



2025 / findAGROs

Smart Agriculture Solutions

2025. 10.

A full-cycle solution from establishing open-field smart agriculture basic plans to detailed design, integrated management system development, and maintenance

Smart agriculture for open-field and greenhouse

findAGROs

An integrated smart agriculture solution that optimizes crop growth environments and enhances agricultural productivity through data collection, analysis, and AI modeling.

findFARMs

Weather Disaster Prevention Farm Management Solution

A solution that prevents natural disasters such as frost, cold damage, and sunburn while helping to efficiently manage farms

findCROPs

Growth Surveillance & Analysis Solution

Provides monitoring and surveillance through systematic collection of crop growth data

findPESTs

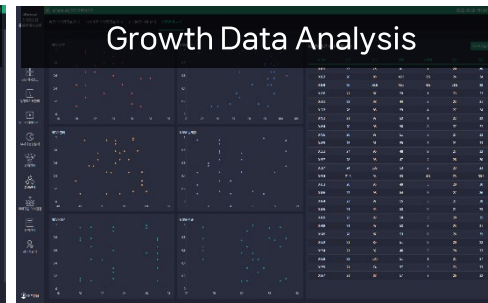
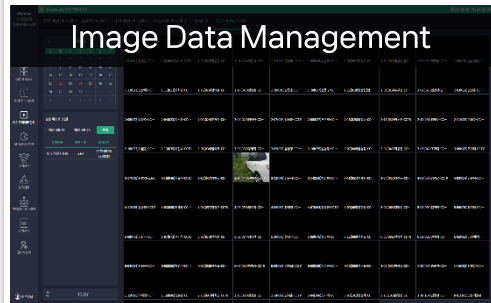
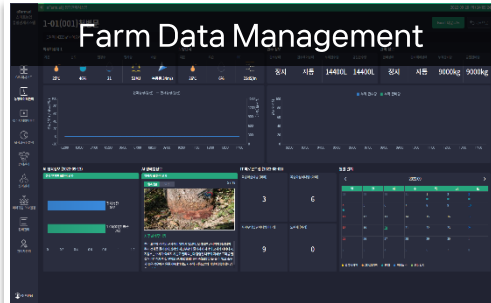
Pest Surveillance & Analysis Solution

Collects data via pest traps and provides pest analysis information to users

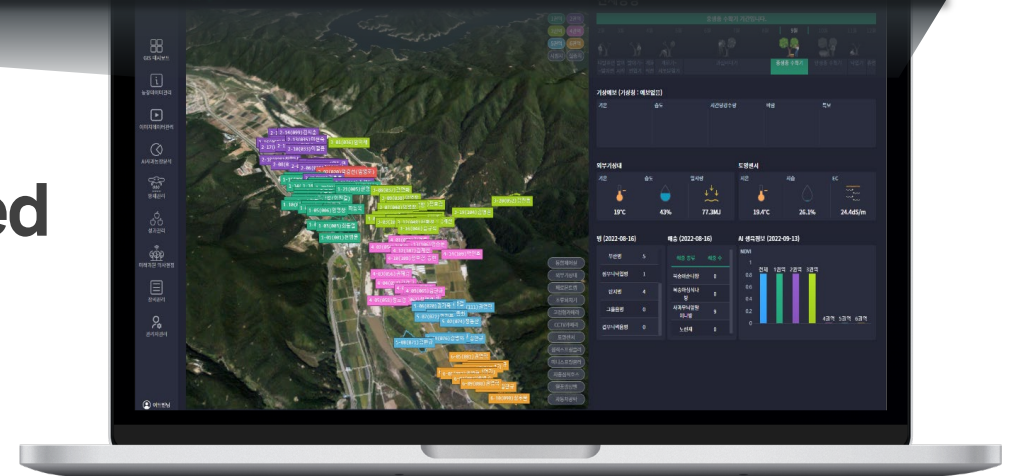
findROBOTs

Agricultural Robot Management Solution

Integrates management of autonomous agricultural robots for spraying, transportation, and crop growth monitoring



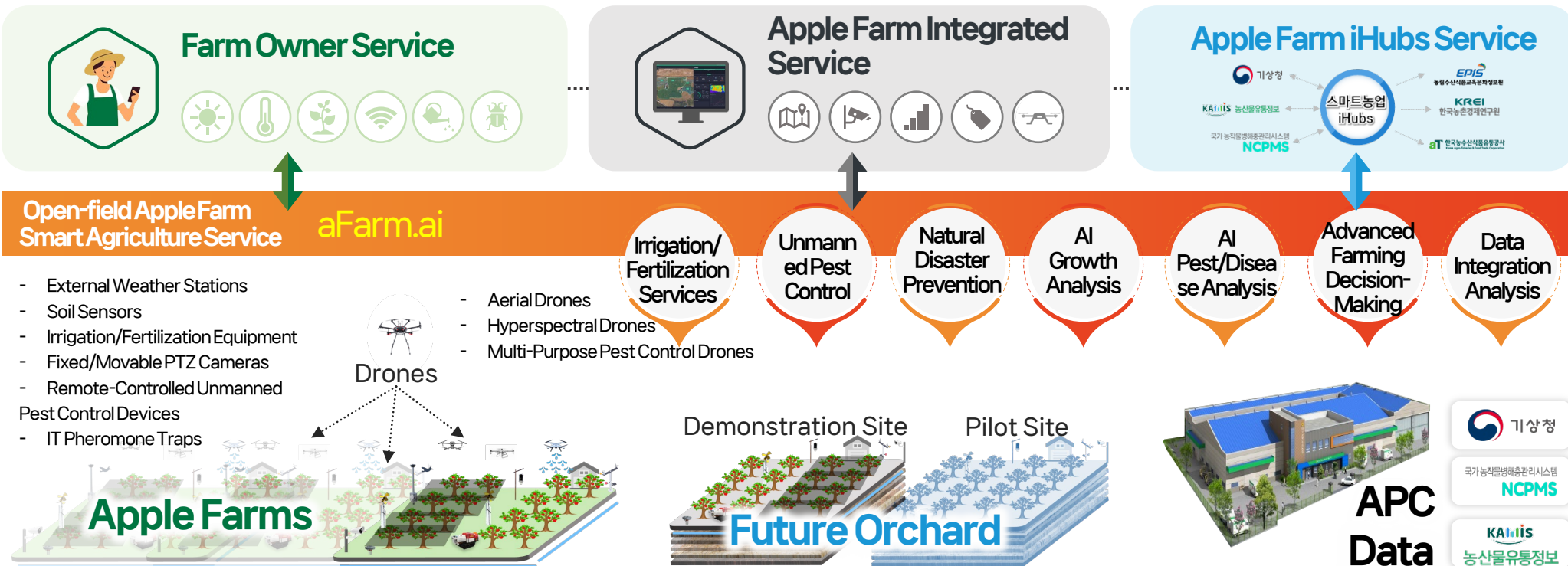
Open-Field Smart Farm Integrated Control System Development

