YSERVICE YCONNECT

IOTBOX 2

PRECISION FARMING SUITE

YNNOVA

LEADING AGRITECH

YSUITE

YSUITE is Ynnova's **IoT** ecosystem **for precision agriculture:** a turnkey IoT solution that provides **hardware**, **connectivity**, **infrastructure**, **applications** and **APIs**.

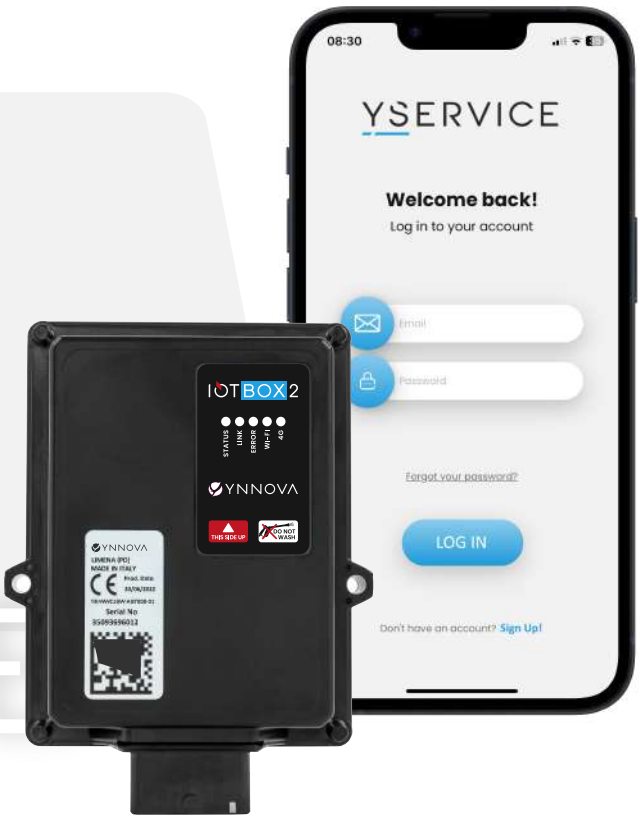
HARDWARE IOTBOX2

The **mobile network connection unit** for **real time data ghatering.**
Relevant features:
-great computing power;
-connectivity at the highest levels;
-tons of available peripheral;
-global certifications;
-small size;
-automotive grade;
-IP65;
-integrated SIM and GPS;
-global connectivity support.

SOFTWARE YCONNECT YSERVICE

The software platform for highly scalable **data collection and visualization** made up of:
- backend infrastructure;
- web client, compatible with major browsers;
- mobile APP, compatible with iOS and Android.
It is a multi-tenant multi-database application designed to be easily verticalized and customized both from a functional and from a graphic and brand identity point of view. Along with the hardware counterpart it allows the **remote management of agricultural machinery** and the **agronomic management of the farm**.

IOTBOX2 collects information from the implement that is being used by connecting agricultural machines to **YCONNECT** and **YSERVICE**, which allow to remotely monitor, control and operate the machine fleet. IOTBOX2 **makes agricultural machines compliant with the digitization paradigm** and the system itself allows the **monitoring and traceability of agricultural processes**, enabling **greater efficiency** and **reducing the waste of resources**.



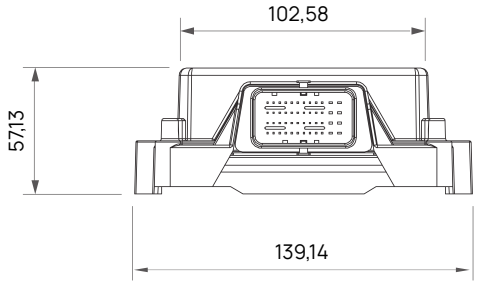
IOTBOX2 it's a ruggedized module that **OEMs install in agricultural equipment** to collect data (e.g. location and drivetrain component status). It can be connected very easily to the battery power supply of the tractor and to any on-board computer via a dedicated harness. IOTBOX2 **uploads** the **data** over 4G LTE or Wi-Fi **to** Ynnova's **YCONNECT and YSERVICE** platforms, or any other integrated platform such as **XFARM**, enabling bi-directional communication with the cloud, which is a fundamental requirement to access the digitization paradigm. The cloud system is easily accessible from a PC or smartphone using a standard web browser.

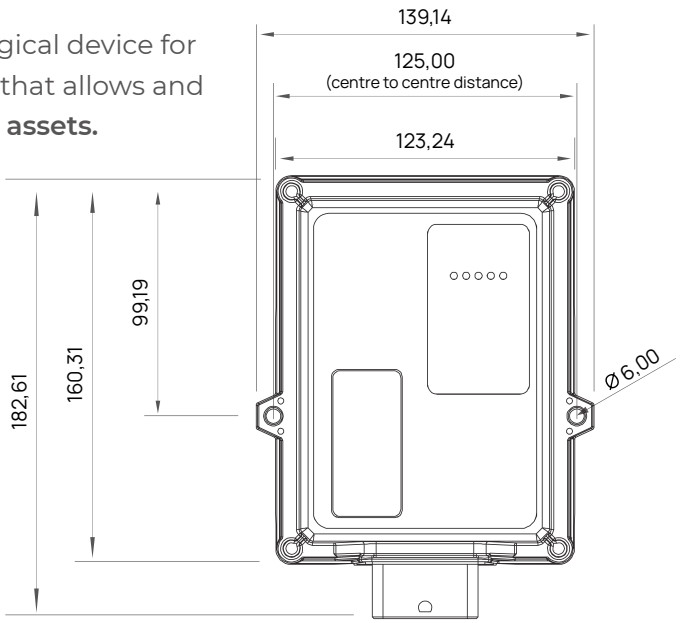
IOTBOX2

ISOBUS COMPATIBLE

IOTBOX2 is the cutting-edge technological device for the **agricultural mechanization** world that allows and simplifies the **connection of company assets.**

Dimensions:





System:

-CPU NXP iMX6ULL. Core Cortex A7 @ Up to 900 MHz;
-Memory 512MB DDR3 800;
-Storage 8GB eMMC.

Electrical features:

-Supply voltage: 9-32 VDC;
-Reverse polarity protections: yes;
-Current consumption: max 1A (+12V ON).

