



# Agronomic Data Optimization and Networking between Agricultural Machines

***Ignacio González ( New Holland Agriculture)***

17 de Febrero de 2016

# PLM – Precision Land management



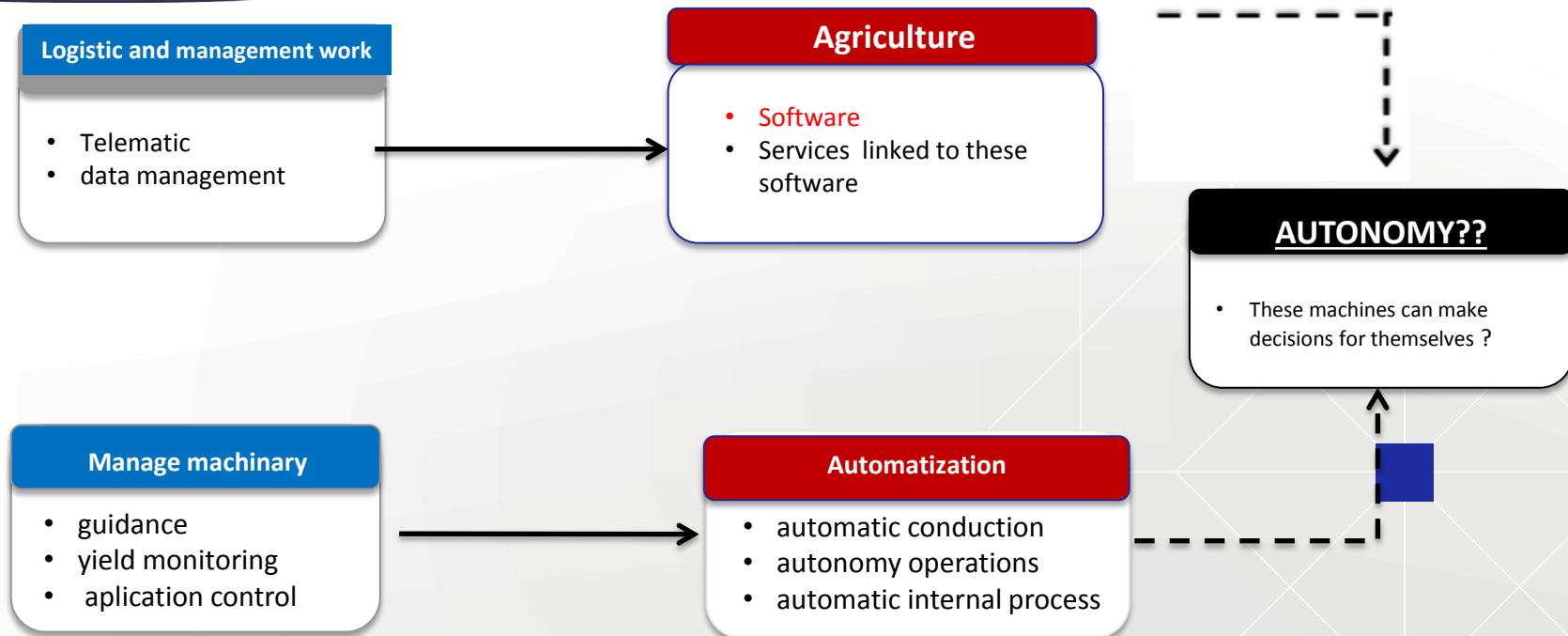
- ❑ Farm management system based on **information** and **technology** to identify, **analyze** and manage inputs and temporal variables soil , in order to obtain **the maximum benefit** and return again in the context of environmental protection”





# DATA MANAGEMENT “BIG DATA”

# Estimated evolution precision farming technologies



# Agricultural Ecosystem Management



Software ↔ Services

- ❑ *Analyzes real-time data of soil, yield production , inputs ...*
- ❑ *It 's allowed to share such data and assist taking decision and service technologies*

NOW
Instinct & Intuition Based
Corrective/Reactive
Human Insight
Decision Support



FUTURE
Fact Based
Directive
data Analysis
Action future Support

# Analytics: Evolution data



**Active** analysis

*How can we prevent it?*

Predictive analysis

*What will happen?*

Diagnostic active

*Why did it happened?*

Descriptive analytics

***Assisted Correct operations at future***

# Challenges to data management



- Farmer need to **understand** the information gathered by the machines
  - **Data** is not information
  - Information is not **knowledge**
  - So they can take the **right** decisions