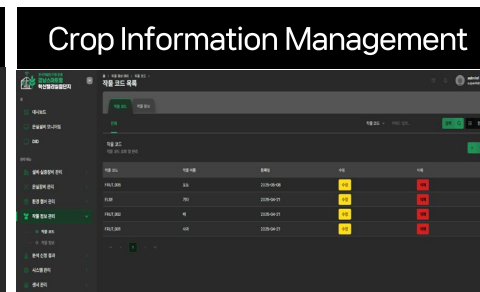
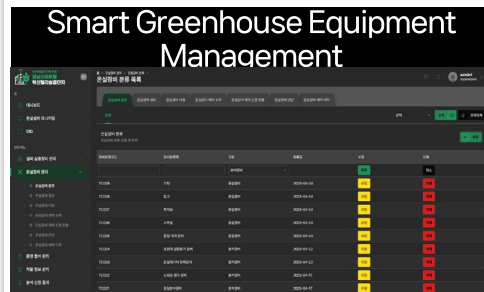
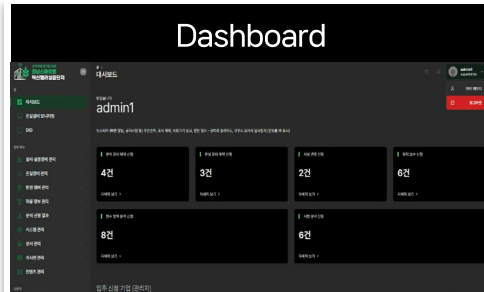


Smart Agriculture Integrated Control System and Key Services



- GIS Dashboard
 - Farm Data Management
- Decision Support Management
 - Pest Control History
- AI Apple Farm Analysis
- Future Orchard Decisions
- Farm Yield Information, Apple Farm Cost Analysis
- Equipment Management
 - Equipment Reservation

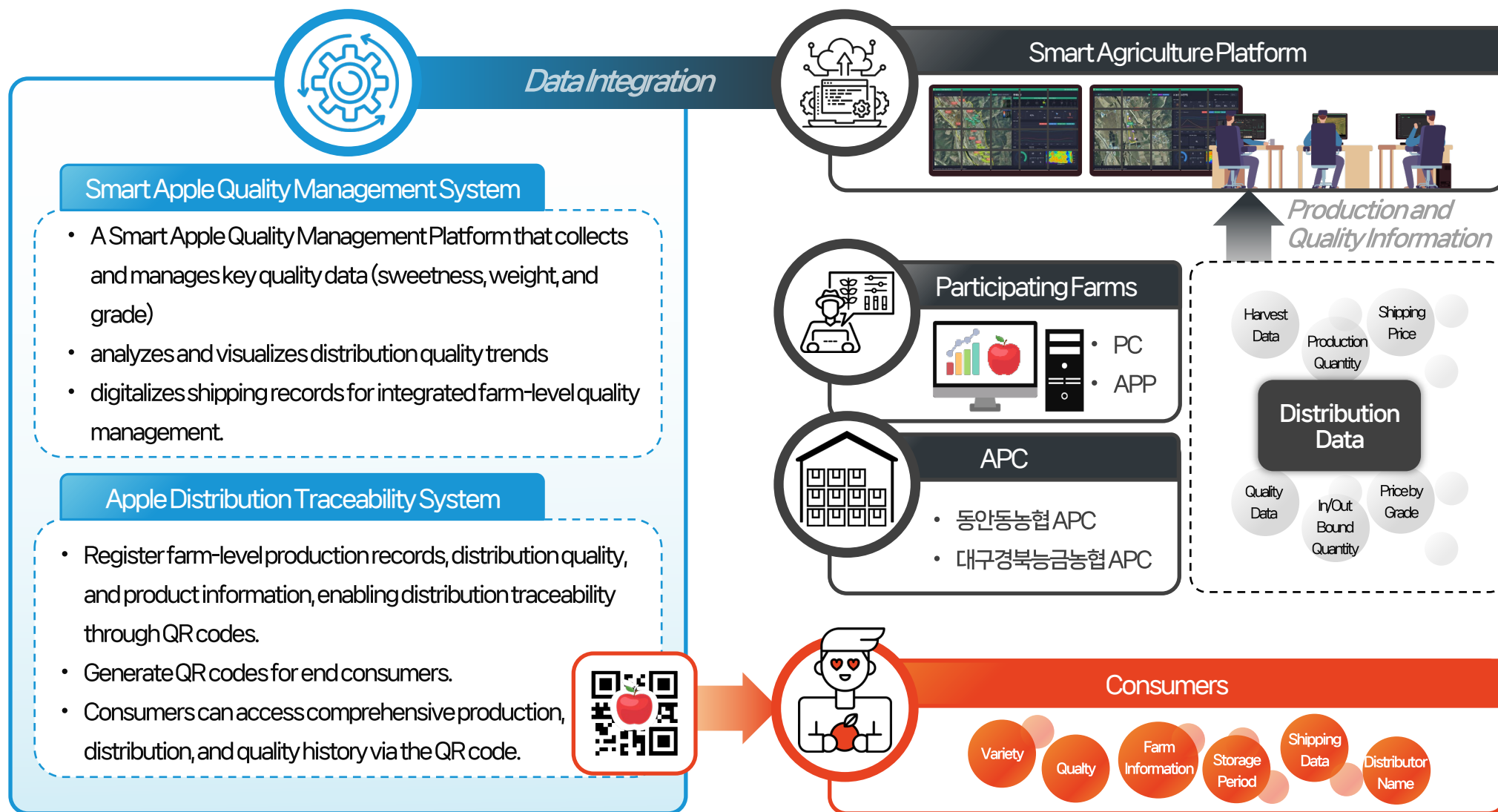




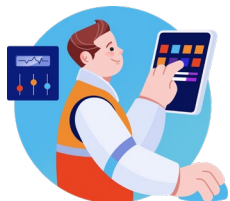
Integrated Smart Greenhouse Management System Powered by Real-Time Big Data Analysis



