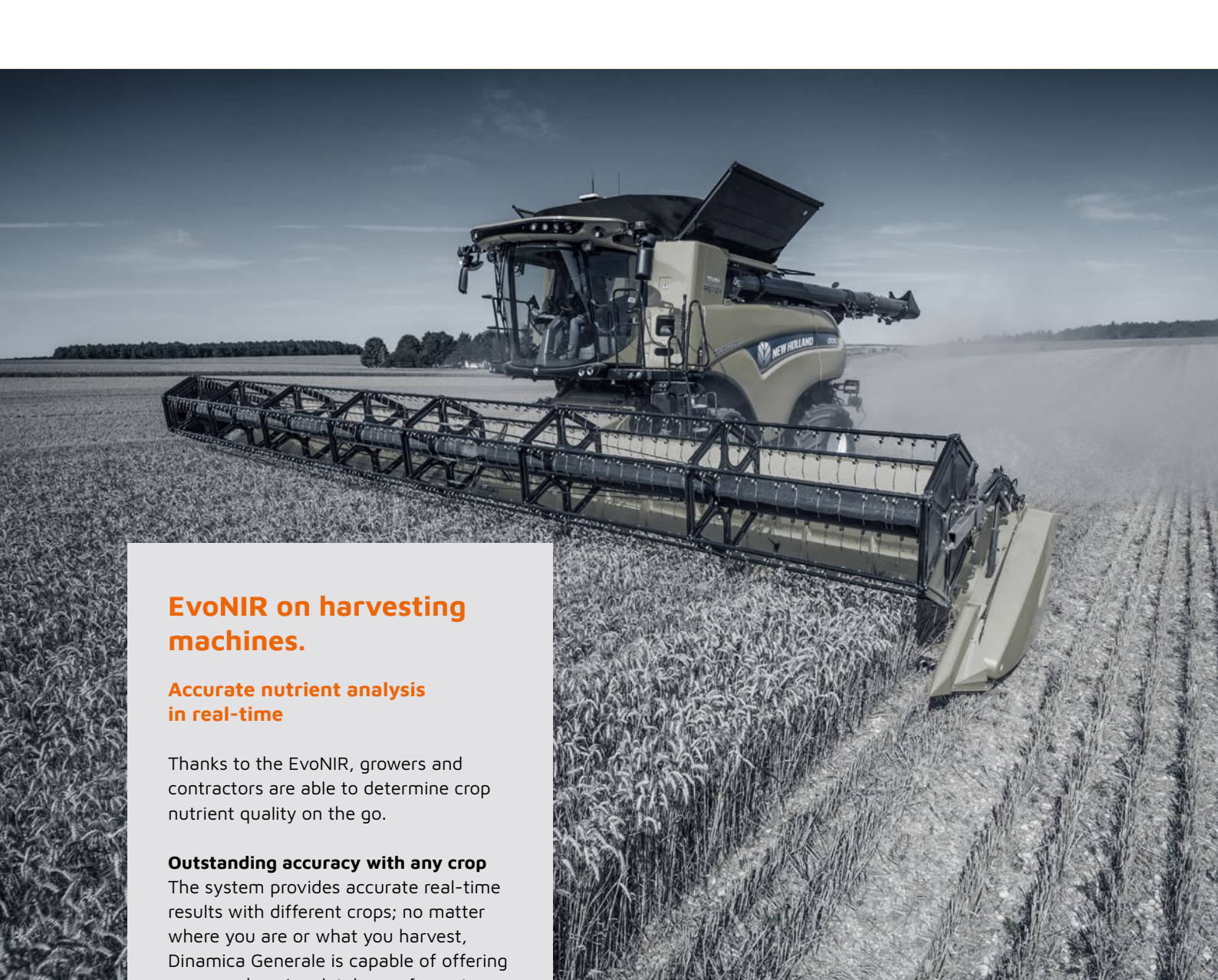
## **Biogas plant owners:**

Improve the efficiency of biogas production process.

