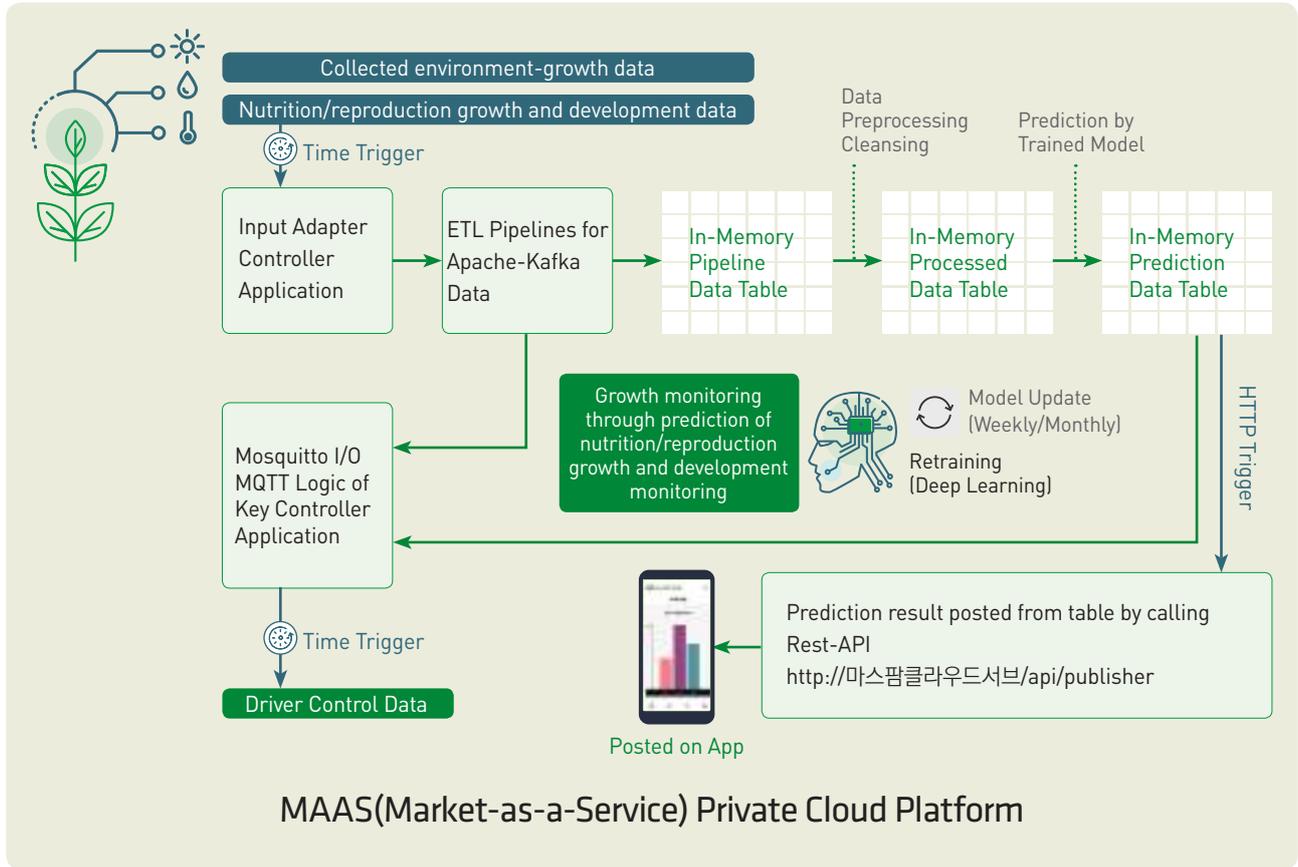




# MAAS (Market-as-a-Service) UI Solution

# About MAASFARM

MAASFARM is a company specializing in provision of environment, growth, farm, control, and management data to smart protected horticulture farms optimized through database application solution with yield prediction as well as automatic control solution based on Postgresql DB platform by organizing consortium-shared platform with sensor/actuator internet of-things (IoT) as well as gateway for optimization of smart farms



# HISTORY

2018 May 25th	2018 June	2019	2020year
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Public company build-up

Build up the apache hadoop based AI plaform smart farm UI application solution and smart phone application on google play-store