Connectivity:

-WiFi: 802.11 a/b/g/n/ac;
-Mobile: 4G, 3G, 2G (EMEA, North America, APAC, LATAM);
-GNSS: GPS, Glonass, Beidou, Galileo, QZSS constellations.

Available Peripherals:

- 2 x RS232 Serial ports;
- 1 x RS485 Serial port;
- 2 x CAN BUS Up to 1Mbit;
- 2 x CAN BUS Up to 250 Kbit;
- 1 x USB OTG (Host and Device);
- 2 x Open collector outputs;
- 2 x Push-pull outputs;
- 2 x configurable digital inputs (4-20mA/0-5V/0-10V/NPN digital input/PNP digital input);
- 2 x Fast digital inputs (up to 2KHz, tested up to 8Khz...)
- 1 x Ethernet.

Mechanical features:

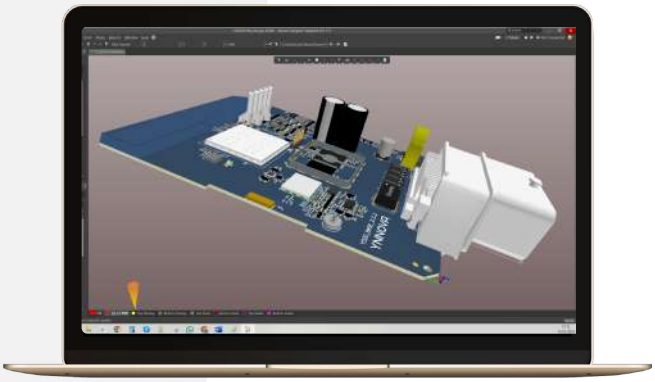
Operating temperature: -40°C-60°C;
Protection grade: IP65;
External body: ABS

IOTBOX2

ISOBUS COMPATIBLE

IOTBOX2 is the **mobile network connection unit** for real time data ghatering for continuous 2-way **global communication**. This 'automotive grade' device is natively integrated with Ynnova's cloud portals, YSERVICE and YCONNECT, and with the **XFARM platform**. It guarantees **worldwide 4G coverage** and **ISOBUS compatibility.**

IOTBOX2 comes with a **built-in GPS antenna** and an **integrated SIM** that guarantees **worldwide 4G connectivity**. This frees **OEMs** from the time and expense of working with multiple SIM suppliers. It ensures their customers have mobile network connectivity everywhere their **agricultural equipment** is used. An integrated SIM also frees OEM customers from using smartphones to connect IOTBOX2 to the cloud. This solution was meant to make IOTBOX2 compliant to be **distributed worldwide.**



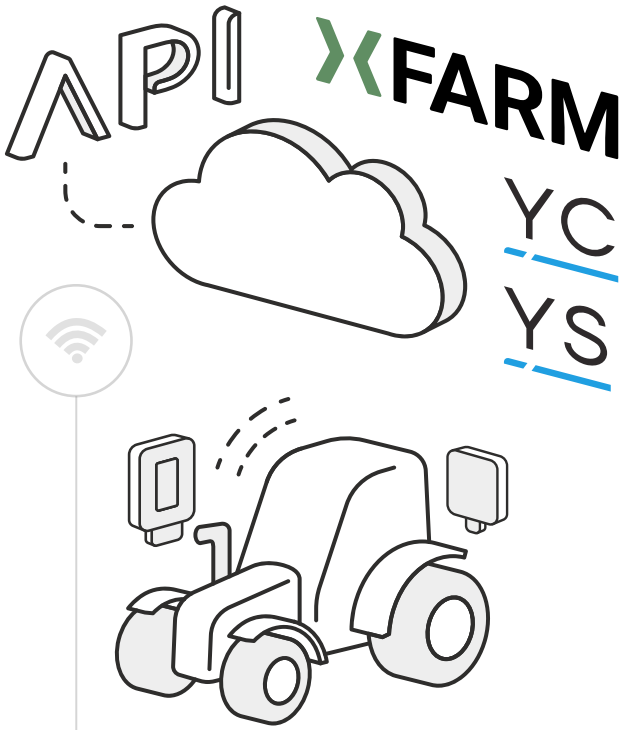
IOTBOX2 manages a number of **machine parameters**, some of which are useful to OEMs and some of which are useful to **farmers**. In order to manage additional working parameters, it is possible to **install specific sensors on the machine**. IOTBOX2 then sorts the data and sends it to either YConnect or YService. The collected data, stored on **Ynnova's servers**, is transmitted and managed following the **banking and military standards.**

Worldwide

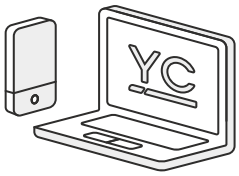
YSUITE

XFARM READY

Ynnova's cloud platform enables and facilitates the remote management of agricultural machinery and the agronomic management of the farm. Data transfer to XFARM platform for data collection and processing is natively enabled, to easily and automatically create a digital field registry and focus on core farm activities.

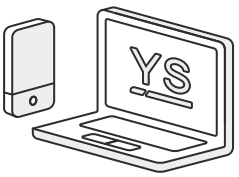


YCONNECT



Farmers web portal
for the **agronomic management**
of the farm.