## **Contractors:**

Provide additional services to customers by offering valuable crop analysis and yield maps. Make adjustments to chopper if excess ash is detected while harvesting.





## EvoNIR on harvesting machines.

### Accurate nutrient analysis in real-time

Thanks to the EvoNIR, growers and contractors are able to determine crop nutrient quality on the go.

#### Outstanding accuracy with any crop

The system provides accurate real-time results with different crops; no matter where you are or what you harvest, Dinamica Generale is capable of offering a comprehensive database of country-specific calibration curves to fulfil your needs.

#### Better inoculant management

Results provided by the EvoNIR sensor are the basis for a more precise application of silage inoculants at harvest because rates can be adjusted according to crop and dry matter readings. The result is higher quality silage with greater feed value and less spoilage.

#### Main Benefits

- Fit all makes of harvesting equipment
- Measure the real quality of grains & crops during harvesting
- Get higher prices for forages and hay being sold
- Calculate the right amount of inoculants to spray on bales
- Provide decision making info for each bale in terms of nutrients to feed animals





### Precision slurry application with EvoNIR

Precise application of slurry according to pre-determined crop nutrient requirements and regulations is now possible using near infrared technology.

The same EvoNIR system applied to harvesting equipment for crop analysis can be mounted on slurry tankers for measuring N, P, K).

Many farmers spread animal slurry on their crops; what is the main advantage of using the EvoNIR technology on slurry tankers?

- Analyzing slurry with EvoNIR makes spreading more accurate and economical
- Analyzing a batch of slurry in advance with our NIR sensor facilitates a more accurate soil fertilizing, this produces a money saving between 30 to 60 € per hectare compared to standard slurry spreading
- Monitoring slurry prior to spreading is advantageous to control nitrates and work within the legal limitations and prevent pollution
- Knowing the nutrient values of what you are spreading ensures accurate traceability
- Applicable to virtually any slurry tanker and reel hose on the market
- Field map reports to allow for complete traceability by farm, by field, by customer

<b>Main Benefits</b>	<ul style="list-style-type: none"><li>• More precise application of plant nutrients in forage maize, grass, wheat</li><li>• Easier and more precise slurry documentation for local regulations compliance</li><li>• Immediate information available</li><li>• Cost savings on: mineral fertilisers and sampling costs</li><li>• Increasing profitability and cash flow: invoice on quality not quantity</li></ul>
----------------------	---



## Precision Feeding to the next level

Real-time, accurate monitoring for animal feed using NIR analysis directly on the feed mixer. EvoNIR withstands tough production environments and gives instant results for optimised nutrition, herd health, increased milk production, and profitability.

No other feed management system on the market like EvoNIR.

Utilizing our patented technology, dairy farmers can analyze and automatically adjust the weight of every ingredient of the TMR batch for Dry Matter in real time to match nutritionists' recommendations.

Moreover, by installing the EvoNIR on the tank of the feed mixers for the Compact TMR preparation, the NIR sensor is also capable of measuring the homogeneity of the TMR with positive effects on dry matter intake.

### **By measuring Dry Matter and other nutrient content in real time, farmers can:**

- Decrease expensive ingredients in the ration
- Improve feed efficiency with stable feeding and minimized refusals
- Improve herd health
- Be financially rewarded by cutting costs and boosting production of milk, butterfat and protein and weight gains

### **Precision Feeding system with NIR analyzer Payback**

On average, farmers have seen payback from their system in as little as six months.