Data-Driven Apple Traceability and Quality Management Solution



Admin



Smart pole digital signage

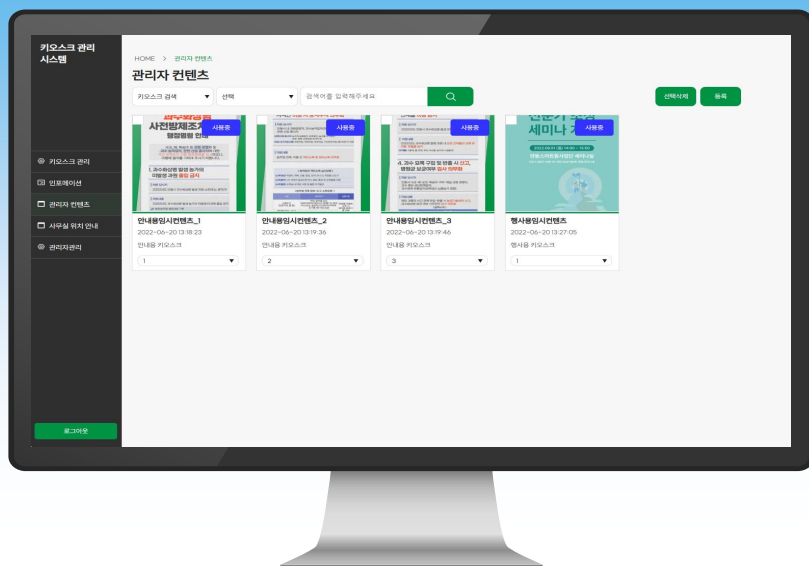
- Installed Facility Management
- Content Registration and Usage Settings
- Display Screen Order Setting
- Displaying Stored Screens when Server is Offline
- Management of Information for Info Desks/Offices, etc.
- Providing Environmental Information via KMA Integration

- Provision of Public Data Information, including Weather and Environmental Data
- Provision of Event and Educational Alert Information
- Real-time update of display information using collected data
- Utilizing Various Information Delivery Channels through API Integration

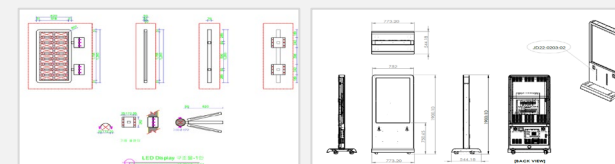


Digital signage kiosks

- Display of Promotional Content(Event Information, Educational Guidance, Office Location Maps, etc.)
- Show administrator-registered images in full-screen mode
- Touch-based Screen Switching Function

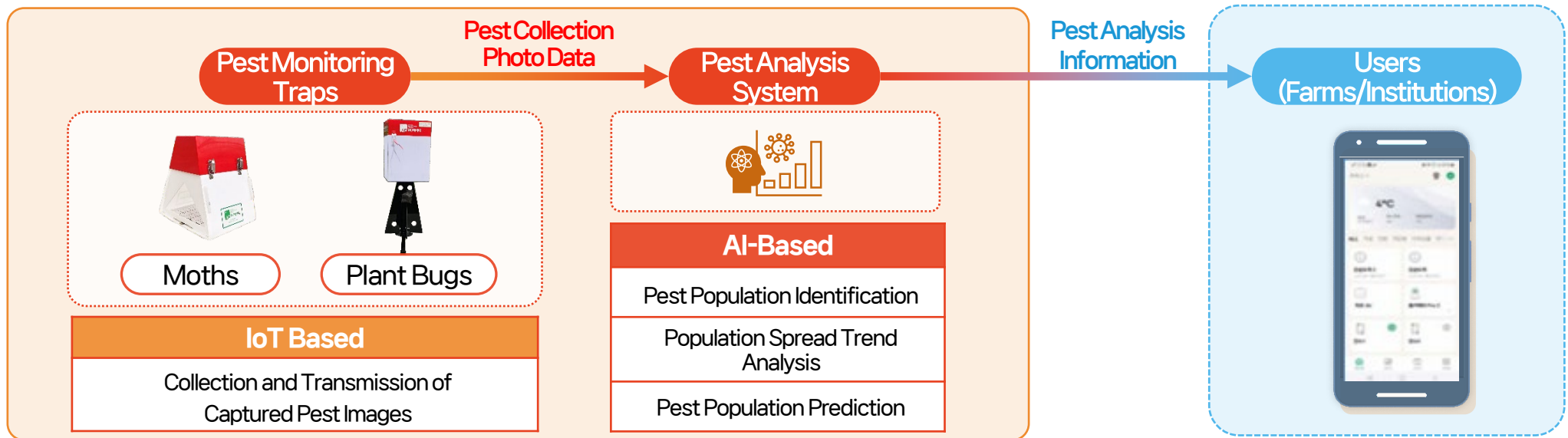


Design Drawing

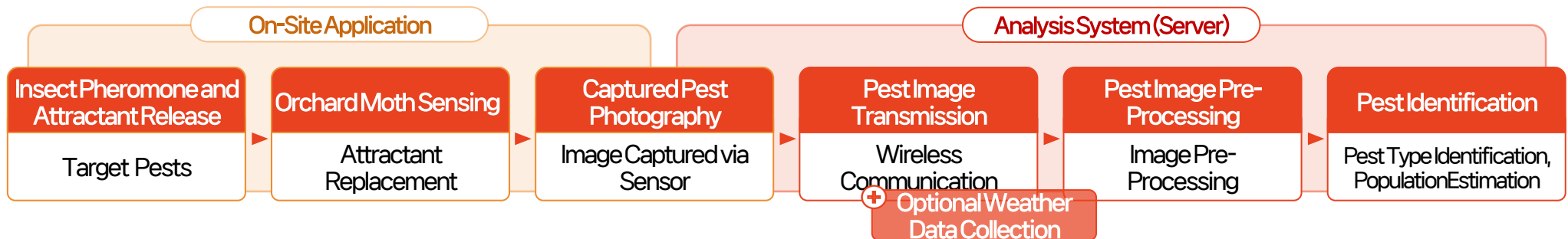


Collects data via pest traps and provides pest analysis information to users

“Pest Surveillance & Analysis Solution (Pest Monitoring Traps + Pest Analysis)”

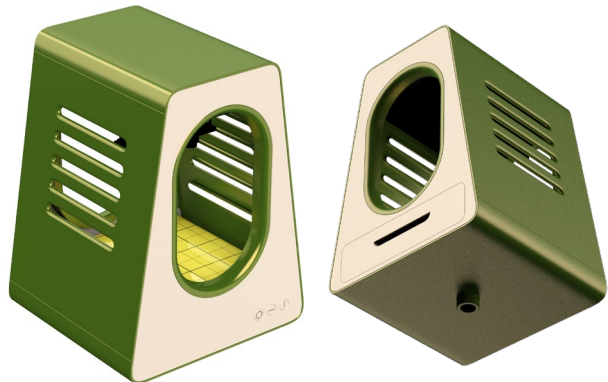


Data Collection, Transmission, and Analysis Process

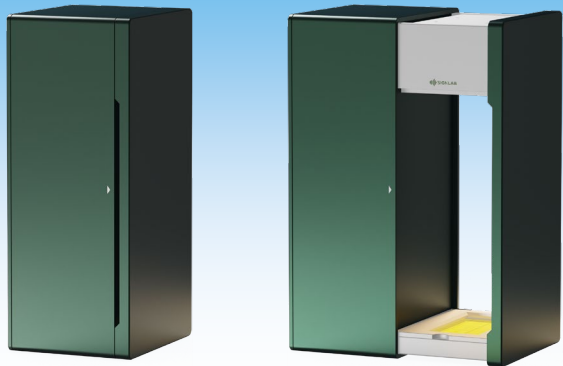


An eco-friendly trap that uses insect pheromones to attract and capture minute insects

