

Milesight Development Platform Enables Smart Agriculture Project in Australia

Easy Proof-of-Concept and Project Scaling of Smart Irrigation Management Systems for Australian Farms

Location: Australia

Milesight Partner
Digital Cache

Location
Australia

Platforms & Devices
Milesight Development Platform
EM500-SMTC, Milesight UC511-DI
Milesight UG67, Milesight EM500-PP

Applications
Farm Irrigation Automation
Third-party Integration

Background

Pim's Organics is a certified organic farm located in the Glasshouse Mountains, Queensland in Australia. The farm offers a variety of organic produce, including strawberries, tomatoes, vegetables, custard apples, and avocados but is challenged by the highly variable weather in the Brisbane region which requires farmers to adapt their crop choices and farming methods based on the season. Different crops also demand specific soil conditions and drainage systems.

In need of an agricultural irrigation system, the farm approached our partner Digital Cache, a Brisbane-based provider of managed IT services for local businesses.



Challenges & Needs Analysis



Soil and Drainage Monitoring

Each field had unique soil conditions, necessitating precise monitoring and control.



Device Integration and Data Flow

Hassle-free integration of soil sensors and other devices into Digital Cache's irrigation management application with uplink and downlink data transmission.



Cost-Effective Scalability

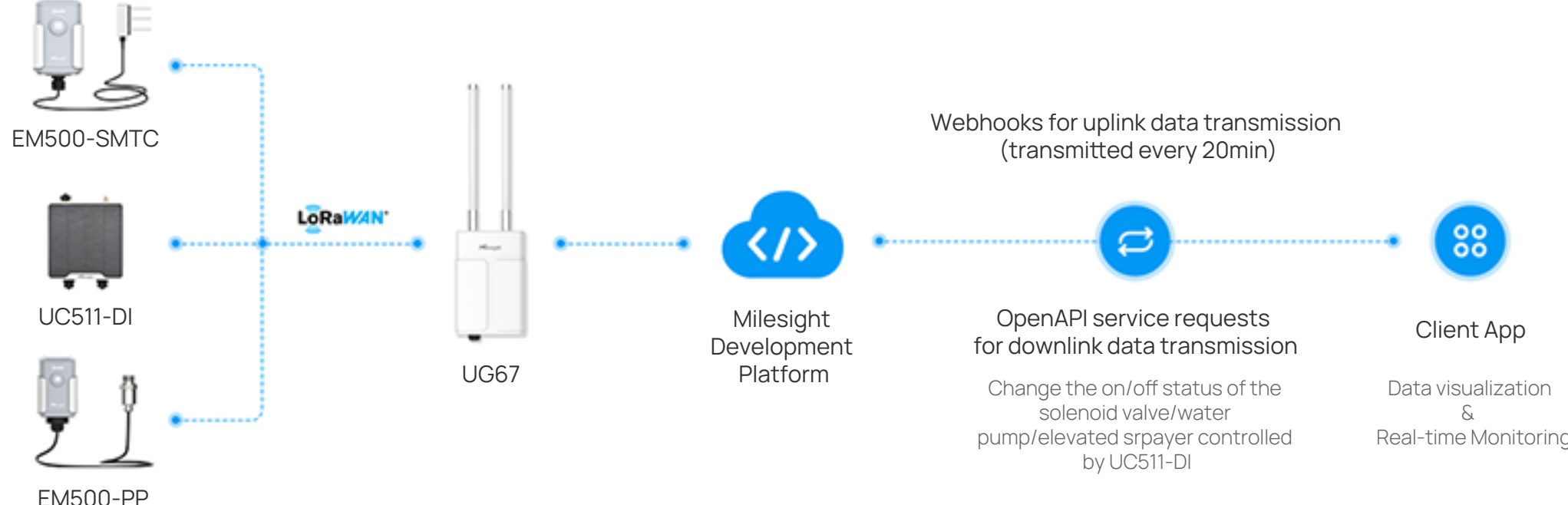
The solution should be affordable, easy to deploy, and scalable across multiple farms.



Economical Pump Protection Solution

Existing pump protection systems are too expensive so farmers are looking for an alternative solution.