#### **Main Benefits**

- Never wait for lab results
- Never second -guess over- or under-feeding your animals
- Have greater control over weather events
- Reduce the feed refusal up to 2%

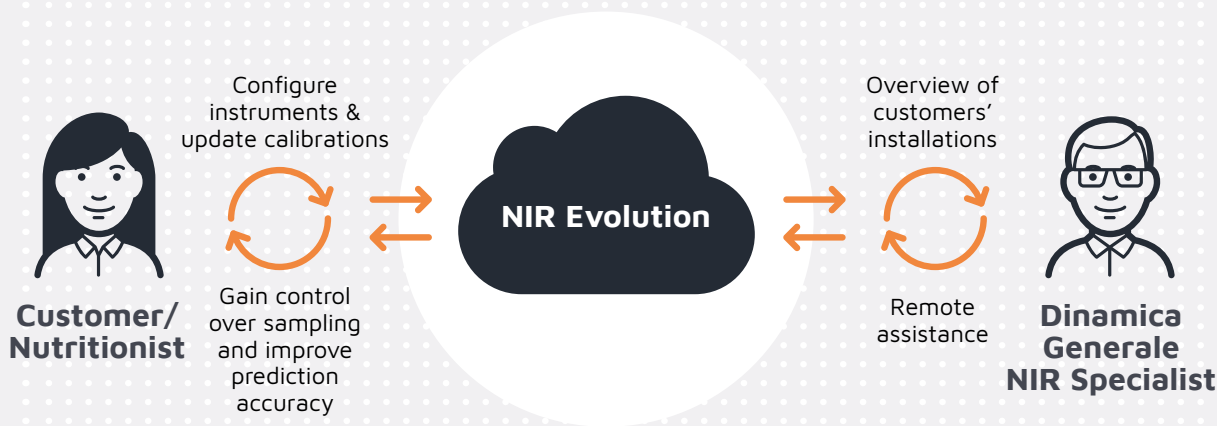


## The power of the Internet of Farming is Near!

The remote monitoring, diagnostics and update to calibration curves provided by Dinamica Generale improve your EvoNIR's performance by enabling our service personnel to remotely diagnose and proactively respond to any instrument issues.

When the NIR Evolution cloud software is initiated, the the analyzer's performance data is sent to a secure cloud based system on a periodic basis. This allows our service support team the ability to immediately and proactively troubleshoot, diagnose, and help maintain the highest performance of your NIR instruments.

**The Dinamica Generale Service department is responsible for monitoring the instrument's critical operating parameters, allowing you peace of mind that your unit is always functioning according to our specifications.**



<b>Features</b>	<ul style="list-style-type: none"><li>• Ensures EvoNIR analyzer up-time and accuracy</li><li>• Enables remote monitoring and diagnostics from almost anywhere in the world</li></ul>	<ul style="list-style-type: none"><li>• Decrease total cost of product ownership</li><li>• Reports historical performance data</li></ul>
<b>Main Benefits</b>	<ul style="list-style-type: none"><li>• Proactive problem detection and automated service initiation</li><li>• Decrease time for troubleshooting and diagnosis</li><li>• Remotely controlled resolution of problems</li></ul>	<ul style="list-style-type: none"><li>• Less time spent on the phone with service personnel</li><li>• Version control of calibration curves, software and firmware for the best NIR prediction</li></ul>



# FIELD Trace

## Make Precision Decisions

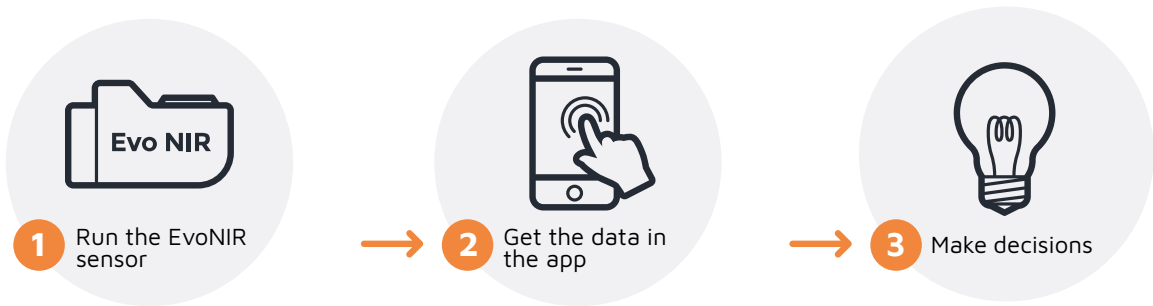
Field Trace is our specialized software for managing in-field operations from soil preparation to harvesting. All data acquired by the EvoNIR sensor is populated in the Field Trace Cloud Software to provide real-time field data in order to make actionable decisions now and historical data decisions later.