Pest Monitoring Roll Trap



Portable Micro-insect Scanner



Automatic Trap Replacement

Self-replacing trap with 40 adhesive rolls, providing up to 9 months of maintenance-free operation

Optimal Design

A trap designed for minute insects, featuring optimal placement of functional components for maximum efficiency

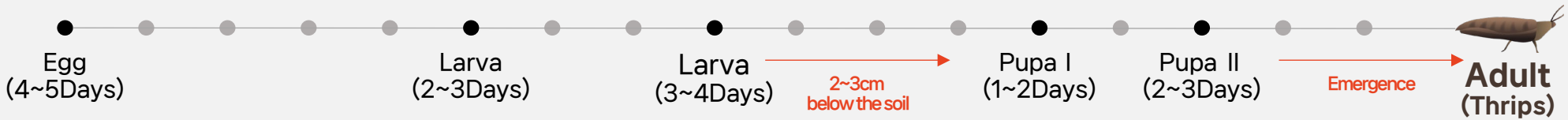
Optimal Material

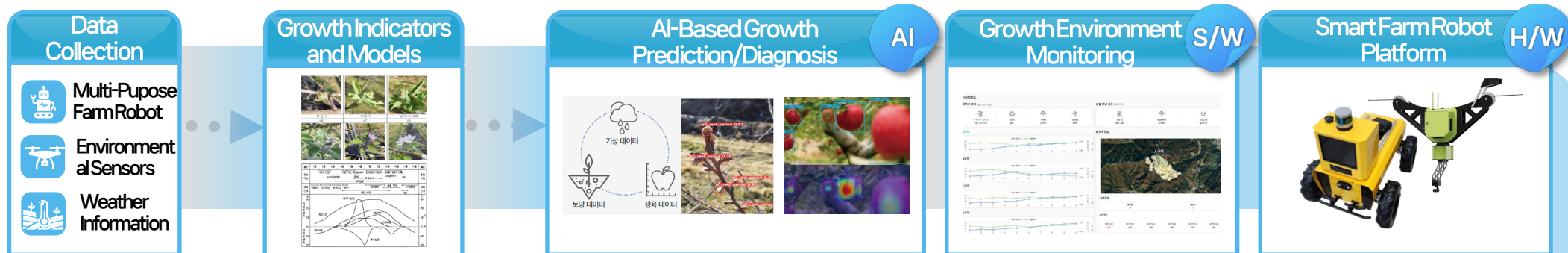
Trap exterior materials designed for versatile environmental use

High-Resolution Camera

A high-resolution camera captures most pests, from 1.5 mm to 4 cm, as the adhesive surface is retrieved

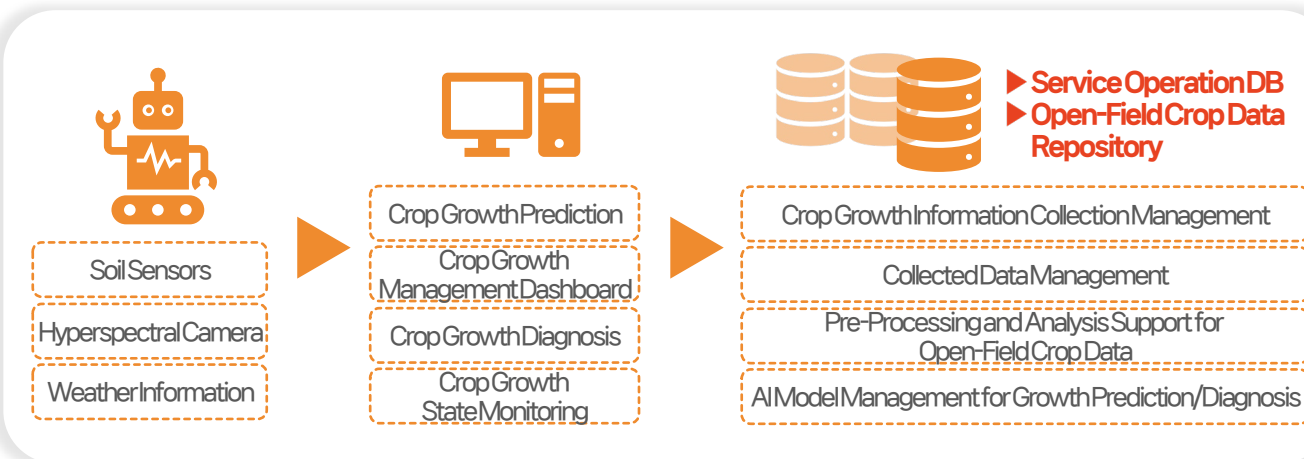
Life Cycle of Thrips





Open-Field Smart Farming Testbed for Technology Verification

→ Production Site Demonstration



Apple/Cabbage Growth Prediction, Monitoring and Diagnosis Service

Systematic crop growth prediction

Crop Growth State Monitoring

Crop Growth Diagnosis

Growth Monitoring Robot



Provides monitoring and surveillance through systematic collection of crop growth data



