

# SATELLITE IMAGERY MANAGEMENT PLATFORM

Project Discovery, UX/UI, Dev, QA, DBA, DevOps, Soporte y Mantenimiento

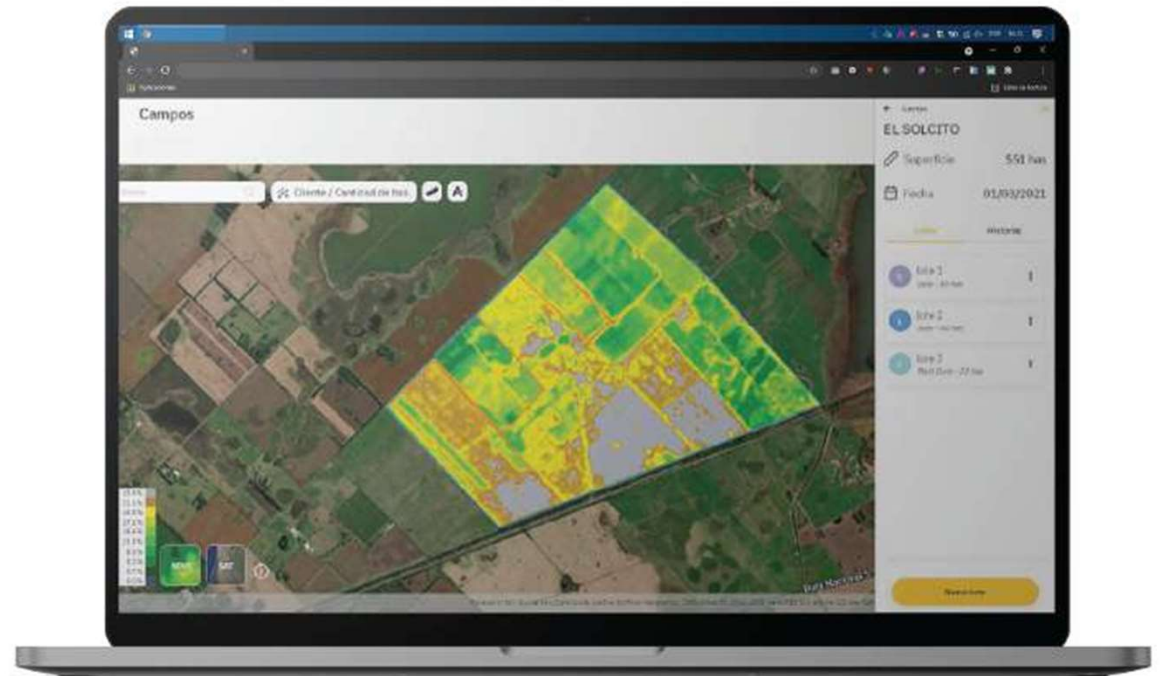
GRUPO  
LOS GR<sup>o</sup>BO

  
LAMANSYS

# Challenge

Los Grobo Group reached out to us to develop a new platform capable of visualizing and managing factors' incidences for several grasslands, fields and crops in order to offer clients new services and a flexible easy way to manage the sales department. This solution would also be accessible to farmers and producers.

We were tasked with developing a mobile solution for both Android and iOS, and a Web app which would allow clients and sales departments to create, mark and visualize grasslands, crops and fields with a georeferenced view and to access information provided by satellites.



### Test Area

Surface:  
551 hectares / 1361 acres

Date: March 2021

The information provided should allow clients and sales departments to monitor crop types and health, field productivity and other relevant information.

All information had to be displayed and outlined in an intuitive user-friendly interface integrated to the platform.

We were also requested that the information/data must be automatically generated on a weekly basis, processing satellite images covering an area over 2 million hectares (4,942,100 acres) in the country.



# Proposal

---

We helped design and define the different views appropriate for sales departments, farmers, and Los Grobo's management.



A software architecture strategy for satellite imagery collection and management was defined in order to achieve the required image resolution for each field and speed up the decision-making process for the company and farmers.

