CASE STUDY

Smart Agriculture solution for a strawberry greenhouse farm in Japan

Strawberry farm yields are extremely sensitive to environmental conditions such as temperature, solar radiation, humidity , air quality etc. Even minor changes in these parameters could severely impact the quality and yield of the farm. However, controlling these parameters in the green house manually is a labor intensive process, often prone to errors resulting in huge labor costs and unpredictable output quality. To address this challenge, customer wanted to develop a smart agriculture solution that would capture and monitor these parameters in real time and provide actionable insights back to labor and administrators.

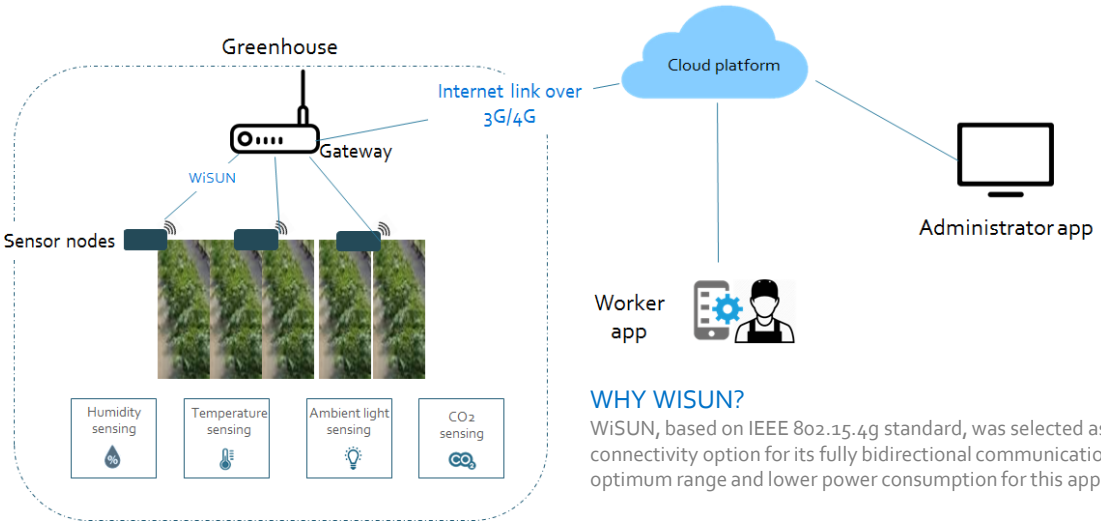
Altiux was selected as software technology provider for the solution. Altiux worked with semiconductor chipset provider (for sensor devices, and gateways), cloud platform vendor and other ecosystem players as part of this project to deliver complete solution

THE SMART AGRICULTURE SOLUTION

The solution was developed keeping in mind key constraints of the requirement in terms of power supply at one location only, connectivity availability, environmental challenges etc. Key components of the solution included:

- Sensor devices : with temperature, humidity, CO_2 and ambient light sensors communicating over Wi-SUN communication protocol
- Gateway device : with an internet link over cellular network on the north side and Wi-SUN communication on the south side
- Cloud platform : to aggregate data from multiple devices
- Applications : for workers and admins to provide actionable insights

SOLUTION REPRESENTATION



WHY WISUN?

WiSUN, based on IEEE 802.15.4g standard, was selected as the wireless connectivity option for its fully bidirectional communication capabilities with optimum range and lower power consumption for this application

WHAT ALTIUX DID?

Altiux provided the software technology for the solution including:

- Sensor device software that enables easy sensor integration and optimized power consumption
- Gateway software using Altiux's BoxPwr framework to enable data aggregation and communication to cloud
- Other software leading to actionable insights to control light, temperature and water inputs

WHY ALTIUX?

Altiux's ready to use BoxPwr software framework reduced the development time and cost of the solution. The standards based framework with unified APIs, safeguards investments as it renders the solution extremely resilient to changes in technology

CONCLUSION

The solution was deployed at the strawberry farms for one of the leading strawberry production houses in Japan. Altiux provided technical expertise and engineering services to overcome deployment challenges pertaining to communication range, communication scheduling, power consumption at sensor devices etc. The use of Altiux's BoxPwr software in solution also enables the service provider to easily switch to other connectivity technologies, sensing technologies and protocols without significant changes to software.

Altiux Innovations is a software and product engineering services organization focused on designing, developing and deploying Internet of Things (IoT) enabled products and solutions for the smart connected world. Our flagship offering - IoT Toolkit – is a comprehensive suite of ready to use software frameworks for IoT implementations. It helps our clients offer differentiated solutions while accelerating time-to-market, reducing overall product development expenses and future proofing investments. For more information, visit our website at www.altiux.com or write to us at marketing@altiux.com