Growth Surveyor,
Drones, CCTV



Data Collection and Analysis



Planting/Cultivation Distribution, Abnormal Growth Analysis



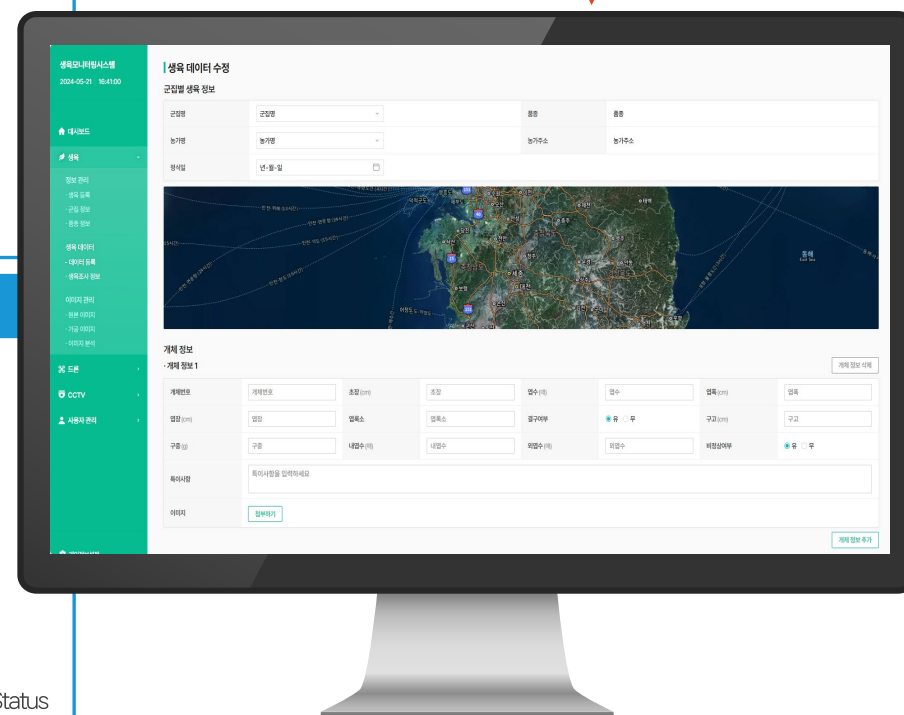
Production Forecast and Operational Information

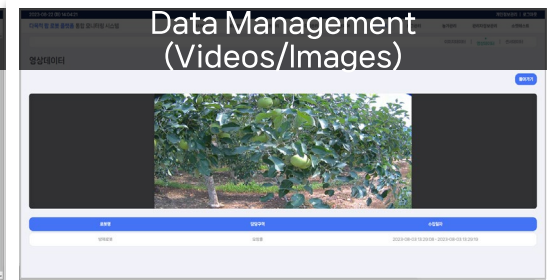
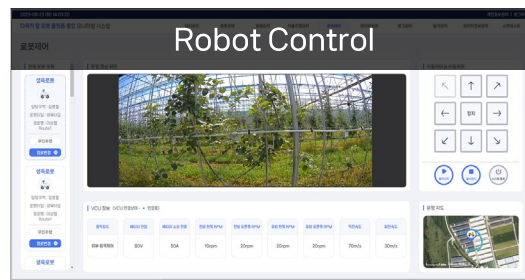
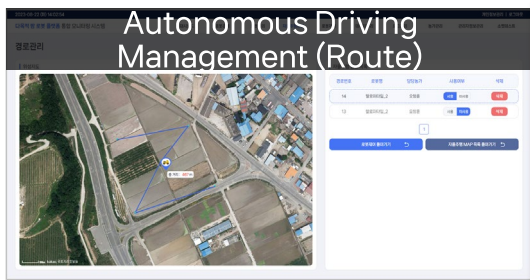
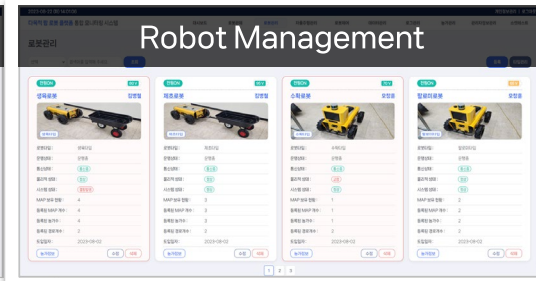
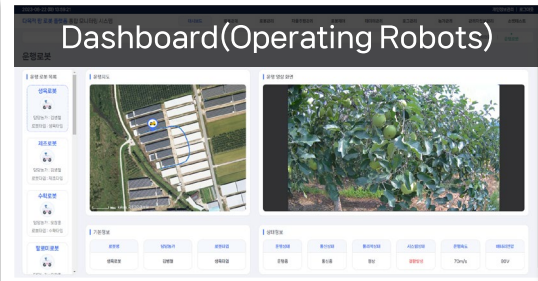
Offer Service

- ✓ **Surveyor Growth data management:** Input, Query
- ✓ **Growth Data Analysis :** Statistical Analysis, Basic Analysis, Correlation, Variance, Regression
- ✓ **Crop Growth Abnormalities and Harvest Determination per Plot**
- ✓ **Visualization of Growth Data Analysis Results**

Growth Monitoring Features

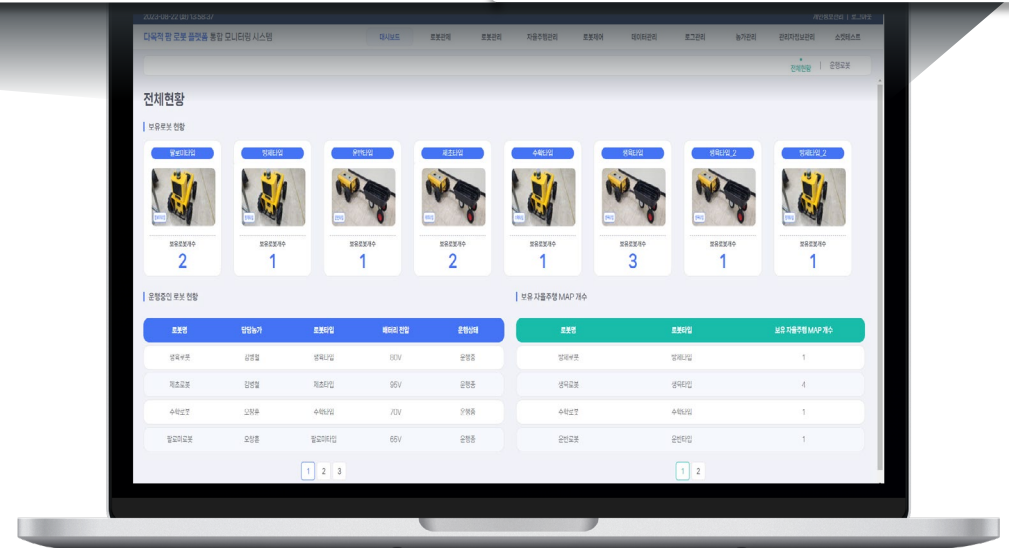
- ✓ **Growth Monitoring Device Management**
 - Drone Registration Management
 - Drone Operation History Management
 - CCTV Device Registration
 - CCTV Image Management
 - ✓ **Surveyor Growth Data Management**
 - Surveyor Basic Information Management
 - Growth Information Management
 - Growth Survey Data Management
 - ✓ **Growth Image Data Management**
 - Data Storage and Model Linkage
 - ✓ **Growth Analysis**
 - Raw Growth Image Data Management
 - Processed Growth Image Data Management
 - Growth Image Analysis Management
 - Growth Analysis Learning Model Management
 - ✓ **Dashboard**
 - Growth Data Collection , Processing Status
 - Growth Analysis Status