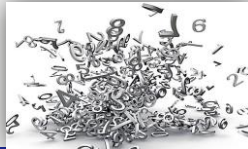
## ■ Data Privacy and Ownership

- The **only owner** of the data is the farmer
- **The Farmer** defines **who** gets access to his data
- The Farmer's data **won't be used** without his approval



## Data Standards

- **Too much** data from different providers and devices
- Standards facilitate the **collection** and the **analysis** of data



# Agricultural future Scenary



## INTERFACE

related with con  
SMARTPHONES and TABLETS

## INTERCONNECTED

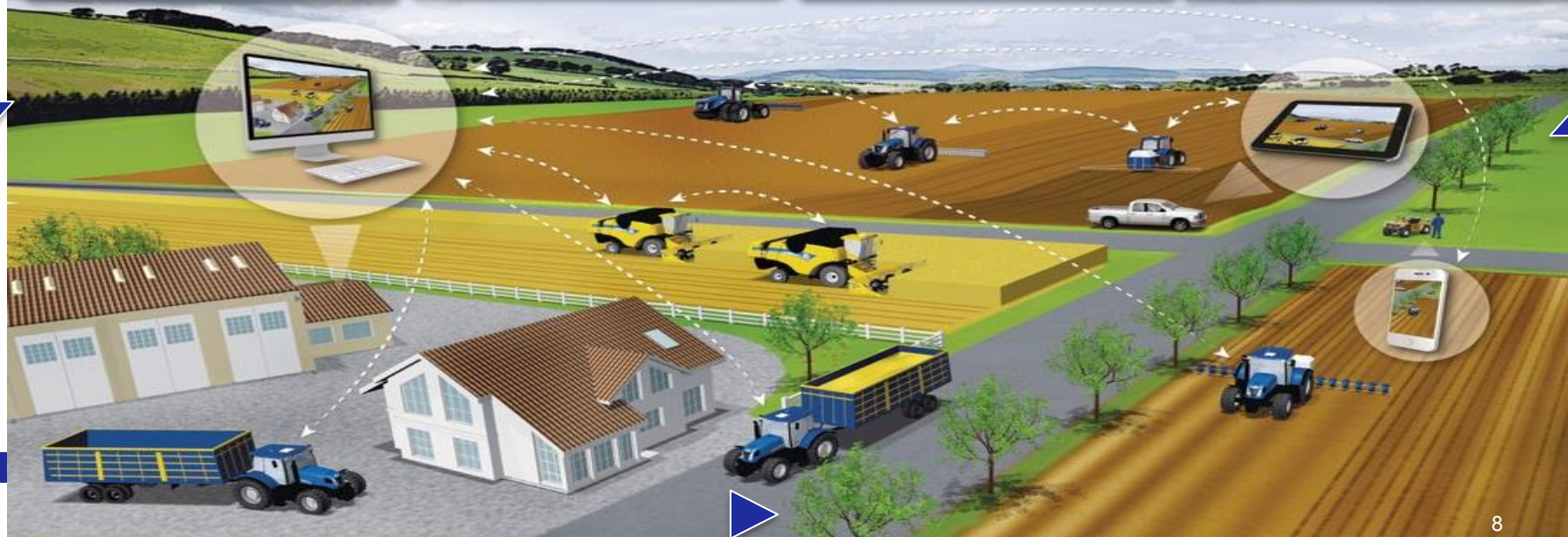
Telematic

## NO Restriction

general messages inside systems

## SUPPORTED

All platform





# Added value



- *The introduction of technology and equipment supported can add value and offer additional benefits for farmers*



# Machinery technology Optimization (precision farming pillars)



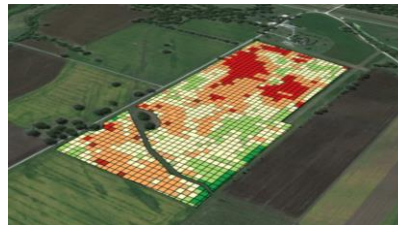
## Guidance system

- Higher precision
- easy management



## variable rate application

- reduce overlap
- optimization inputs agriculture



## yield monitoring

- data management uses



## Telematic and data management

- fleet control and remote access



improve efficiency and reduce inputs



sustainable environmental management



Increase Yield results and productivity



Help in decision-taking and control

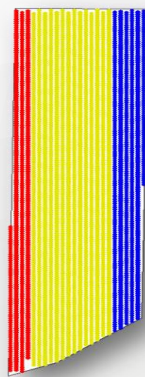
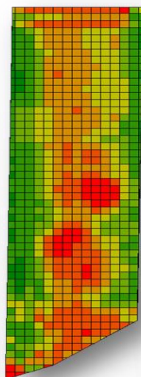


