Powering the IoT Revolution
Libelium technology impacts in the world: Powering the IoT revolution
Interoperability for the IoT: Waspmote, Meshlium and Plug & Sense!

Connect any Sensor using any wireless technology to any Cloud Platform

Join us at any point
Waspmote:
The Standard Platform for the IoT

- Connecting any sensor, to any cloud platform through any wireless communication protocol

- Quality, accuracy and scalability: the right one number of sensors and the ability to add capillarity
New IoT Sensor platform worldwide certified: Waspmote, Meshlium and Plug & Sense!
The greatest challenges in Smart Agriculture sector

The main barriers of the sector that IoT is breaking down

• Farmers with poor training in the technological area and also innovative solutions
• Fields located in remote or isolated areas
• Low budgets to carry out projects due to the dependence on harvest
• Most of the companies of Agriculture sector are very small with just a few employees
• Global climate change: is vital to control weather and ambient conditions
• Pests can ruin the entire harvest
Multiple vertical solutions: Smart Environment PRO

- Air Quality Index (AQI) calculation
- 16 calibrated gas sensors (CO, O3, NO2, SO2, CO2, CH4, etc.)
- High-end Dust Particle Matter sensor (PM1 / PM2.5 / PM10)
Multiple vertical solutions: Smart Water & Smart Water Ions

- Monitoring water quality in rivers, lakes, sea, etc.
- Application to drinking water, swimming pools, waste water treatments, agriculture water, fish farms, etc.
- T, pH, dissolved oxygen, conductivity, turbidity, etc.
- Specialized sensors measuring ions concentration in water
Multiple vertical solutions: Smart Agriculture

- Monitoring of soil parameters, weather conditions and plant growth
- Application to any kind of crop (vineyards, greenhouses, fruit trees, tobacco, corn, etc.)
- Allow increase quality and quantity of production, optimize fertilization, reduce water consumption, predict insect plagues, etc.
Main Precision Farming applications
Libelium solutions to improve agricultural competitiveness

- Costs savings in terms of water, energy, fertilizers and pesticides.
- Product losses prevention by controlling weather conditions to adequate harvest times.
- Optimizing farmers daily tasks by automating processes.
- Getting real-time alerts about crop's conditions to make adjustments to reach optimal growth conditions.
- Planning specific strategies and predictive models.
Case study

Smart irrigation system to improve kiwi production in Italy
Smart irrigation system to improve kiwi production in Italy

**Challenge:** Deploying wireless sensor networks with Sigfox and GPRS connection in a kiwi plantation to develop a smart irrigation system.

**Client:** FAMOSA.

**Place:** Emilia Romagna, Italy.

**Sector:** Smart Agriculture.
Smart irrigation system to improve kiwi production in Italy

**Cloud partner**
esiFARM

**Communication protocol**
3G/GPRS
SIGFOX

**ROI:**

- Collecting information from the sensor platforms to help farmers in decision and alerts.
- Prompt warning about any water stress condition to recover from a growth deficit.
Smart irrigation system to improve kiwi production in Italy

Deployment:
Case study

Smart Agriculture project in an Australian nursery to ensure crops health and reduce losses
Smart Agriculture project in an Australian nursery to ensure crops health and reduce losses

- **Challenge:** Developing a wireless sensor network to control in real-time crops conditions to improve yields and reduce human error.
- **Client:** Agnov8.
- **Place:** Arcadia, New South Wales, Australia.
- **Sector:** Smart Agriculture.
Smart Agriculture project in an Australian nursery to ensure crops health and reduce losses

- **ROI:**
  - Reducing human error.
  - Defining how crop yields could be improved and protected.
  - Improving reliability of the readings.

Cloud partner

Agnov 8

Communication protocol

WiFi
Smart Agriculture project in an Australian nursery to ensure crops health and reduce losses

Deployment:
Case study

Monitoring green areas in Spain to develop a Smart Garden system
Monitoring green areas in Spain to develop a Smart Garden system

- **Challenge:** Measure water, soil and environmental parameters and manage conditions and needs of green areas in real-time.
- **Client:** Intelkia.
- **Place:** Ontinyent.
- **Sector:** Smart Agriculture.
Monitoring green areas in Spain to develop a Smart Garden system

- **ROI:**
  - Reduce water and pumping costs in a 30%.
  - Help gardeners to decide when to start or interrupt the irrigation system.
  - Alert the maintenance managers of the park of any security breach.
Monitoring green areas in Spain to develop a Smart Garden system

Deployment:
Case study

Improving banana crops production and agricultural sustainability in Colombia using sensor networks
Improving banana crops production and agricultural sustainability in Colombia using sensor networks

- **Challenge**: Developing a wireless sensor network in plantain crops in Colombia to promote sustainable farming and improve productivity.
- **Client**: Red Tecnoparque Colombia, SENA Regional Risaralda.
- **Place**: Lembo, Colombia.
- **Sector**: Smart Agriculture.
Improving banana crops production and agricultural sustainability in Colombia using sensor networks

- Improving environmental and agricultural sustainability.
- Promoting sustainable productivity in plantain crops.
- Organic waste management.
- Crops traceability.
- Safety of the product.

Cloud Server
Own cloud-based application

Communication Protocol
802.15.4
Improving banana crops production and agricultural sustainability in Colombia using sensor networks

Deployment:
Case study

Monitoring weather conditions to prevent pests in olives
Monitoring weather
Conditions to prevent pest in olives

- **Challenge:** Monitoring weather conditions to control fruit fly pest in olives groves and creating a model to predict the diffusion of fruit flies.

- **Client:** TeamDev.

- **Place:** Umbria, Italy.

- **Sector:** Agriculture
Monitoring weather
Conditions to prevent pest in olives

ROI:
• Support farming management.
• Build predictive models about pest diffusion.

Cloud partner
Esri

Communication protocol
3G/GPRS
Monitoring weather
Conditions to prevent pest in olives

Deployment:
Case study

Indoor Precision Farming in American medical marijuana plantations
Indoor Precision Farming in American medical marijuana plantations

- **Challenge:** Providing maximum yield in medical marijuana crops and high quality results to deliver the best quality product in the industry.
- **Client:** SensorInsight.
- **Place:** Phoenix.
- **Sector:** Smart Agriculture.
Indoor Precision Farming in American medical marijuana plantations

- **ROI:**
  - 15% and 20% increase in savings over the next 2 years.
  - Audit the key components of the growth process 24 hours a day.
Indoor Precision Farming in American medical marijuana plantations

Deployment:
## Next webinars

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<td>Alex Mateo, Smart Cities Senior Key Account Manager</td>
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<td>Ana Sancho, Smart Agriculture Industry Manager</td>
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