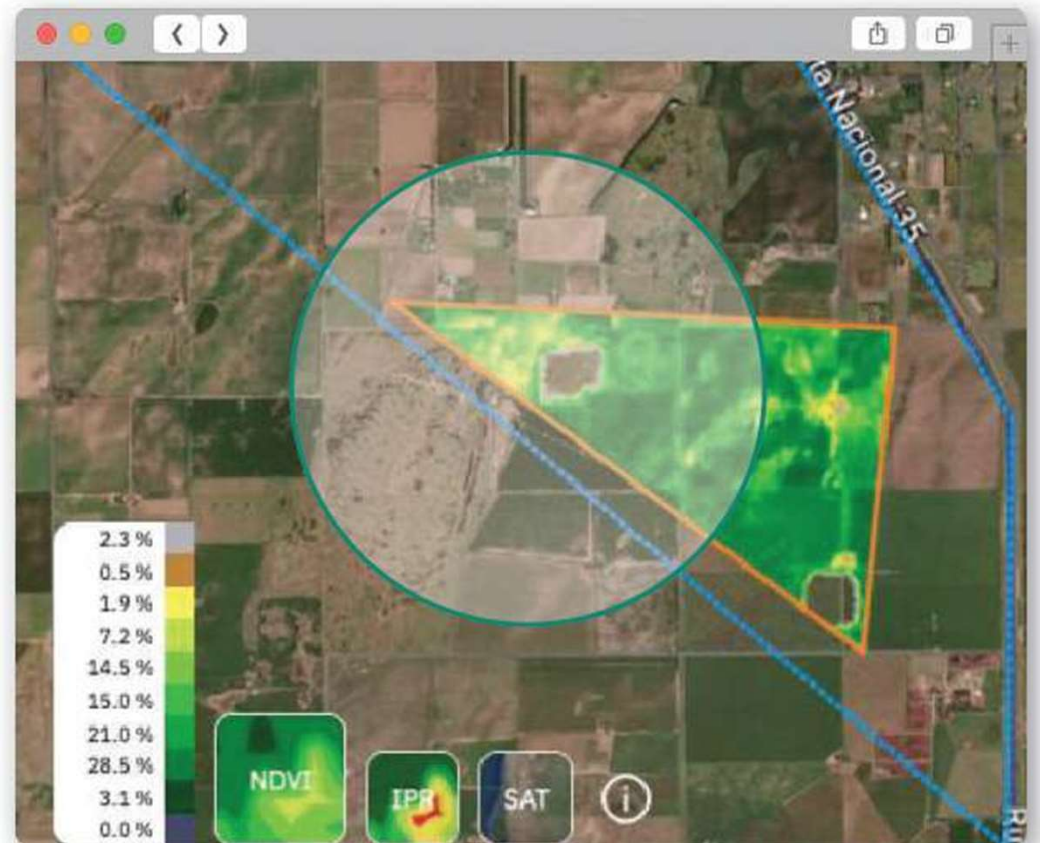


In order to assign different roles for the company and farmers we suggested a management system to ensure correct interaction with the application and provisioning of applicable data and information.

Different users must be able to input, create and edit field boundaries on a map in a given location in an easy friendly way.

Once the areas have been defined and saved, crop health indicators and values -according to different areas- are displayed allowing the detection of problems and identification of less productive areas.

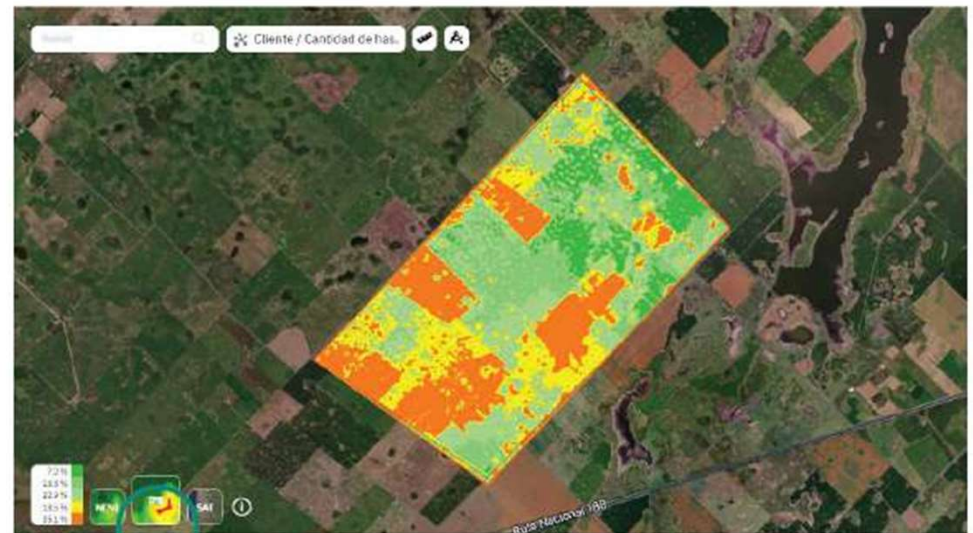
Users can visualize a satellite image, the **NDVI** and a **Relative Index Of Pasture Productivity** for each grassland and field allowing real-time crop monitoring.





