Farm Butler is Here

Chunghwa Telecom
Mobile Business Group
Agriculture Problem

**Why**
- Manpower Shortage
- Farm Land Fragmentation
- Inconsistent Production Quality / Quantity
- Lack of One Common Agri. Platform

**Where**
- Subtropics
  - Open Farmland
  - Greenhouse

**Who**
- Agricultural Technology Farmers
- Second-Gen Farmers

**What**
- Establish Cost-effectiveness Instruments
- Develop Smart Agriculture Platform
- Integrate AI Deep Learning Model
Smart Agriculture - Service Architecture

- MIoT Infra DNA
  - IoT Device Center
  - LPWAN Network
  - IoT Instruments

- Agri Domain Expertise
  - Academia
  - Industry
  - Farmers
IoT Instruments

Soil 3-1 Sensor
Measure
Soil Temp. (-30~70 °C)
Moisture (0~100% m3/m3)
EC (0~20 mS/cm)

Water Temperature Sensor
Measure
Water Temp. (-100~200°C)

Ambient Sensor
Measure
Ambient Temp. (-20~65°C)
Humidity (0%~100%)
Smart Agriculture Platform

Platform Function

- Real-Time GIS Graph
- Abnormal Data Notifications (e-mail, SMS)
- Cultivate Suggestion
- Device Management
- Historical Data and Future Prediction Trend
- Climate Information
- Crops and Farm Management
- Cross Data Analytics
Smart Agriculture Platform

- **Place**: Pingtung
- **Notifications**: Soils 3-1 Sensor, Humidity High (Rain Day)
- **Sensor Name**: Soil 3-1 Sensor
- **Sensor Data**: Temperature 22.44°C, Moisture 39.21% WC%, Soil EC 0.16 mS/cm, Voltage 3V

![GIS Graph](image)

**Data Trend**

- **Temperature**: 22.44°C
- **Moisture**: 39.21% WC%
- **Soil EC**: 0.16 mS/cm
- **Voltage**: 3V
- **Alarm Status**: Humidity High (Rain Day)
Platform with AI

Smart Agriculture Management Platform

Alert Messages & Decision Suggestion

Environment Prediction

Precision Farming

Precautions

Farm Records

Crop Growth Records

OPEN Data (Weather Forecast)

AI model Prediction & Management Modules

Model Templates

Sensor Value Prediction

Feature Engineering

Data Preprocessing

Model Update

Evaluation

Soil Data

Microclimate Data

Water Level Data

Pestis Detection Data
Smart Agriculture Use Case

Open Field - Green Soybean

Green House - Strawberry