

Precision Farming

Maintaining Healthy Livestock Environments



The Problem

Environment, feed and water intake are three critical elements to raising healthy and food-safe livestock. With increased government and regulatory oversight and tracking of livestock conditions, a system integrator wanted to develop an affordable, easy-to-deploy and scalable solution to securely and wirelessly monitor environmental conditions across multiple livestock housing sites.

The system would allow farmers to:

- Monitor temperature, humidity, light, and air quality conditions.
- Provide real-time alerts and notifications to enable farmers to respond to changing environmental conditions.
- Use historical data collected to better determine and optimize husbandry and livestock health and production results.

Precision Farming:

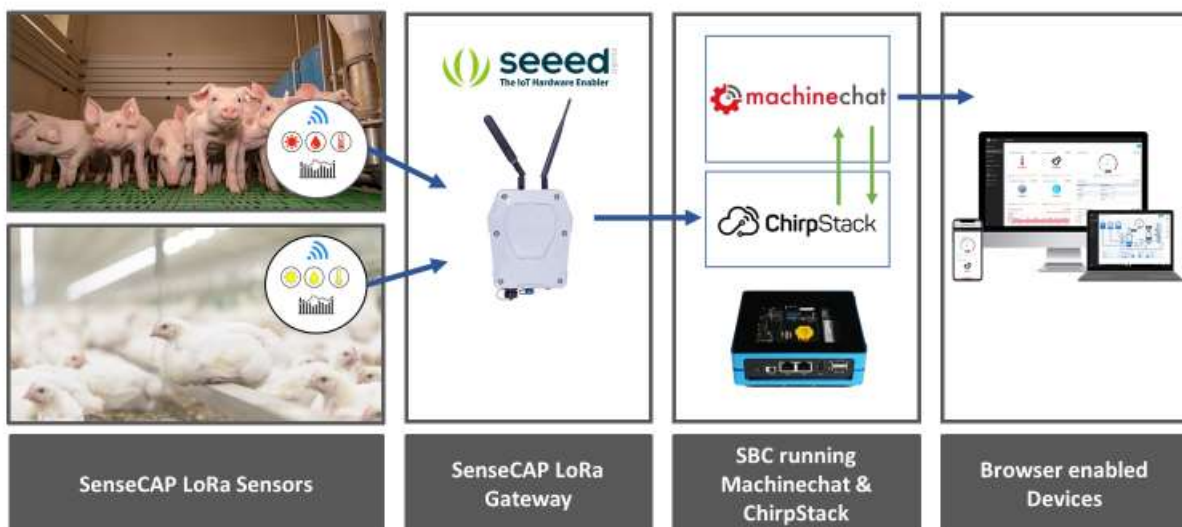
Maintaining Healthy Livestock Environments

The Solution

The system integrator uses industrial grade Seeed Studio SenseCAP LoRa temperature, humidity, light and air quality sensors and a SenseCAP LoRa gateway connected to a local server that is enabled with Machinechat JEDI One software and ChirpStack.

Using JEDI One's data collectors, the system integrator can incorporate data collection, visualization and monitoring in hours. In addition, JEDI One's drag and drop rules and notifications features allow for easy configuration, enabling and disabling of real-time and scheduled alerts depending on the type and life cycle of livestock being housed in specific areas.

JEDI One's local and customizable storage allows data to be segmented and exported as needed to local and cloud-based applications, enabling the right data to go to the right application at the right time.



Precision Farming:

Maintaining Healthy Livestock Environments

The Benefits

- Reduce development and implementation costs with ready-to-use hardware and software that enables field-ready solution to be developed in days.
- Standardization on robust, industrial grade Seeed SenseCAP sensors allow for easy deployment in a wide range of indoor and outdoor precision farming applications.
- Reduce recurring cloud processing costs and deliver enhanced data privacy and security through an on-prem deployment.
- Enable onsite IT to easily update for different livestock lifecycle stages using JEDI One's integrated rules engine and easy-to-configure dashboards eliminating the need for costly on-going software customization.





**Ready to Use
LoRa SOLUTIONS**

Product Features

Seeed Studio SenseCAP: Industrial LoRa Sensors & Gateways

- Support LoRaWAN protocol Class A
- Ultra-wide-distance transmission: up to 10km line of sight
- Support multiple ISM bands: EU868, US915, AU915, AS923
- Supports Ethernet backhaul; cellular optional
- Industrial grade protection: IP66 enclosure, suitable for outdoor applications able to operating in temperatures from -40°C to +70°C (up to 85°C for SenseCAP sensors)
- High reliability and stability
- Sensor battery life of 3+ years
- Rapid installation and deployment

Machinechat JEDI One & Pro: On-Prem All-in-One IoT Software

- Available for Windows, macOS, Linux, Raspberry Pi and BeagleBone
- 30MB binary size, no runtimes or dependencies - integrates easily into ARM-based gateways
- Responsive, multi-user web interface
- Built-in data collectors for HTTP/REST, MQTT, TCP
- Integrated Seeed Studio SenseCAP data collector (included in Pro SSE only)
- Custom plug-ins allow integrating virtually any device or sensor
- Integrated rules engine, alerts and notifications
- Smart local data storage
- Support for multiple users/role-based access. Secure communications support – SSL/TLS
- Build and deploy projects and POCs in hours, not weeks

Distributed by