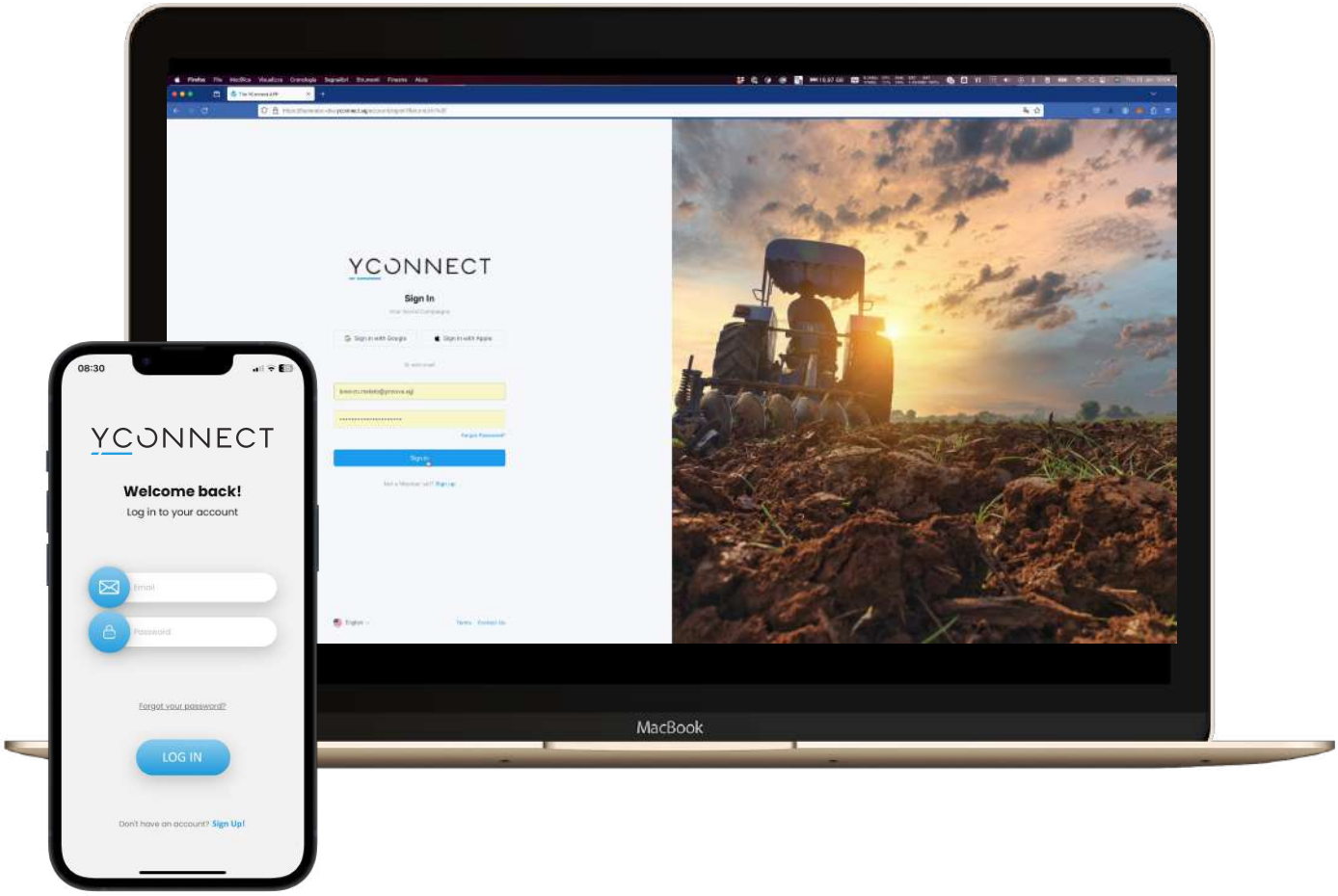
YSERVICE



OEMs web portal
for the remote **after-sales service**
management of machines, worldwide.

Cloud

YCONNECT is the **farmers web portal** to remotely control and manage farm equipment, fields and crops. Easily access the system by entering your credentials from PC, smartphone or tablet using a standard web browser.