Solution



Devices

- Milesight EM500-SMTC:** Soil moisture and temperature sensor.
- Milesight EM500-PP:** Pressure sensor used for protective monitoring of water lines and pumps.
- Milesight UC511-DI:** Controller for solenoid valves, water pumps, and elevated sprayers.
- Milesight UG67:** LoRaWAN gateway for reliable connectivity.



Integration Platform

- Milesight Development Platform:** For easy integration of Milesight devices into third-party systems (in this case, Digital Cache's irrigation management application) and bidirectional data flow.

Key Features Enabled

Uplink Transmission via Webhooks

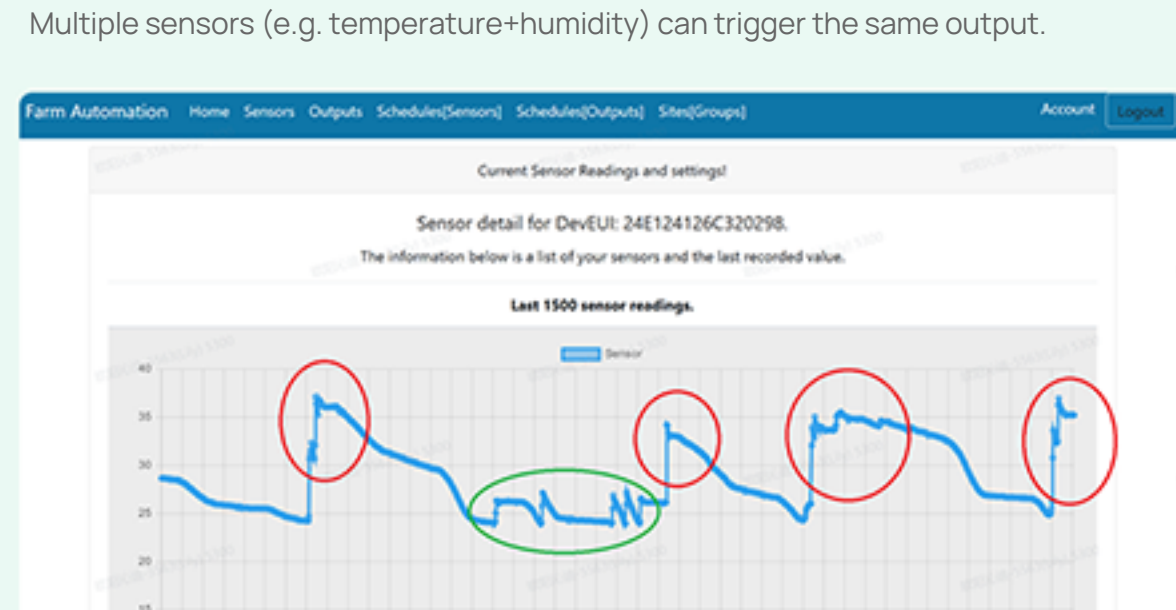
- EM500-SMTC, UC511-DI and EM500-PP are connected to Milesight Development Platform via the UG67 gateway, configured to report sensor data to the management system via webhooks every 20 minutes.



Current Sensor Readings!						
List of your sensors across all sites!						
The information below is a list of your sensors and the last recorded value.						
#	Location	Sensor Type	Description	Last Value	On/Off	Actions
1	Display Garden	Battery	Battery Level	3.75	<input checked="" type="checkbox"/>	View
1	Display Garden	Soil	Soil Moisture	1830	<input type="checkbox"/>	View
2	Tomatoes	Battery	Battery Level	3.89	<input type="checkbox"/>	View
3	Tomatoes	Soil	Moisture Sensor	2313	<input type="checkbox"/>	View
4	Vegetables_1	soil_moisture	Vegetables test, Milesight EM500 bed 1	45	<input type="checkbox"/>	View
5	Vegetables_1	temperature	Vegetables Milesight EM500 test 1 temperature	15.1	<input type="checkbox"/>	View
Add a new Sensor						

Downlink Transmission

- When sensors are activated by reported values or manually triggered, the management system sends downlinks via OpenAPI to Milesight Development Platform to modify UC511-DI-controlled devices (solenoid valves/pumps/overhead sprinklers).
- When timers or sensor values clear alarms, downlinks are sent to the platform to adjust UC511-DI valve switches.
- Users can set trigger thresholds (e.g. EM500-SMTC triggers UC511-DI valves when soil moisture is low at 24% and deactivates them when soil moisture goes above 26%). Multiple sensors (e.g. temperature+humidity) can trigger the same output.



