



### SynField automates your crop!

With many years of experience in automation and information technology, building on partnerships with agricultural universities and research centers, Synelixis presents **SynField**.



#### SynField smart agriculture

SynField is Synelixis' flexible, vendor independent solution for smart irrigation and water management applications, such as advanced control and monitoring of small-medium sized farms and water pipelines network.

### The system to make your crop smart

SynField is a combination of software development and hardware engineering that offers innovative services to the modern farmer based on IoT, telecommunications and cloud technologies. It is Synelixis' flexible, modular and affordable high-tech solution for precision farming applications ranging from small to large farms. SynField provides remote monitoring of climatic, environmental and soil conditions, while also providing remote control irrigation water management, pressure network management and prediction of diseases in different crops.







SynField's integrated solution Monitoring & Remote control irrigation

The Synfield system offers remote monitoring, remote control of irrigation and water management. This control can be based on rules, either fully or partially automated, and can be extended to other switch-controlled systems, based on time parameters and sensor values.

### SynField Precision Agriculture Monitor your crop

We have already integrated more than 50 state of the art sensors and actuators. The farmer can access real time data and monitor the climatic, environmental and soil conditions of the crop using his personal computer or mobile device.

•Air Temperature Relative humidity •Wind speed & direction •Rainfall Leaf wetness •Soil moisture •Soil temperature Soil electrical conductivity •Water flow/pressure Irrigation control Automated/rule-based irrigation •Remote –on demand- Irrigation

### GPS tracking Power autonomy integrated solar panel Solar radiation •Remote water drill control Water content Photosynthetic activity Solenoid valves/ relays •SMS/Email Alerts Robust and waterproof design •Crop/Soil-type irrigation rules Pipeline leakage detection





## SynField Precision Agriculture Remote Control Irrigation

Farmers can use their personal computer or a mobile device to access real – time data and irrigate remotely

SynField provides an automatic irrigation control, based on calendar, crop growth or environmental conditions (i.e. soilmoisture levels and low-temperatures/ice prevention). SynField also provides ability for manual adjustment of the solenoid valves.

In addition, SynField can monitor pressure at pipelines, Start/ stop water pumps and measure water level in tanks.



### **Monitor & Control** Monitor and control your crop remotely from your computer or mobile device, wherever you are. **Remote Irrigation** Enable automated irrigation, based on preset rules or irrigate on demand whenever you want, wherever you are. Water management Monitor the pressure at pipelines, water level in tanks and waterflow.



### SynField Precision Agriculture Full control at your fingertips

SynField provides a complete solution for the farmer. Monitor all your fields, regardless of number, wherever you are. Get alerts and notifications, set automation rules, irrigate and manage your crop at will. **Save time, effort and money.** 



55%

30<sub>b</sub>

Remote control smart irrigation

Time savings / Reduction in labor

Reduction in water waste up to 55%

Reduction in fuel consumption

Efficient use of fertilizers and pesticides

Real time information and alert notification

Recording and scheduling

# Your crop is one click away



HARDWARE

### **SynField Head nodes**

Meet the SynField product Family

The SynField product family was developed to meet all the needs of the modern farmer



The SynField Head-nodes are:

- ✓ Robust
- ✓ Waterproof
- Fully autonomous devices with integrated solar panel
- ✓ Easy to install

The SynField Head-nodes can support:

- ✓ Up to 8 sensors
- ✓ Up to 8 actuators
   To collect data from the field and enable automations

The SynField Head-nodes offer flexibility:

 ✓ The device support a plethora of offthe-self sensors (vendor independent) and actuators (valves, relays). HARDWARE



### SynOdos Peripheral Node

An ideal solution for large farms!

The SynOdos is a **wireless peripheral monitoring and control device** which connects wirelessly to a SynField head-node that acts as a gateway. The device is autonomous with integrated solar panel and large rechargeable battery and supports up to two sensors and up to two actuators (valves, relays, remote irrigation etc).



The interconnection between SynField and SynOdos device is based on the LoRa wireless technology. The distance between **SynField** head node and **SynOdos peripheral** node can reach **up to 1.5 km**.

You can set up a network of interconnected devices (up to 8 devices per head-node) that cover the area of large farms **wirelessly, efficiently and economically**.

#### HARDWARE

### SynPump Automated Water Drill Control System





**SynPump** is **Synelixis'** innovative solution, for the management and **automated control of the water from a shared drilling site**. The SynPump is an integrated system that allows irrigation planning and timing among the beneficiaries of the water site.

The user can request the activation of the drilling either locally using RFID, or remotely using the SynField Water Management mobile application.

The SynPump system is interconnected with the SynField platform which allows near real time remote sensing and remote automation control.

#### HARDWARE

**SynAir** 

#### Professional Air Quality Monitoring System



The professional SynAir device has an integrated platform of air quality sensors, capable to measure temperature, relative humidity, barometric pressure, suspended particles (PM1.0, PM 2.5, PM4, PM10), total volatile organic compounds (VOC), CO, CO2, O2, O2one and NO2. SynAir can also detect ethanol.

Measurements of air quality characteristics are sent from the SynAir device to the SynField platform.



You can set alerts so that you are automatically notified in case any of the criteria you set are met.

SynField Water Management mobile app



# Software SynField platform

Monitor and Control your crop remotely, 24/7!



#### SOFTWARE

### **SynField mobile applications**





The SynField application is part of the SynField digital ecosystem and provides you with the SynField web platform features adjusted to your device.



ŝ

### SynField Control app

ΪĽ

The SynField Control application allows you to set and control your equipment directly on field through a mobile device.



#### SynField Water Management app



The SynField Water Management application allows you to manage the water installation pump you participate in, remotely through a mobile device.

SynField provides a complete package of smart agricultural tools for the farmers. The SynField mobile applications have simple interfaces and are easy-to-use. The mobile apps enhance the flexibility of the SynField system and provide the ability to monitor and control your crop remotely, wherever you are, 24/7!

The SynField application provides you with the SynField web platform features **adjusted to your device**, which allow you to remote control of your actuators, such as solenoid valves or relays (switches), view the conditions of your field in real time and display agricultural indicators (e.g., growing days, evapotranspiration) related to your crop.



157 Perissou Str., Nea Chalkidona Gr-14343, Athens, Greece

> T:+30 210 2511 584 www.synfield.gr info@synfield.gr