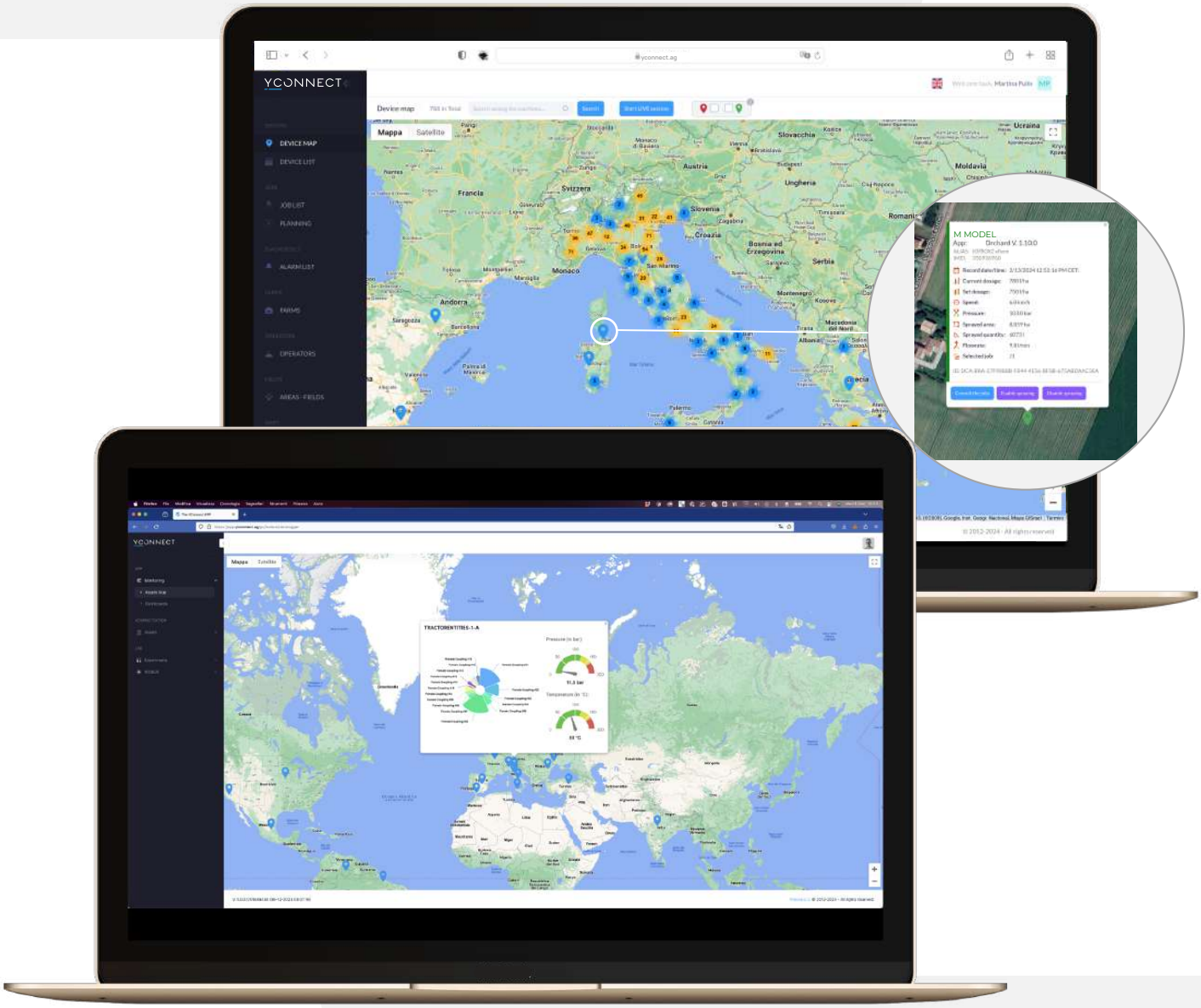


Ynnova's turnkey telemetry system help farmers **maximise operational efficiency and productivity** while **minimising costs and resources waste**. YCONNECT is a **DSS - Decision Support System,** a user-friendly tool for managing farms and equipment: streamline resource allocation, track field work history, predict machine maintenance needs and much more.

YCONNECT

FARMERS PORTAL

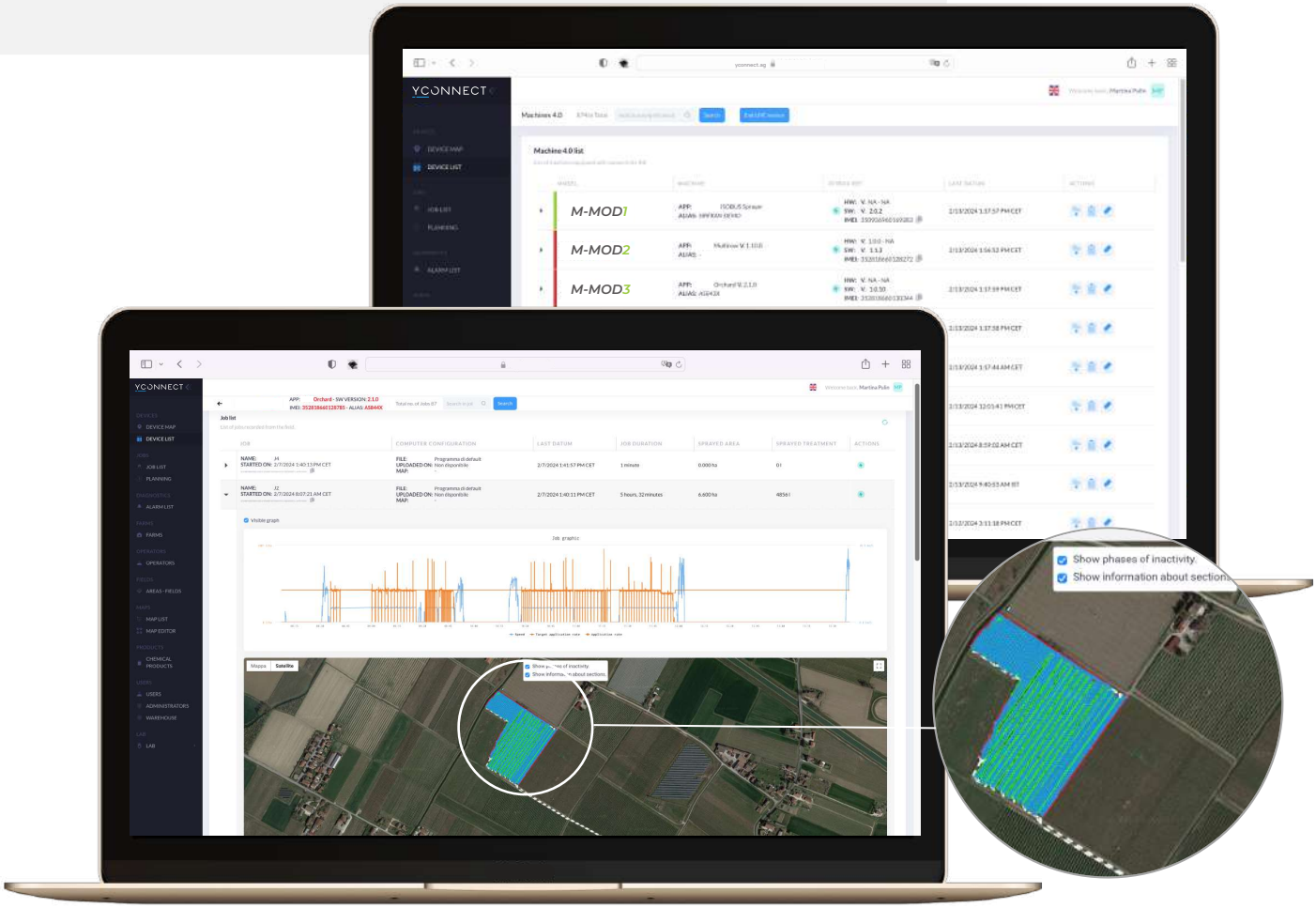
Monitor in real time all the processing data arriving from the connected appliance (ex: the spraying computer, the seeding computer and any compatible appliance).
It is possible to filter the map view using the integrated search engine.



By clicking on the marker, a pop up window will appear and show the **variables status** in real time, for example the machine speed, set dosage and current dosage, flow rate, selected job and so on.