**The sales department visualizes other specific indicators defined along with the company's agronomists.**

These aspects help enhance the farmer's decision making process and Los Grobo Group's commercial strategies definitions.



Relative Index of Pasture Productivity

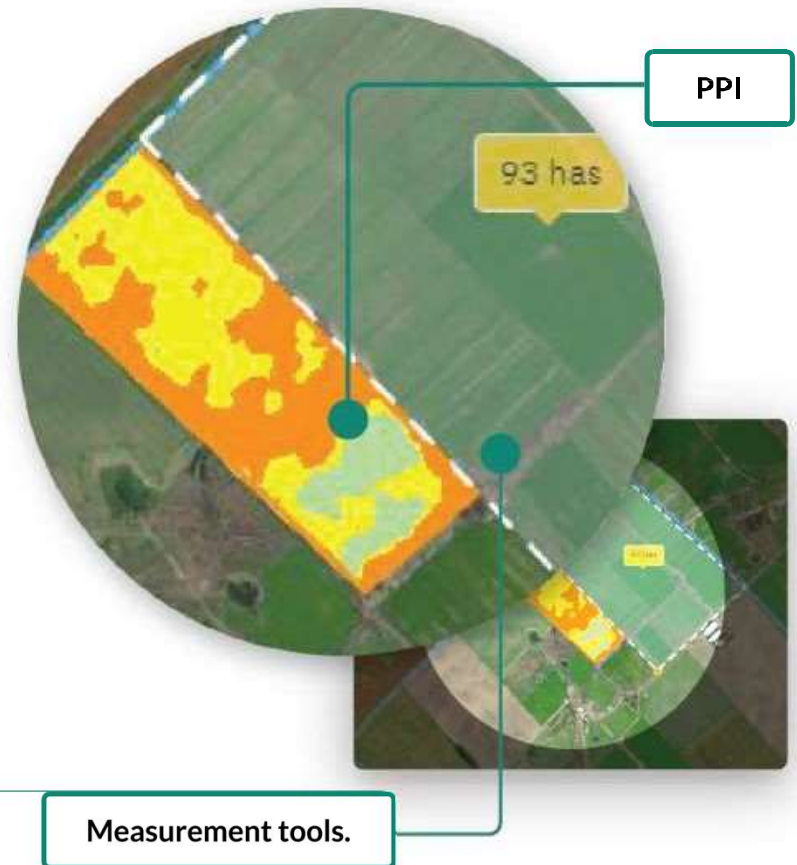
# Outcome

The comprehensive application design focuses on users' experience considering farmers, sales departments and company managers' perspectives.



## Collaboration

We integrated with external engineering teams on a daily basis in order to deliver on our commitments based on our client's business goals.





A **Kubernete** deployment providing high availability for the several apps accessed by end users was combined with **virtual machines and Docker** for batch processing and handling massive amounts of data.

**The first version of the application allows processing more than 2 TB of satellite data on a monthly basis and also provides visualization on how indicators evolve every 5 days.**



**Web and mobile versions for Android and iOS were developed allowing to:**

Manage NDVI, SAT and PPI indicators to identify quality and quantity of productive areas in a grassland and monitor the evolution of a specific field.

Visualize images and indicators by area, grassland and field.

Provide users with a wide array of tools to search, position, measure and analyze by also improving the user experience.