Integrated Control System for Multi-purpose Farm Robots

An integrated management system that enables efficient control and monitoring of farm robots on a single platform



An integrated management system that enables efficient control and monitoring of farm robots on a single platform



A versatile multi-purpose farm robot platform adaptable to diverse environments



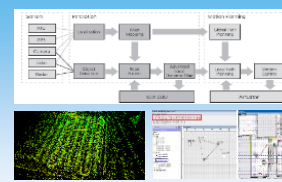
Protected Horticulture Environment



Open-field Crop Cultivation Environment



Orchard Crop Environment



Autonomous Driving



Growth Environment Monitoring



Farm Work Assistance



Farm Robot Platform Integrated Monitoring

- Farm Robot Platform Integrated Monitoring System
- Farm Robot Platform & Application Service BM
- Farm Robot Platform Demonstration

Farm Robot Autonomous Driving

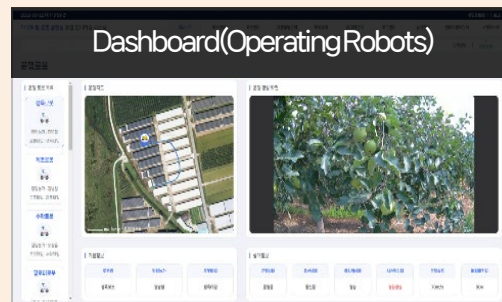
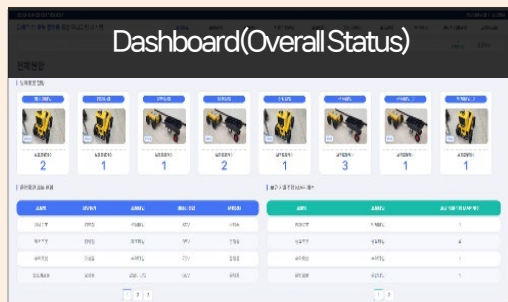
- VCU
- Open-Field Orchard Autonomous Map Generation
- AI-Based Autonomous Driving System

Farm Robot Platform

- Indoor/Outdoor Mobility Platform Resilient to Open-Field Conditions
- Multipurpose Transport Platform

Applicable and scalable for extended use

Integrated Control System





Solution



Agricultural Robot Management Solution_ **findROBOTs**

Flying FarmBot



A robot for crop growth and pest analysis and forecasting through data collection in indoor and outdoor environments



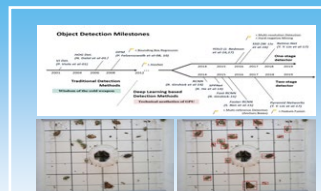
Protected Horticulture Environment



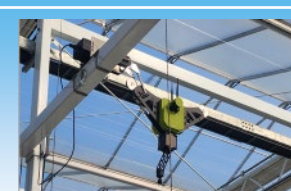
Open-field Crop Cultivation Environment



Orchard Crop Environment



Pest detection model



Growth environment monitoring



Pest Monitoring Analysis Forecasting

Pest Monitoring

- Pheromone Trap Collects Thrips Data
- Uses Thrips Analysis and Prediction Model to Forecast Pest Occurrence

Growth Monitoring

- Camera Collects Growth Data
- Collected Video Provided to Farms via Multi-Purpose Farm Robot Platform

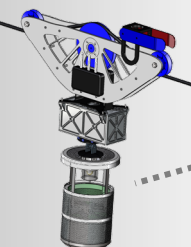
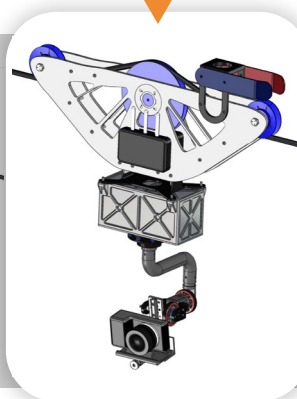
Flying FarmBot

- Indoor/Outdoor Wire-Moving Platform
- Contactless Automatic Charging System Compatible with Charging Station
- Waterproofing IP66+ to Withstand Various Climate Conditions

Capable of collecting crop growth and pest monitoring data

Growth Flying FarmBot

Acquisition of crop growth images and videos via vision cameras



유아등

수거함
(접착식페로몬트랩)

Pest Flying FarmBot

Acquisition of pest images and data via pheromone traps

Enhancing smart farming solutions through field demonstration of crop growth and pest monitoring technologies at the Gyeongnam Smart Farm Innovation Valley

Tenant companies at the Gyeongnam Smart Farm Innovation Valley demonstration complex



Demonstration Items

Strawberry

Demonstration Period

2024.6.14.~2029.6.13.(5 Year)

Demonstration Targets

H/W A multi-purpose farmbot platform-based robot for crop growth and pest monitoring

S/W Crop Growth and Pest Analysis Platform

Demonstration Service

- Providing crop growth analysis services through growth data collection
- Providing pest analysis services through micro-insect data collection within greenhouses

Demonstration Details



Hardware tests for multi-purpose farmbots, micro-insect pheromone traps, and flying farmbots for crop growth and pest monitoring

- Tests for driving/mobility performance, image and other data acquisition, and data transmission



Providing crop growth and pest analysis and monitoring services based on the collection of crop growth and pest data.

H/W

Flying farmbots

Mobile/
Growth&Pest Analysis

Micro-insect pheromone traps

Fixed/Pest Analysis

Multi-purpose farmbots

Mobile/
Growth&Pest Analysis

Greenhouse Mobile Robot

Mobile/
Growth&Pest Analysis



S/W

Crop Growth and Pest Analysis Platform

Micro-pest Analysis

Greenhouse Crop Growth Analysis



Use Cases of the Solution

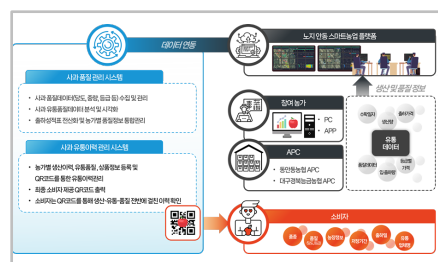
2021

Development of Open-field Smart Farm Integrated Control System



2022

Software Development for Andong Open-field Smart Agriculture Pilot Distribution Complex Project



2024~

Establishment of Digital Signage



2025.1

Construction of Integrated Operation Management System at Gyeongnam Smart Farm Innovation Valley Demonstration Complex



2025.3

Proposal of Pest Monitoring and Analysis Solution for Geochang-gun Agricultural Technology Center





Solution



Use Cases of the Solution



Development of Open-field Smart Farm Integrated Control System



14 Month

2021. 10. 20.

2022. 12. 31.