Real time

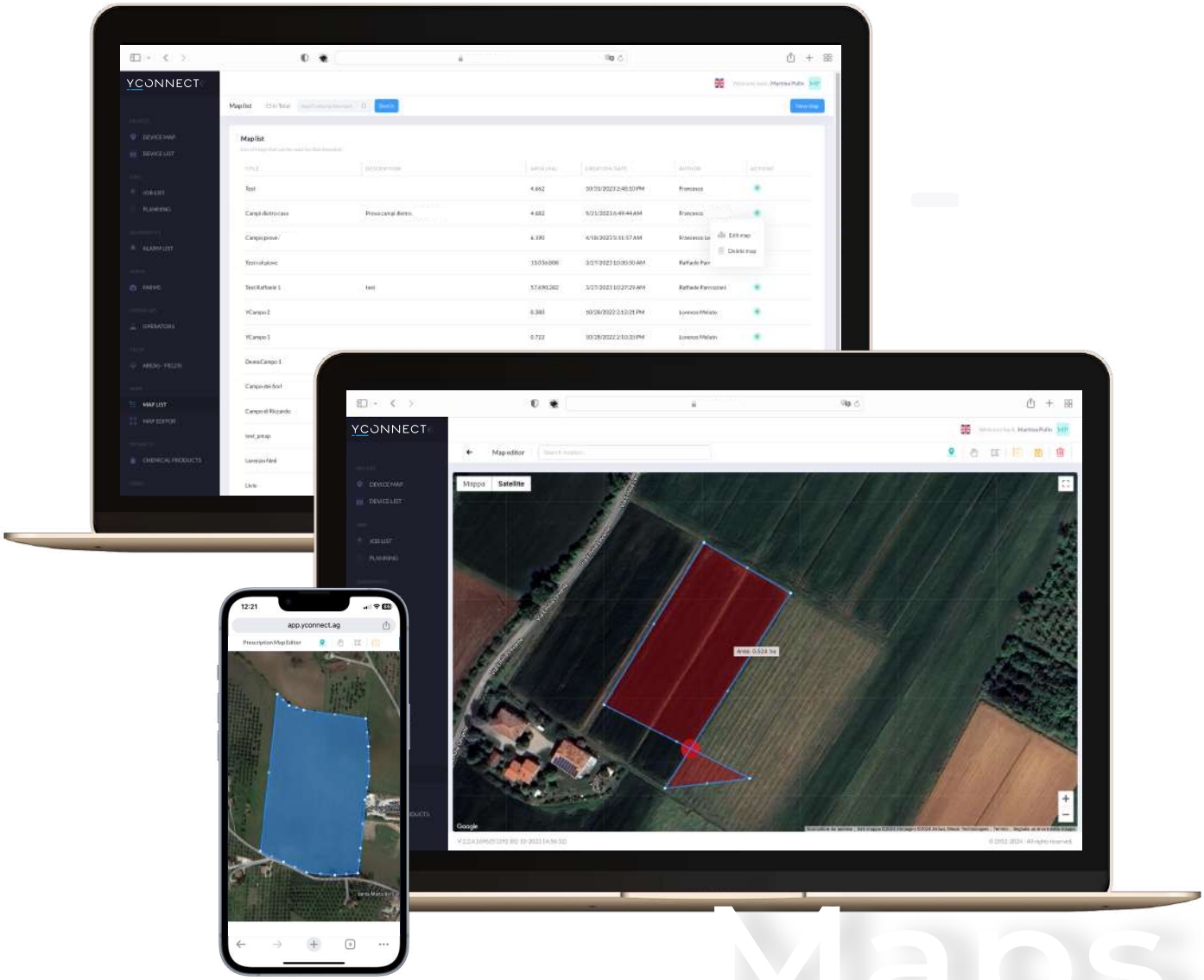
You can easily search and select the machines you want to monitor from your database. This allows you to view **both real-time and stored operating data** according to your needs. You can access the list of jobs, which summarizes the key totalizers in one line, either from the device registry or from the real-time map view.



From the job the list, delve deeper into each job to see the **graphic representation of the machine's path in the field** along with phases of inactivity and information about the treated sections. A **chart** summerizes the **key variables** involved during processing. As **the chart and the map are integrated** they can be compared: by clicking on one point on the former, the same is highlighted in the latter and viceversa. This allows you to easily identify any anomalies and to gain meaninful insights into every moment of the performed job.