Paprika horticulture environment data collection and analysis using wifi gateway with I2C sensors and lte router for MaaS UI cloud platform server to supply with MaaS Farm SaaS intelligent data service on Andriod google smart phone application

AS service, circulation pricing suggestion, m2m matching stabilization support through the consortium platform with circulation, promotion, processing

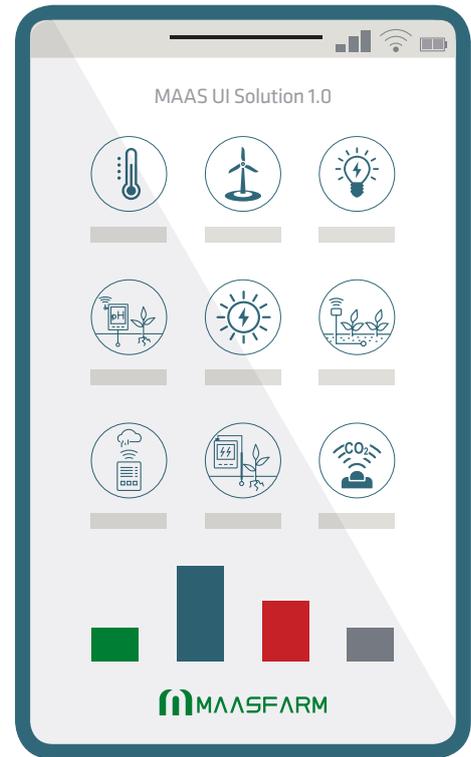


# MAAS(Market-as-a-Service) UI Solution 1.0

## Horticulture AI platform UI service smart farm crop activity analysis solution software and smart phone application service

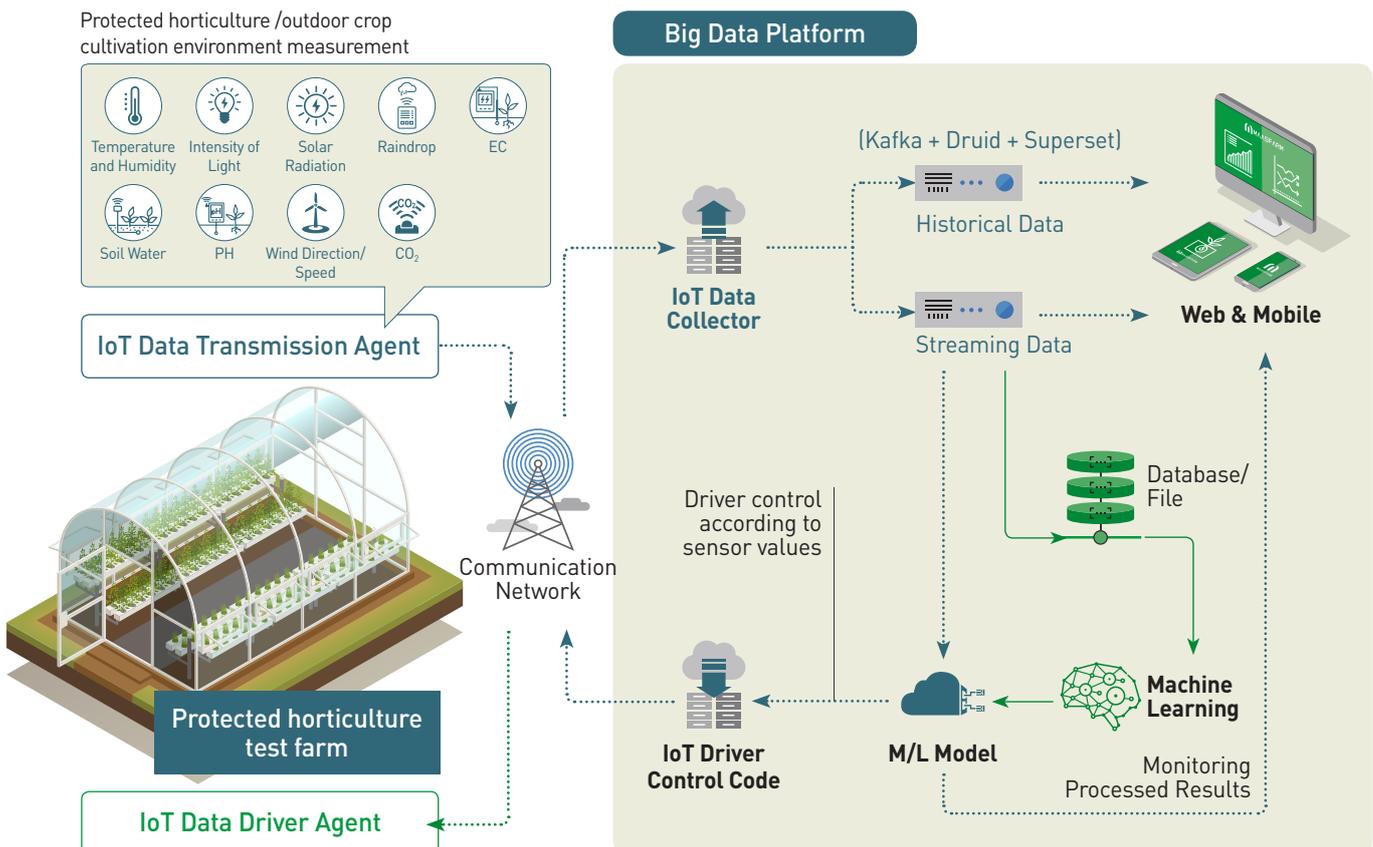
Cloud platform based cultivation logic crop-activity growth forecast analysis and control logic management solution of climate controller for for the optimized production specified UI intelligent data service(crop activity-circulation pricing-controller monitoring anf ctrlloer control and pricing forecast proposal management system):

