

Smart Milk Vat Monitoring Solution for New Zealand Dairy Farms

2025 Impact Awards Winner Case

Location: New Zealand

Milesight Partner
Scopious IoT

Location
New Zealand

Applications
Water Management, Temperature & Humidity Monitoring, Power Consumption Monitoring, Infrastructure Management

Number of Devices Deployed
TS201*285, CT101*165, EM410-RDL*165, UG65*120

Background

The dairy industry in New Zealand demands precision and reliability to maintain milk quality throughout the entire production process.

Agora, a sister company of Deosan with over 20 years of experience in this sector, recognized a need for on-farm technology that is cost-effective, transparent, resilient, and easy to use.

To address this, Scopious IoT developed a LoRaWAN®-based smart milk vat monitoring system by integrating Milesight's sensors and gateways with the Scopious IoT platform. The solution delivers continuous real-time insights into vat operations, helping farmers reduce losses, ensure compliance, and protect milk quality.



Challenges



Lack of Real-Time Visibility

Traditional monitoring methods provide limited insight into vat temperature, fill levels, and agitator performance, making it difficult to detect anomalies before they affect milk quality.



High Operational Burden

Manual checks and maintenance are time-consuming and error-prone, taking farmers away from other essential duties.

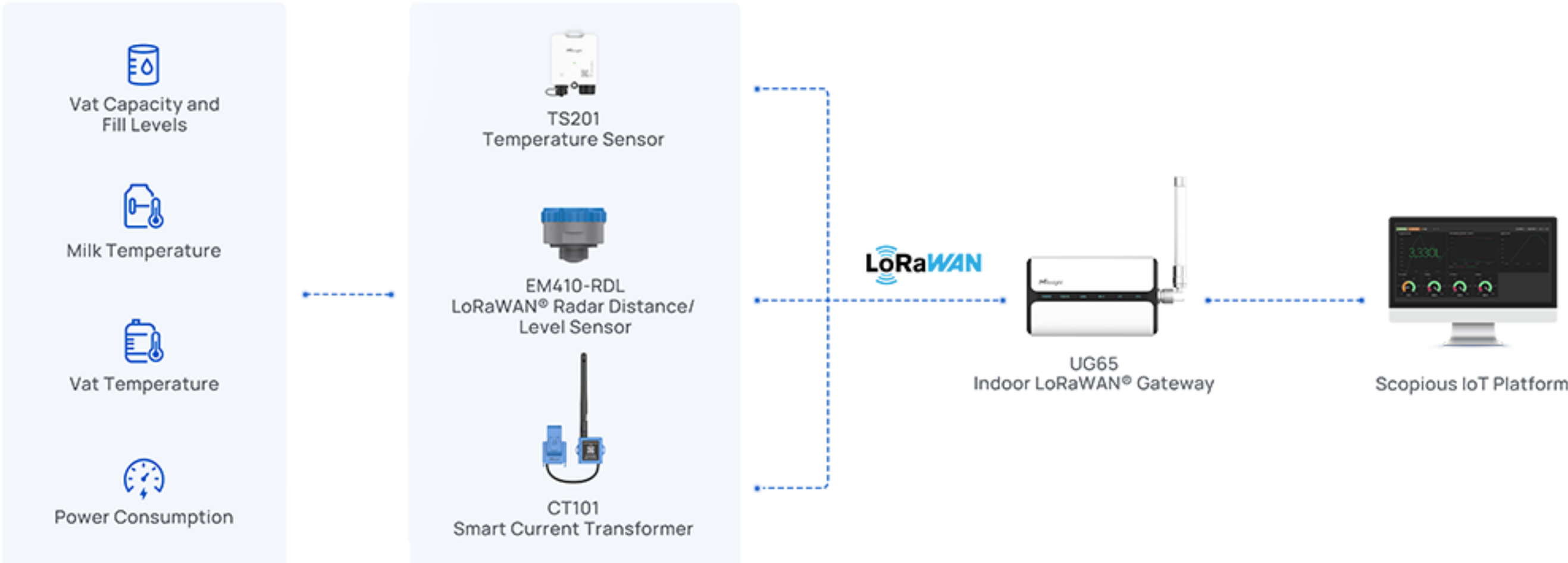


Need for an Easy & Scalable System

Farmers needed a simple, plug-and-play solution that could be deployed quickly, scaled easily, and managed remotely with minimal technical expertise.