Monitoring & Control

- Real-time Monitoring Dashboard:** The irrigation management system dashboard displays real-time soil moisture data.
- Multi-Output Control:** Sensors can activate output networks (pumps+multiple valves across fields). Valves remain active until all linked sensors are cleared.
- Scheduled Operations:** Configure schedules to trigger sensors/outputs (one-time/daily/weekly) until reaching trigger rules.
- Selective Output Disabling:** Temporarily disable specific outputs (e.g. disable sprinklers during harvest while maintaining ground irrigation).
- Resource Management:** Set limits on simultaneously active sensors based on pump capacity.

Current Schedules										
List of your schedules across all sites!										
The information below is a list of your schedules and the sensor set rules.										
#	Start Date	Schedule Type	Duration/Sensor Value	Last Run	Next Run	Repeat Days	Time Zone	Enabled		
1	2023-05-10 09:00:00	Schedule	45.0	2023-05-09 09:00:00 (30763)	2023-05-10 09:00:00	1	CST	<input type="checkbox"/>	View	Edit
2	2023-05-10 10:00:00	Schedule	30.0	2023-05-09 10:00:00 (14652)	2023-05-09 10:00:00	1	CST	<input type="checkbox"/>	View	Edit
3	2023-05-17 14:00:00	Schedule	45.0	2023-05-09 14:00:00 (28473)	2023-05-09 14:00:00	1	CST	<input type="checkbox"/>	View	Edit
4	2023-05-17 15:00:00	Schedule	45.0	2023-05-09 15:00:00 (30763)	2023-05-09 15:00:00	1	CST	<input type="checkbox"/>	View	Edit
5	2023-05-17 15:00:00	Schedule	45.0	2023-05-09 15:00:00 (40763)	2023-05-09 15:00:00	1	CST	<input type="checkbox"/>	View	Edit
6	2023-05-17 15:00:00	Schedule	45.0	2023-05-09 15:00:00 (14652)	2023-05-09 15:00:00	1	CST	<input type="checkbox"/>	View	Edit
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8	2023-05-17 15:00:00	Schedule	45.0	2023-05-09 15:00:00 (30763)	2023-05-09 15:00:00	1	CST	<input type="checkbox"/>	View	Edit
Add a new Schedule										

Results

Efficient and Irrigation Management

Real-time monitoring and automated control optimized water usage, crop health and waterline and pump durability.

Cost Savings

The solution brought tremendous monetary savings by drastically reducing manual labor.

Scalability

Digital Cache has tested and expanded the solutions across 6 sites.

Project Deployment Efficiency

Milesight's OpenAPI and Webhook integration effectively reduced device integration time and shortened time-to-market.

About Milesight Development Platform



Milesight Development Platform simplifies IoT device deployment, management, and third-party integration by providing practical tools like RESTful APIs, Webhooks, and pre-configuration templates. It allows easy connectivity of Milesight devices without requiring in-depth knowledge of LoRaWAN® or network servers.

Why Choose Milesight

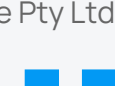


We have been looking and experimenting with different IoT devices and platforms to automate tasks and record sensor results.

The documentation, ease of deployment and support for the development platform has reduced our development time, making it quick and easy to create a fast and reliable solution for our clients.

The development platform and the team from Milesight have been great to work with, offering a high level of service and quick responses to all questions.

—David Quinn
Digital Cache Pty Ltd



About Digital Cache

Digital Cache is a Brisbane-based provider of managed IT services (MSP) for local businesses. The company offers a fast, efficient backup solution with flexible storage, bandwidth, and multi-account options—all configured for seamless business use.

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