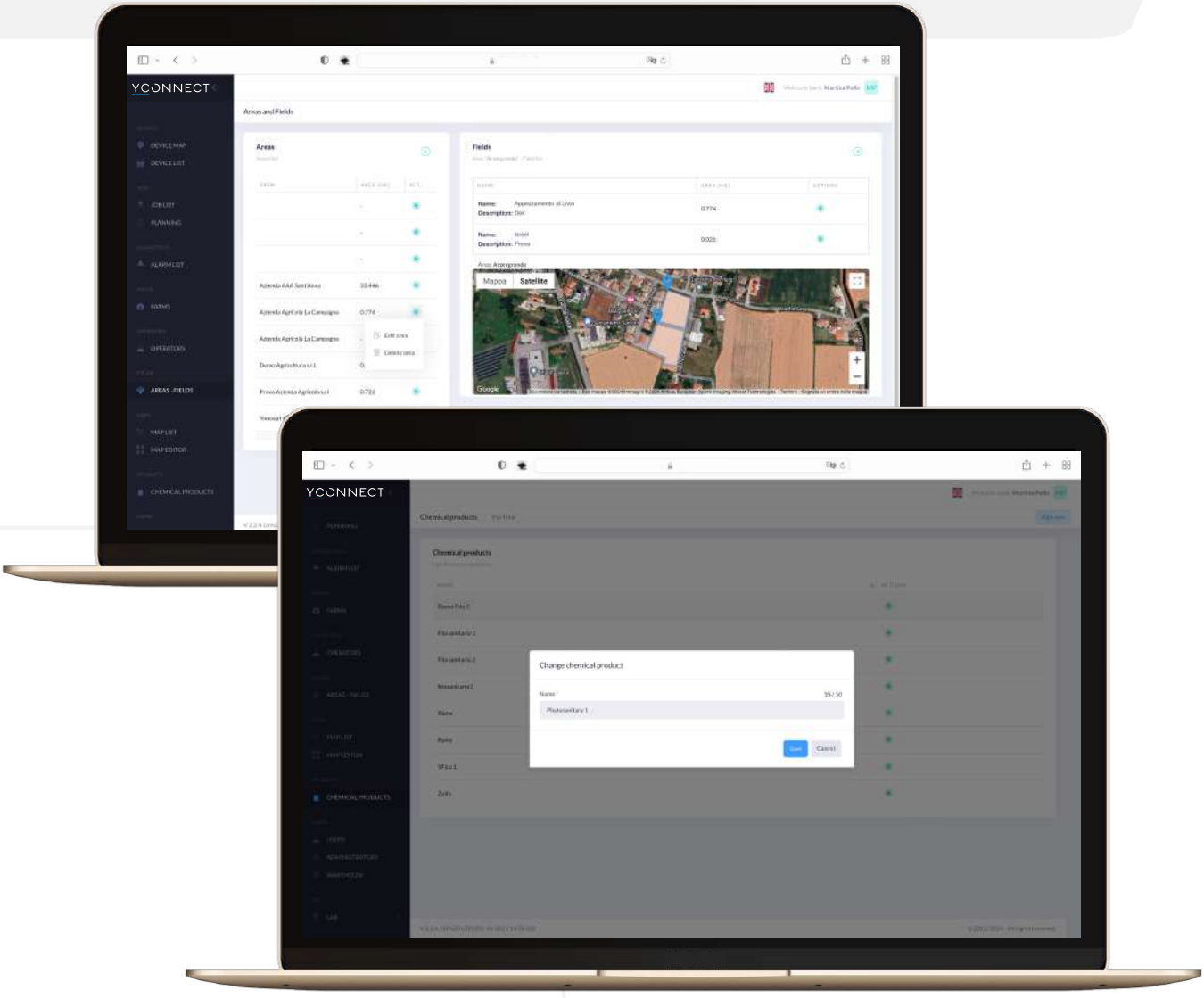
Monitor

Quickly draw **prescription maps** thanks to the user friendly **map editor** to perform defense, fertilization, and seeding operations by taking advantage of variable rate technology. The editor guides you by highlighting common errors such as crossing segments and graphically shows the key map's elements such as dimensions in hectares.
From the map list you can edit and delete prescription maps at any moment.
Send the maps to IOTBOX2 which will transfer them to machines' VT or computer.



Maps

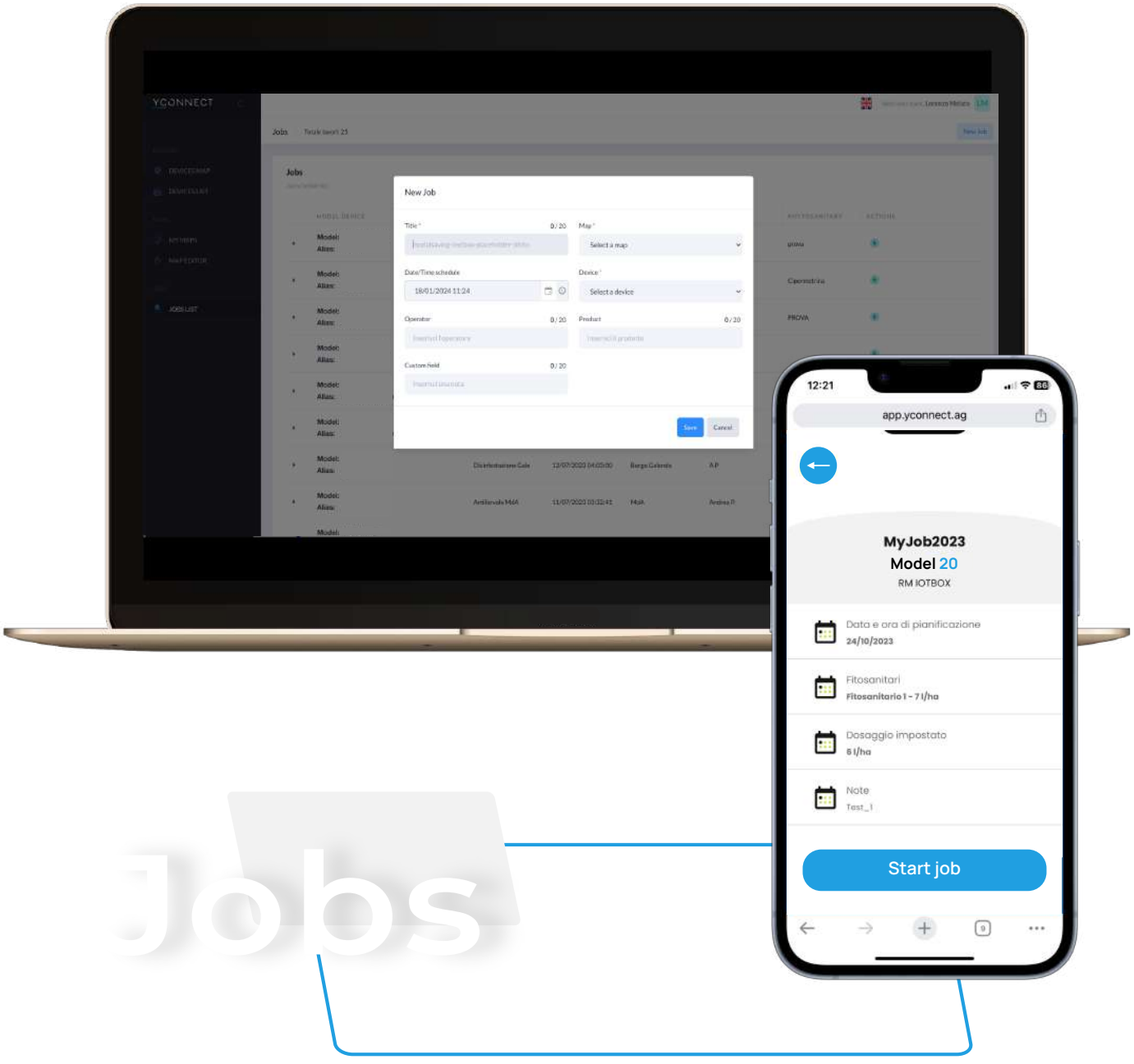
The agronomic management system enables you to **organise your farms, fields and crops.** Simply draw the boundaries of your fields, name them, associate crops with fields, field with farms and much more, to meet your company's needs.
An overview of all its information is available for each field.



Make a list of the chemical products used by your organisation, associate chemicals to crops and fields, use the phytosanitary registry to better define your job order.

