mySense

AI and Big Data for agricultural applications

JORGE MIGUEL MENDES
University of Trás-os-Montes e Alto Douro
Problem

2050

mySense - AI and Big Data for agricultural applications
Problem

2050

9 billion

mySense - AI and Big Data for agricultural applications
Problem

2050

9 billion

60%

mySense - AI and Big Data for agricultural applications
Key factors

- Intelligent & cooperative system
- Innovate the agriculture
- Real-time crop monitoring
- Irrigation loss reduction
- Predict pests and diseases
Solution

mySense IOT ++
A platform for Precision Agriculture

Welcome to mySense environment

- Support common PA practices
- Through innovative and cooperative solutions
- More sustainable agricultural practices
Solution

mySense IOT ++
A platform for Precision Agriculture

The MySense platform is now open for evaluation under actual conditions of use.

Welcome to mySense environment

- Maximize yield and reduce costs
- Preserving natural resources
- Caring for the environment
mySense - AI and Big Data for agricultural applications
mySense - AI and Big Data for agricultural applications

Phytopharmaceuticals ✓
Irrigation ✓
Phytopharmaceuticals
Irrigation
Weather Conditions
Diseases
Sensor data/Remote Sensing
Remote actuators (smart irrigation)
Crop/Yield information
Field missions (Robotics/UAVs)
Images/Image services
M2M (mosquitto)

Framework
mySense
Big Data support
(mongoDB/influxDB)

Cloud computing
mySense - AI and Big Data for agricultural applications
mySense

- AI
- Big Data for agricultural applications

Sensor data / Remote Sensing
- Remote actuators (smart irrigation)
- Crop/Yield information
- Field missions (Robotics/UAVs)
- Images/Image services
- M2M (mosquitto)

Framework
- mySense
  - Big Data support (mongoDB/influxDB)

Clients
- User/User Group Roles
- Available (collaborative) services

L1: Level 1
- Data acquisition IoT
- Wireless Sensor Networks
- Process management
- System administration

L2: Level 2
- Intelligent gateway

RESTful API

mySense

Fog computing

Local database (mysql)

IoT device (IP)

Imaging Device

Agricultural sensors

SBC (RPI)

Local tasks
- Real-time alerts
- Network management

Farmer

Crop/Field
- Sensors and devices

utad FCT FCCN

mySense - AI and Big Data for agricultural applications
Warnings service

mySense - AI and Big Data for agricultural applications
Warnings service

mySense - AI and Big Data for agricultural applications
Remote technical assistance

mySense
- AI and Big Data for agricultural applications
Academic, Research & Development projects

mySense - AI and Big Data for agricultural applications
Wine aging process monitoring during 2 years
Data volume acquired by 40 meteorological stations
Correlate data using machine learning

mySense

AI and Big Data for agricultural applications

JORGE MIGUEL MENDES
RAUL MORAIS DOS SANTOS (PROJECT LEADER)
University of Trás-os-Montes e Alto Douro

utad FCT FCCN