Providing integrated control and real-time farm management services based on data analysis collected from smart agriculture pilot complexes

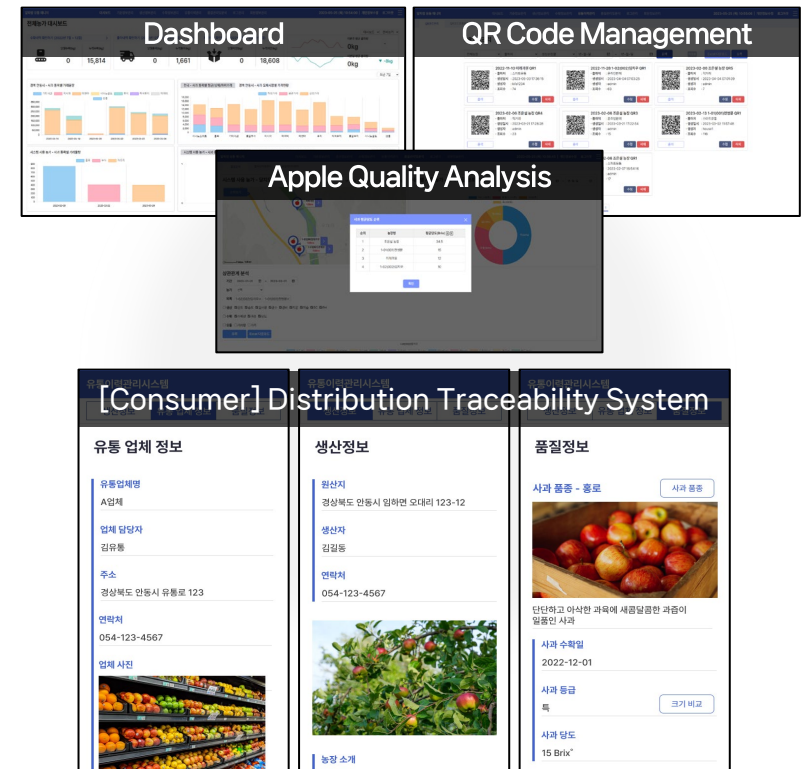
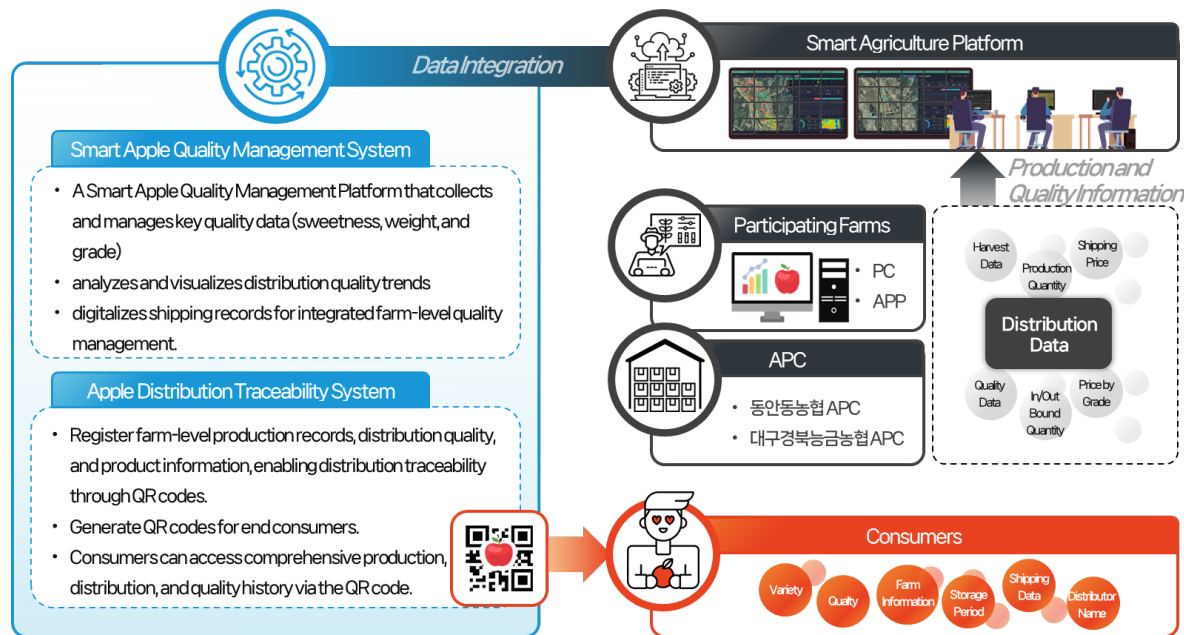
안동 노지 스마트농업 서비스 aFarm.ai



Software Development for Andong Open-field Smart Agriculture Pilot Distribution Complex Project

3 Month
2022. 9. 8. ~ 2022. 12. 7.

Apple distribution traceability and quality management through smart agriculture data integration





6 Month

2024. 9. 30. ~

2025. 3. 30.

Digital signage kiosks and smart pole digital signage tailored for smart agriculture service environments

Digital signage kiosks



Installation of 3 units

Smart pole digital signage



Installation of 10 units



Installation of kiosks and electronic display boards



Digital Signage Kiosk Content Design

Construction of Integrated Operation Management System

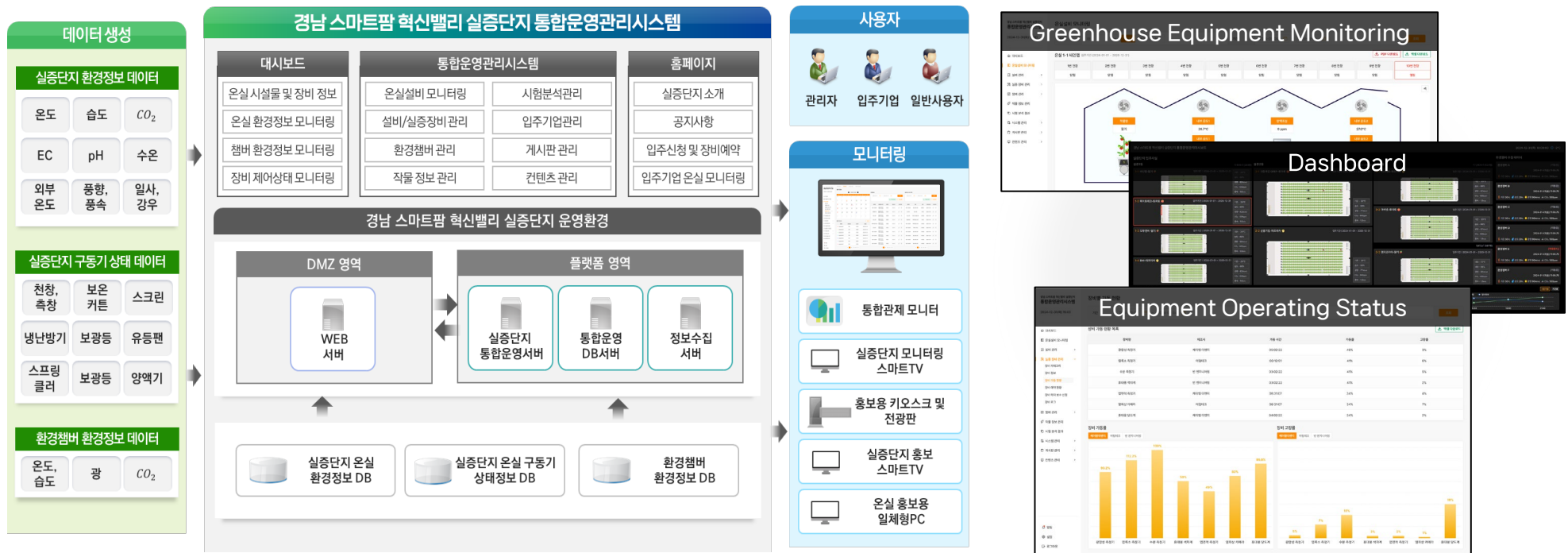
at Gyeongnam Smart Farm Innovation Valley Demonstration Complex