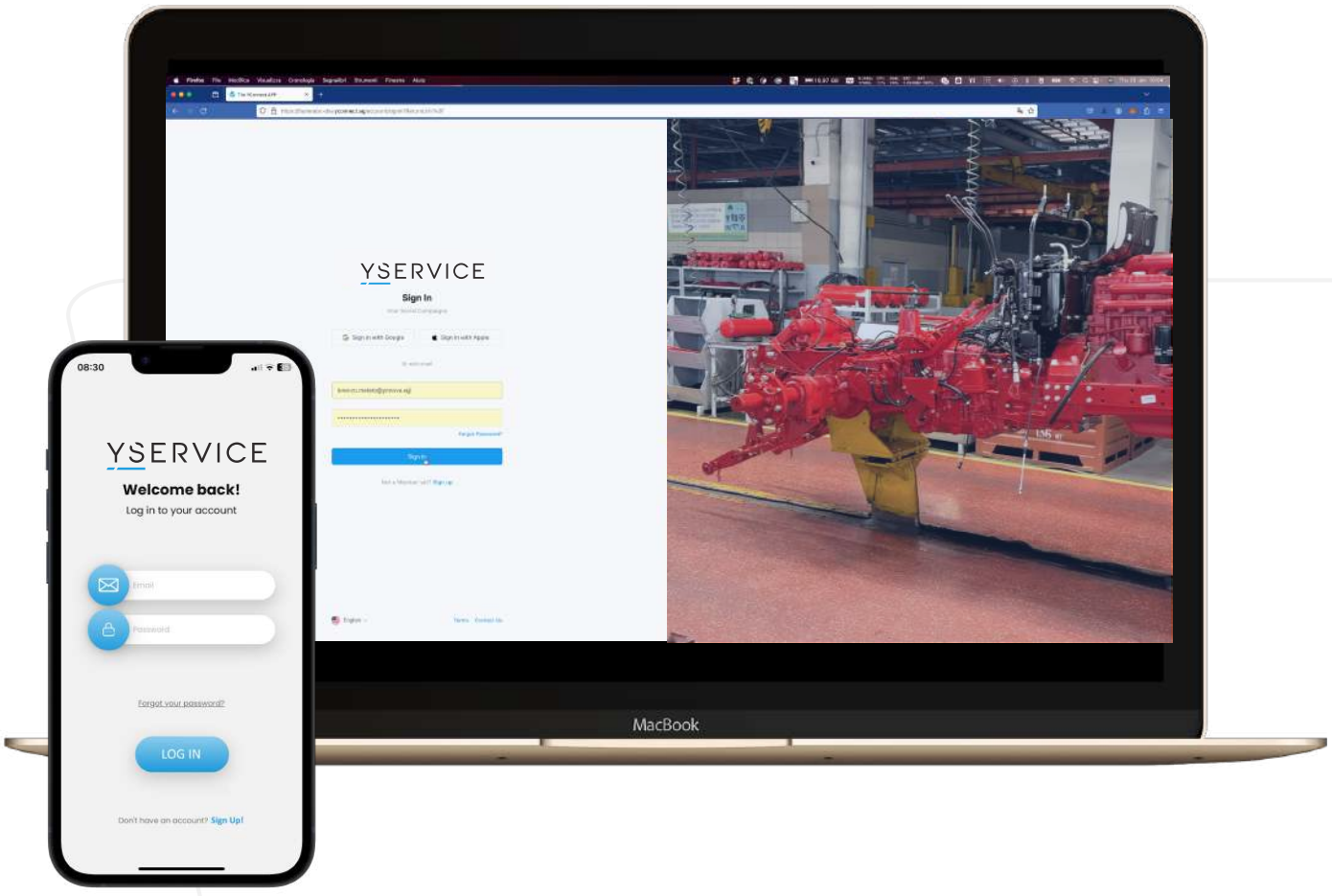
Field management

Give access to the platform and **assign roles** to your farm staff. Register farm employees and add information regarding **personal records and permissions** for viewing and editing.
Plan the activities to be carried out by the various operators by assigning to your staff a machine, a task, a field and plant protection products to be used.
Shedule date and time for the work to be done and send via APP the job to the chosen operator. The operator will be able to remotely send the **"start job"** command.

