



# ONE FARM

## SMART AGRICULTURE SOLUTION

**ONE Farm** is the smart agriculture solution, developed on VNPT Technology's ONE IoT Platform. With Internet of Things (IoT) technologies, we bring a real revolution for agriculture including connect network of sensors to monitor; Digitalize and build planting process; Build more complex and automated cultivation process to minimize human effort, self-operation mechanism of self-learning ability; Contribute and enrich agricultural knowledge for a better planting.

We would bring to customers a smart agricultural chain management system includes: supply chain management, planting, inventory management, logistics, distribution and retails, support traceability from farm to table. With standardized operation design, this solution is the best choice for high-tech farms to optimize operations cost and assure quality. Flexible deployment, easy scalability enable fast implementation and easy to customize for practical farming models.

---

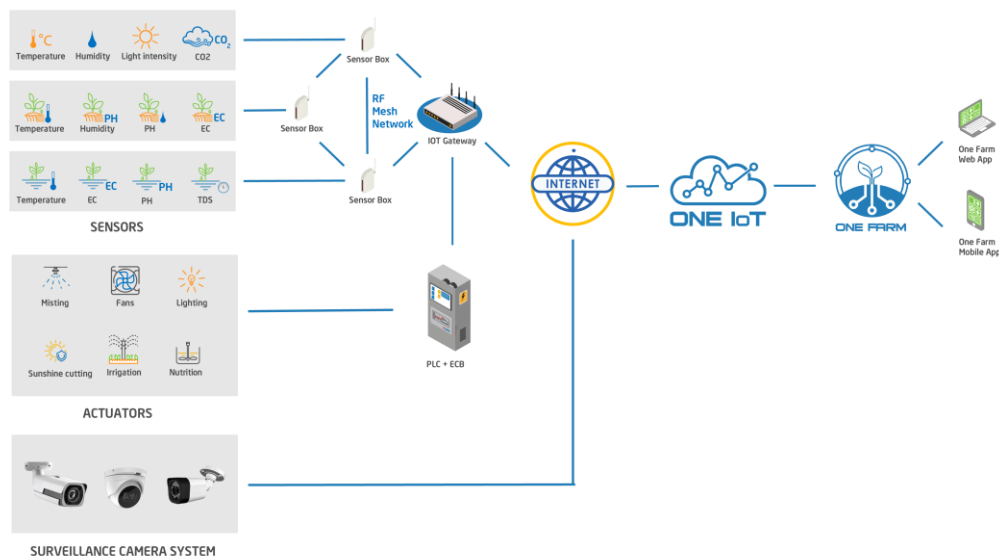
### PRODUCT HIGHLIGHTS

- Capture the data and give actionable insights to manage all the operations on the farm
- Real-time and accurate control, regardless of internet connection
- Select data sensors and operation modes on demand
- High security solutions help reduce risks and ensure the integrity of information

- Flexible deployment models for all product scales
- The system is highly customizable, easy to expand
- Easy to operate, optimize production costs

## TYPICAL DEPLOYMENT MODELS

ONE Farm allows customers to proactively select sensors, devices, easily integrate with existing systems and expand product scale to keep up with demand.



## FEATURES

### Devices

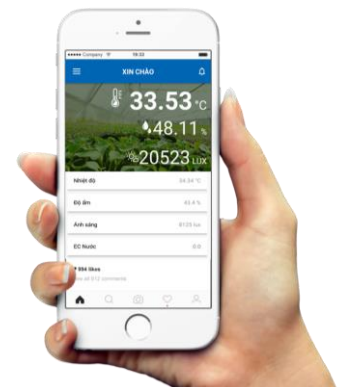
- IoT Gateway: Using Edge Computing to support autonomous operation mode in case of internet connection loss
- Sensors
  - Sensor box: Receive data from sensors and send data to IoT Gateway

- Sensor: Provide sensors on demand: temperature, humidity, light intensity, pH, EC, TDS, etc.
- Programmable Logic Controller (PLC) and Electronic Circuit Breaker (ECB) System
  - Receiving business scenarios from IoT Gateway, indirectly controlling actuators via intermediate relay and magnetic start systems, and updating the status of actuators to IoT gateway. PLC also plays a role of managing and updating the alert status of elements in electrical cabinets.
  - Actuators: Automatic execution of direct operations, replace human labor: turn on / off pumps, close / open solenoid valves in irrigation systems and nutrition; close / open the thermal screen; etc.
  - Human – Machine Interface (HMI): Communicate with PLC in accordance with industry standards, retrieve data from PLC's register system, then display on the screen including: images, graphs, statistics, stages in the farming process; Support management, display and look up alerts of the system.
  - Protect Systems: Support surge protection and overvoltage/overcurrent protection to provide the safe environment for operators and equipment.
  - Local alert system: Automatic warning by lights and whistles to the operators in case of incidents
- IP Camera: Support IP66 or higher to withstand the variables of an outdoor environment; Have in-built infrared LED's allow to see in dark conditions; Easy to install and operate



## ONE Farm Applications

- Monitoring environmental information: automatically collecting data from air sensors, soil sensors, water sensors, etc.
- Control actuators remotely via mobile applications, personal computers (Mobile Application, Web Application)
- Flexible management of agricultural equipment according to each farm model and production process
- Provide tools for digitizing production processes for plant and animal variety
- Managing farms, warehouses, materials and human
- Traceability from farm to table
- Surveillance cameras system:
  - Assist in keeping an eye on daily operations in the farm
  - Place cameras in sensitive areas will prevent thieves from stealing animals, crops and equipment
  - Allow farmers to view their property remotely over a large area
- Integrating data analysis functions and artificial intelligence: detect infected vegetables, detect growing stages based on image analysis from Camera





## REFERENCE

### DELCO FARM IN THUAN THANH – BAC NINH

- Size: ~ 6 ha
- Commercial farm: Poultry line, Hydroponic, Soil cultivation in greenhouses with various products



## PHU YEN – CENTER FOR APPLICATION & TRANSFER OF TECHNOLOGY

- 3 greenhouses with various organism including high valued mushroom
- The center assists farmers in applying technology into agriculture, specially in cultivation in Phu Yen
- Use as this VNPT-Technology lab for all farmers update with new technology and cultivation training regularly



## SMART AGRICULTURE MODEL IN YEN KHANH – NINH BINH

- 2 low net house: 2000m<sup>2</sup> for oriental mustard and 1500m<sup>2</sup> for tomatoes
- 1 high net house: 100m<sup>2</sup> for melon (substrates) and lettuce (hydroponic)



## CUSTOMER CARE & TECHNICAL SUPPORT CENTRE



**Address:** 1st floor, VNPT Technology Building, No. 124, Hoang Quoc Viet Str., Cau Giay  
Dist., Hanoi, Vietnam



**Telephone:** +84.24.3750.6666 (24/7)



**Email:** support@vnpt-technology.vn