# PLM DATA MANAGEMENT SOFTWARE

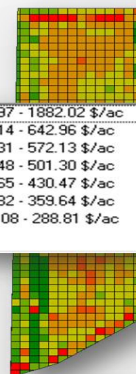


- **Main functionalities**

- ☐ Create your customer structure , farms , fields and events / task for quick access to your records.
- ☐ Create maps of variety performance benefits
- ☐ Create, edit or delete the guide lines
- ☐ create bill or invoice service



642.97 - 1882.02 \$/ac	1.95 ac	
572.14 - 642.96 \$/ac	1.49 ac	
501.31 - 572.13 \$/ac	4.33 ac	
430.48 - 501.30 \$/ac	13.87 ac	
359.65 - 430.47 \$/ac	12.89 ac	
288.82 - 359.64 \$/ac	2.23 ac	
-252.08 - 288.81 \$/ac	1.25 ac	



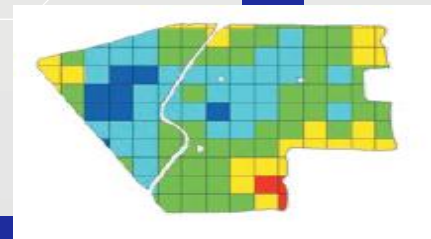


## Data evaluation.

- ☐ data settings
- ☐ Identification of areas with high or low performance
- ☐ variety determination
- ☐ "Comparison of cost benefit per hectare"

## Results field application.

- ☐ Mapping application
- ☐ Cost Calculate (seeds , chemicals ...)
- ☐ Reporting





# TELEMATIC





## ▪ Telematics

- **Tele**communication (Telecomunicación) + **Informatics** (Informática) =
  - Telematics is the **collection, processing and transmission of machine data.**
  - **It provide us information for making decisions** about machinery and field performance.
  - **“It works in passive mode** (access to the web for information) **and active** (sending alerts to the machine)

# Conectivity and messages



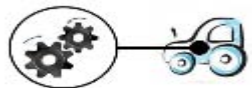
New Holland is **focused at the evolution technology**. The next generation machines will be engaged in operations



**Intuitive** easy operations



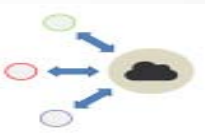
**integrated.** All the system is installed inside at the machine



**intelligent** actions at future



**Connected**. The vehicle will have a digital representation that allows the integration into the agricultural management and agronomic systems.



**Open** data increases the chances of vehicle use. external companies are be able to have add additional services



# Dashboard plm connect



# TELEMATIC PARAMETERS



- Engine hours
- Engine rpm
- Gasoil level
- Battery voltaje
- Oil temperature engine
- DEF level (urea)
- Km/h , mph
- Work control
- Deslizamiento
- Rpm back TdF
- Transmission oil temperature
- Gear
- Ha worked Cultivo
- operator

- Field
- Farm
- Task
- Events
- Alarms ID de vehículo
- Invoice reports
- Power management
- Can line advises



# PORTAL WEB ACCESS



The image shows a web portal for New Holland Agriculture's PLM Connect Telematics system. The background is a large photograph of a blue tractor pulling a yellow combine harvester through a golden wheat field. In the top left corner, there is a New Holland Agriculture logo and the PLM Connect Telematics logo. On the right side, there is a login form with fields for 'USERNAME' and 'PASSWORD', a 'LOGIN' button, and a link for 'FORGOT YOUR PASSWORD?'. To the right of the login form, the text 'welcome to New Holland' is displayed. In the bottom right corner of the image, there is a PLM Precision Land Management logo.

**NEW HOLLAND**  
AGRICULTURE

**PLM** *CONNECT*  
TELEMATICS

USERNAME

PASSWORD

**LOGIN**

[FORGOT YOUR PASSWORD?](#)

welcome to  
**New Holland**

**PLM**  
PRECISION LAND  
MANAGEMENT



■ Thanks for your attention; ;