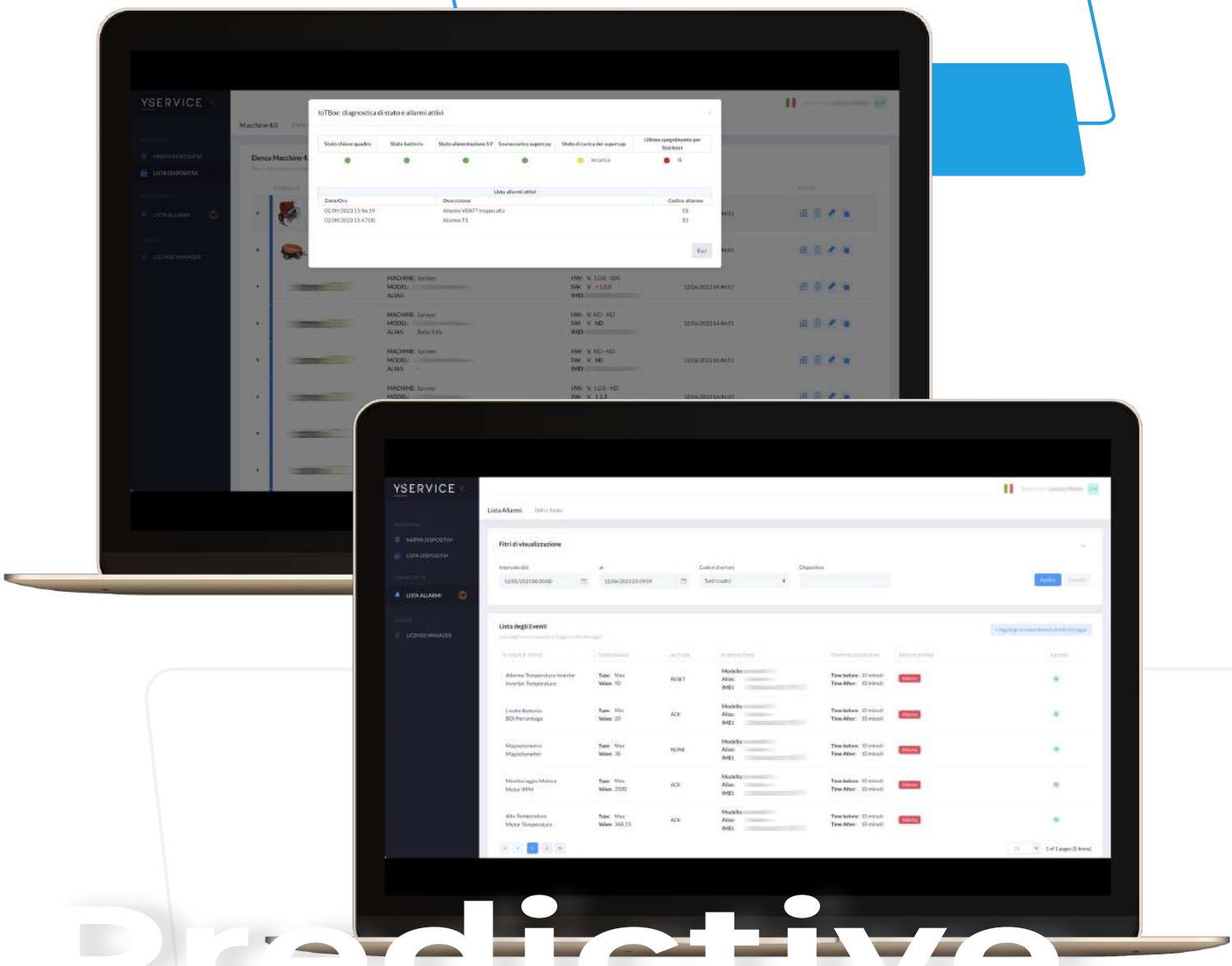


Jobs

YSERVICE is the cloud based portal designed to enable **OEMs to control their production and to manage the after-sales service** of their machines. YSERVICE performs all the YCONNECT functionallities and makes available to OEMS all the advantages deriving f rom the **servitization business model**, from growth in revenues and profits to improved responses to customers needs. YSERVICE is **scalable and accessible worldwide** using smartphone, tablet or personal computer.

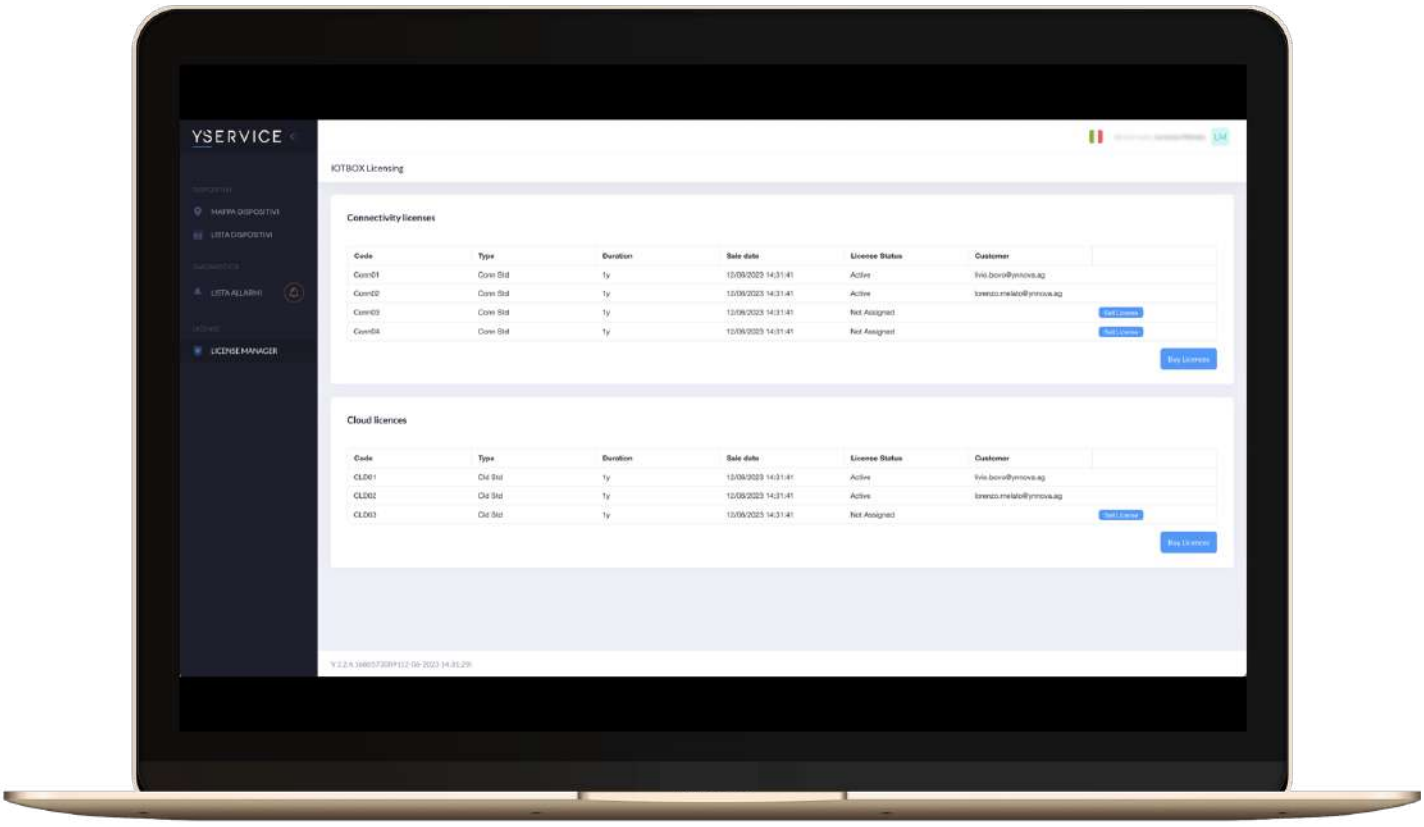


YSERVICE transforms data into information useful to OEMs. When specific changes in assets health are identified and specific circumstances and patterns occur, YSERVICE indicates potential problems or **pending asset failure**, **triggers an "event"** and, in real time, sends an alert to the OEM. Thanks to YSERVICE it will be possible to carry out **machines predictive manteinance**, enabling timely repairs before failures occur.
The alarms and failures list will remain at OEMS disposal for consultation.



Predictive
maintenance

YSERVICE allows OEMS to **remotely manage** the **mobile data subscriptions** sales to clients and the request to Ynnova of new mobile data subscriptions to be sold.



Licence

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