<b>Features</b>	<ul style="list-style-type: none"><li>• Map field boundaries by drawing fields on the screen</li><li>• Enhanced connectivity with machines operating in field based on Internet connection or USB technology</li><li>• GPS localization to define variable rate prescriptions</li></ul>	<ul style="list-style-type: none"><li>• Intuitive layer based architecture enables importing several data source types (NIR analysis, soil maps, field topography)</li><li>• Data reporting by farm, by field, by customer</li></ul>
<b>Main Benefits</b>	<ul style="list-style-type: none"><li>• Field Trace Cloud Software integrates real-time data allowing for better decisions thus optimizing field tasks, saving money and reducing the environmental footprint.</li><li>• Save time by wirelessly transferring data from field to cloud</li></ul>	<ul style="list-style-type: none"><li>• Leverage Field Trace Cloud Software for creating variable rate application of your inputs improving quality and crop yield.</li><li>• Access the software from virtually everywhere simplifies daily tasks and increases farm productivity and profitability</li></ul>

## Near Future

Real time quality mapping on your smartphone to visualize and analyze your job in the field.



<b>Main Benefits</b>	<ul style="list-style-type: none"><li>• Dynamic maps: interactive, digital field maps allow users displaying several types of information in real time</li></ul>	<ul style="list-style-type: none"><li>• Precision farming becomes easy and always available on your smartphone</li><li>• Export tool for FMIS</li></ul>
----------------------	--	---



**12 Global  
Calibrations curves**



**48 Local  
Calibrations curves**



**Global  
Lab network**

## Ingredients available

Decades of experience and know-how in NIR technology gives worldwide users the opportunity to choose GLOBAL Calibrations, usable everywhere and a comprehensive database of LOCAL country-specific calibrations that enable to customize even further each NIR analyzer developed by Dinamica Generale.

### Global Calibrations

Corn Silage	Dry Alfalfa Hay	Soybean Flour	Green Grass
Dry Grass Hay	Grass Silage	Alfalfa Haylage	Cow Slurry
High Moisture Corn	Dairy Cows TMR	Green Maize	Pig Slurry

### Local Calibrations

Corn Grain	Dry Beet Pulp	Dry Corn Stalks	T.M.R. Low Protein
Wheat Grain	Dry Corn Distillers	Green Rye	Dairy Bulls TMR
Olive Husk	Dry Grain Distillers	Oat Hay	Earlage
Soya Oilcake	Bran	Wet Brewers Grain	Dairy Cows TMR
Sunflower Oilcake	Wet Corn Distillers	Corn Germ Flour	Dry Corn Stover
T.M.R. High Protein	Snaplage	Green part of Maize	DDGS - Dried Distillers Grains with Solubles
Sunflower Meal	Green Alfalfa	Whole Wet Grain	Pellet Product
Wet Corn Gluten	Triticale Silage	Barley Silage	Whole High Moisture Corn
Sorghum Silage	Green Triticale	Soybean Grain	Wheat Hay
Rapeseed Meal	Wet Grain Distillers	Wheat Silage	Wheat Hay
Barley Grain	Oatlage	Wheat Green Forage	TMR - Dry Cows
Semolina Flour	Treated Corn Stalks	Unifed PR	

### DINAMICA GENERALE S.p.A.

Via Mondadori, 15 - 46025 Poggio Rusco MN - ITALY

[dinamicagenerale.com](http://dinamicagenerale.com)



[dinamicagenerale](https://www.facebook.com/dinamicagenerale)



[@dinamicagen](https://twitter.com/@dinamicagen)



[dinamica generale](https://www.youtube.com/dinamica%20generale)