1. collecting environment and crop data through lte router and gateway embedded with sensors as 1st step analysis of monitoring application solution on apache hadoop based AI platform data frame, and analyzing and predicting crop activity data through embedded software controller of ai deep learning, and controlling driver like compound controller through cultivation logic controller embedded software
2. Embedding Software Development on Plaform Server, and Adapting for horticulture vegetable:
  - 1) Making model with the parameter of nutritional-reproductive growth index and environmental index through supervised machine learning, and deep machine learning using tensorflow with utilizing RNN algorithm architecture
  - 2) Using MQTT server, Making cultivation logic with logic controller of growth-environmental filtered data for the control key
  - 3) Making the control key value for horticulture controller devices subject to the optimized prediction deep learning model on the parameters of growth environmental index as follows:
    - Deep machine learning controller embedding with RNN algorithm to forecast the optimized parameter value through the process-analysis of supervised machine learning using RNN AI deep learning algorithm controller
    - MQTT server cultivation logic controller embedding for horticulture controller device after optimized forecast and interface with supervised learning database on filtering rule specification by UI domain knowledge
3. circulation pricing-controller monitoring anf ctrlloer control and pricing forecast proposal management system



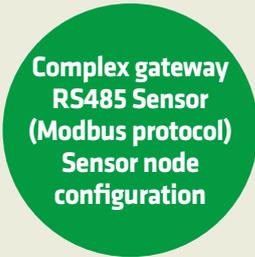
## AIoT

AI Cloud platform analysis solution+IoT gateway internet router+Sensor IoT/ Device IoT and Controller IoT System



# KSX3267 Sensor node application (Korea standard)

- + KS standard products (temperature, humidity, CO<sub>2</sub>, EC, PH, insolation) interlocking gateway
  - Check the data class/data format of RS485-based sensors through complex node gateways and cloud platform APIs
    - Checking the sensor/drive classification
    - Checking the sensor operation status
- + Crop activity analysis and cloud-based cultivation logic complex automatic control solution for crop standard service of production and yield



**Complex gateway  
RS485 Sensor  
(Modbus protocol)  
Sensor node  
configuration**



Pyranometer (Solar Radiation)



CO<sub>2</sub> Sensor Module



Air Temp. & Humidity Sensor



CO<sub>2</sub> Sensor Module



pH, EC Controller PE300 SET

# 3rd generation smart farm system (KSX3267 Sensor node application)

- + Tomato/Paprika AI-SaaS Platform-Based Production Forecast-Insect Disinfection UI Intelligent Data Service Unmanned Automatic Cultivation Greenhouse Operation Management AIoT Solution 3rd Generation Smart Farm System