12 Month

2025. 1. 1.

2025.12.31.

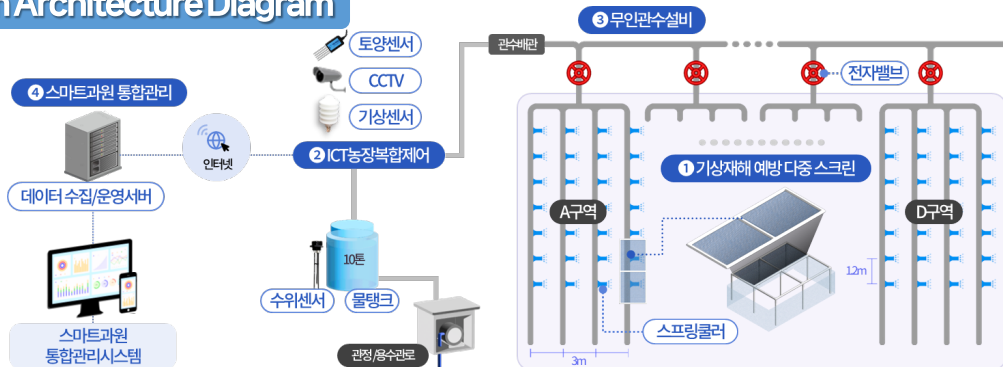
Integrated Operation Management System



2025. 1. ~

Deployment of multi-purpose screens and establishment of an automatic control system to reduce natural damages (cold, pests, heat, etc.) in fruit orchards

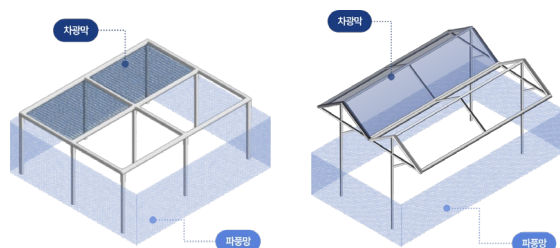
System Architecture Diagram



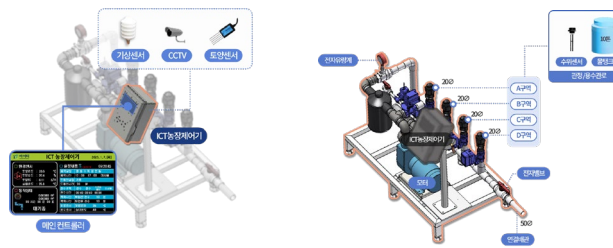
Smart Orchard Integrated Management System



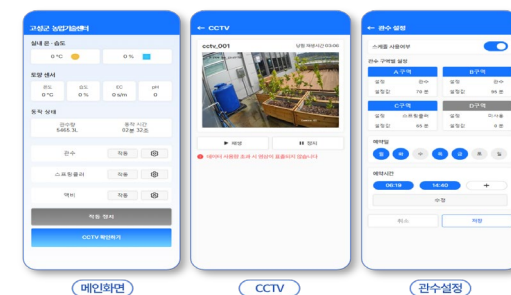
Overview Drawing



ICT-based Integrated Farm Control



Smart Orchard Integrated Management System



2025. 3. ~

A map of Gyeonggi-do is shown, divided into 12 fire districts. Each district is labeled with its name in Korean: 고대면 (Godaemyeon), 용왕면 (Yongwangmyeon), 거북면 (Gogokmyeon), 북상면 (Boksangmyeon), 위천면 (Wicheonmyeon), 구상면 (Gusangmyeon), 마리면 (Marimyeon), 거성읍 (Geoseong-eup), 기포면 (Gipomyeon), 남양면 (Namyangmyeon), 남양읍 (Namyang-eup), and 신항면 (Shinhangmyeon). A black line points from the Gogokmyeon district on the map to a circular inset. The inset shows a red and white fire truck and a fire station building with a red roof and white walls.

Installation of moth and stink bug traps as a set at designated locations

Stink bugs

Moths

The diagram illustrates the architecture and data flow of the Pest Monitoring System. It shows the following components and connections:

- Trap**: A box containing numbered circles 1, 2, 3, and N, representing individual monitoring traps.
- Image**: A box containing a photograph of a trap with pests. The photo has a timestamp "2023-05-04 12:09:48" and a label "벌새 무지개벌" (Bee Rainbow Beetle).
- Pest Analysis System**: A box containing an illustration of a computer monitor displaying a bar chart and a gear icon, and a smartphone displaying a data interface.
- NCPMS** and **KMA**: Two boxes representing government agencies that connect to the **API**.
- API**: A central box that acts as the interface between the traps/agencies and the analysis system.

The data flow is as follows:

- Traps (1, 2, 3, N) send data to the **Image** component.
- The **Image** component sends data to the **Pest Analysis System**.
- NCPMS** and **KMA** send data to the **API**.
- The **API** sends data to the **Pest Analysis System**.

The **Pest Analysis System** provides the following information:

- Operational Status of Pest Monitoring Traps by Institution
- Pest Image Collection
- Pest Occurrence Status
- Provision of Pest Control Information

About Us



Company Name

Signlab Co., Ltd.

CEO

Lim Ho Seob

Founded on

2015. 10. 1.

Business areas

IT consulting
Software development
Data analytics
(Smart Agriculture, Smart Manufacturing)

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Signlab Co., Ltd. widely promotes appropriate smart agriculture technologies to farms, driving innovation in agriculture



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<http://www.findAGROs.com>