Solution

A turnkey smart milk vat monitoring system was designed, combining Milesight's reliable LoRaWAN® sensors and gateways with Scopious IoT's intelligent data platform.



- EM410-RDL Radar Distance/Level Sensors are mounted on top of milk vats to measure capacity and fill levels in real time. These work together with temperature sensors and CT clamps.
- CT101 Smart Current Transformers are used to monitor vat agitators, ensuring consistent milk mixing and stable temperature distribution.
- TS201 Temperature Sensors track the temperature of the milk going into the vat as well as the vat's internal temperature.

All sensor data is transmitted via LoRaWAN® to the Milesight UG65 Semi-Industrial Gateway, which ensures long-range, multi-channel reception and stable communication.



Once received by UG65, data is securely forwarded to the Scopious IoT Platform, where it is visualized through an intuitive dashboard.

The platform triggers smart alarms for parameters such as agitator faults, vat capacity and level, vat emptying, hot wash completion, and milk temperature peaks, enabling proactive maintenance and uninterrupted milk processing.

This integrated system gives farmers real-time visibility into the entire milk handling process, enabling faster fault resolution and more reliable milk quality management.



Results

The combined expertise of Milesight, Scopious IoT, and Agora led to a seamless, scalable, and reliable smart milk vat monitoring solution that is transforming dairy operations across New Zealand.

- Ease of Deployment**
The system is easy to install, requires minimal training, and can be scaled to multiple vats or sites with little configuration effort.
- Improved Milk Quality & Safety**
Consistent monitoring ensures optimal temperature control, preserving milk freshness and compliance with dairy quality standards.
- Faster Fault Detection & Reduced Downtime**
Real-time alerts allow farmers to quickly identify and fix issues such as agitator faults or abnormal temperature changes, reducing spoilage and equipment downtime.
- Cost-Effective & Scalable Operations**
By leveraging LoRaWAN® technology and centralized dashboards, farms can achieve reliable monitoring at a fraction of the cost of wired systems, while being ready for future expansion.

This turnkey solution not only simplifies daily operations for farmers but also sets a new benchmark for dairy process monitoring across the region. Future plans include expanding the system's scalability and bringing this model to other agricultural markets.

Discover More about Milesight Product



EM410-RDL LoRaWAN® Radar Distance/Level Sensor



TS201 Cost-Effective Temperature Sensor



CT101 Smart Current Transformer



UG65 Semi-Industrial LoRaWAN® Gateway

Why Choose Milesight



Scopious IoT has worked closely with Milesight since 2019, valuing its innovation, flexibility, and deep collaboration.

For this project, Milesight offered extensive hardware customization, from device branding and packaging to fine-tuned product integration, ensuring the final solution matched Agora's vision for a professional, plug-and-play system.

As Scopious IoT puts it:

"We couldn't have done it without Milesight. Their support, flexibility, and dedication have been instrumental in turning our concept into a fully realized solution."

This collaboration demonstrates how Milesight's adaptive IoT technology empowers partners to rapidly turn industry challenges into smart, scalable solutions.



About Scopious IoT

Established by New Zealand wireless hardware distributor Go Wireless NZ Ltd, Scopious IoT helps businesses, councils, and communities work smarter by turning real-world environmental data into clear, actionable insights.

Our platform makes powerful IoT technology simple, scalable, and affordable, whether you're managing water, protecting ecosystems, boosting farm yields, or monitoring remote infrastructure.

By connecting hardware, people, and ideas, Scopious enables confident, data-driven decisions that reduce waste, improve safety, and support sustainable operations for a more connected world.