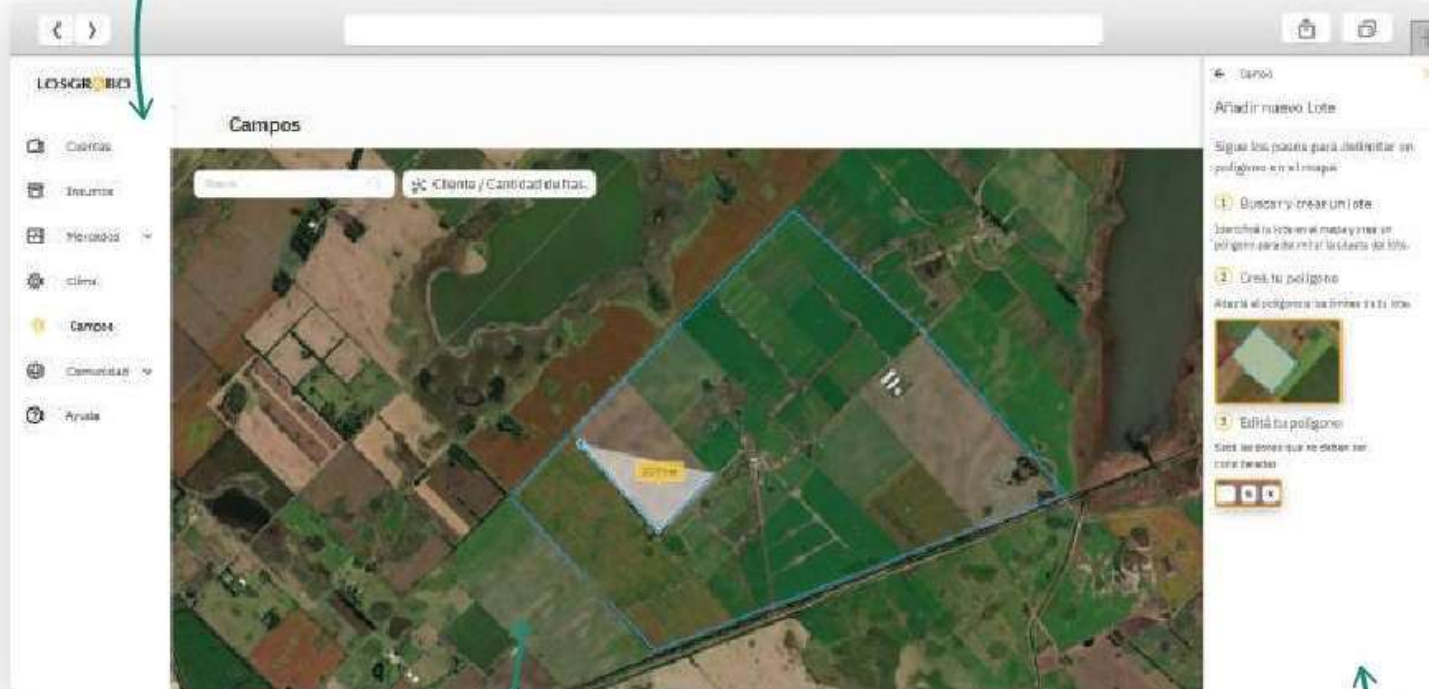


**Indicators**



**Analysis area**

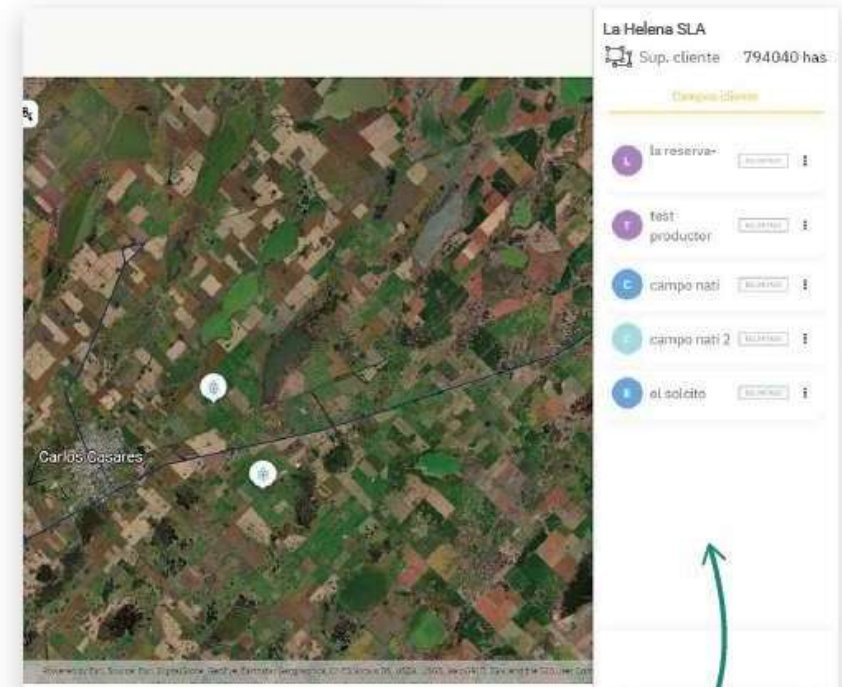
Integration with other modules within the platform developed by the company



Field creation by sales departments and clients

Contextual help for a better user experience

Each farmer defines their field layout and each field's specific information



ERP integration with other company tools.



LAMANSYS

[www.lamansys.com.ar](http://www.lamansys.com.ar)