



Industry
Agriculture

Location
South Africa

Solution
Long Distance
Reading

ZKTeco Long Distance Reading Solutions Empowering Famous Livestock Management Solutions Provider for Intelligent Livestock Management

Client Overview

Famous Livestock Management Solutions Provider is a revolutionary livestock management system that uses advanced monitoring and management techniques leveraging ultra-high-frequency RFID technology to provide health monitoring and bulletproof traceability. The system logs livestock movement, health events, and any changes in ownership, storing the data in the cloud for instant access to a complete, auditable history from birth to sale or slaughter.

Famous Livestock Management Solutions Provider verifies origin, prevents theft, and facilitates compliance with traceability regulations. It optimizes productivity and safeguards herds with automated reports and real-time insights accessible on mobile devices, establishing itself as a trustworthy intelligent system across the supply chain.

Requirement

Effective Positional Tracking of Livestock

Famous Livestock Management Solutions Provider is a management system specifically designed for agriculture and livestock, tracking and managing livestock health, breeding and data of production. Like human resource management of human enterprises, understanding livestock locations and activities are the prerequisite for effective management. Animal behaviour and activity reflect their condition, providing essential data for improving strategies of grazing and feeding to enhance productivity. As a leading global security solution provider, ZKTeco provided a positional tracking system for Famous Livestock Management Solutions Provider.



Challenges

Difficulty in Tracking Animals

As human may never be able to teach animals to self-scan their fingerprints (if any), palms (again if any) or facial features (if possible), and they do not remain stationary like inanimate objects, many tracking and identification methods generally applied to human or objects for access control or time & attendance are difficult to be deployed in livestock management.

Environmental Limitations

As Famous Livestock Management Solutions Provider is used in farm settings, which differ significantly from typical locations like offices, farms are often located in remote areas such as forests or mountains, where common Global Positioning System (GPS) signals can be unstable for accurate location tracking.

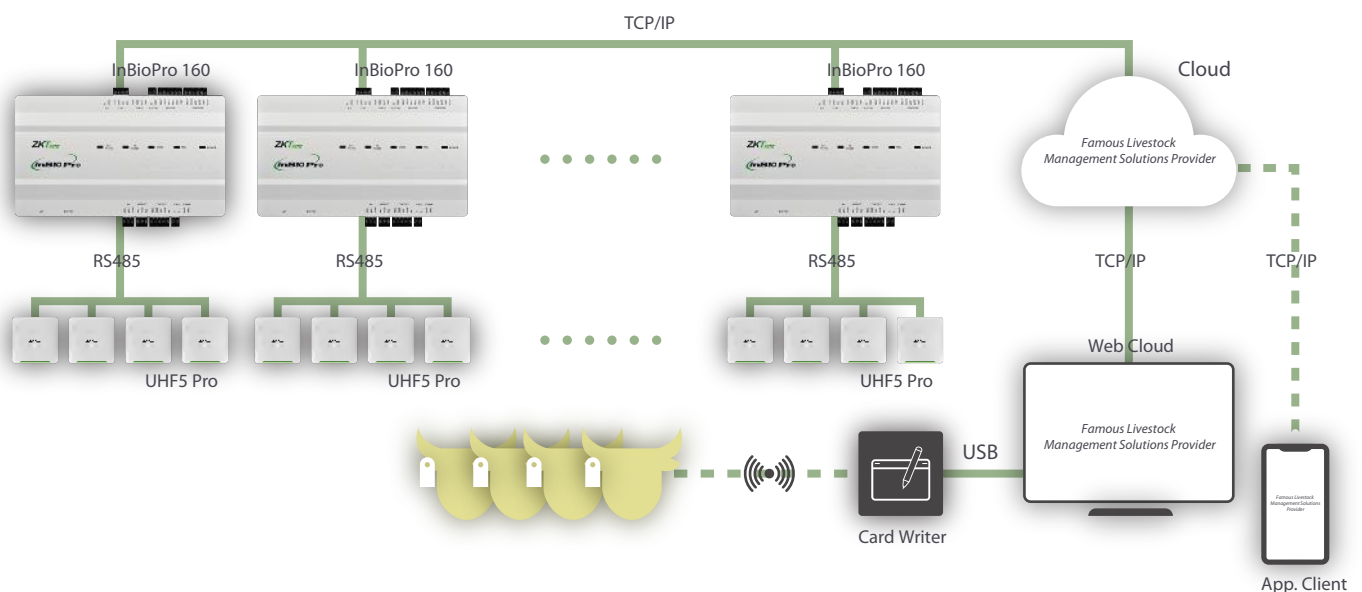
Additionally, as GPS devices typically consume a certain amount of electricity power, while wired electricity is not always available in all areas of farm, it may need to deploy GPS devices that require frequent recharging or battery changes, leading to tracking instability. Ensuring reliable operation requires significant human resources for monitoring and maintenance may cause heavy burden of cost.



Data Integration Difficulties

Precisely tracking livestock is just a prerequisite for effective management. The main purpose of using Famous Livestock Management Solutions Provider, is to utilize the tracking data for intelligent management and decision-making. Therefore, tracking data must be easily extractable and integrable into the Famous Livestock Management Solutions Provider management system. If data integration consumes excessive human resources or time, the functionality of Famous Livestock Management Solutions Provider will be greatly diminished.

Solution—ZKTeco UHF-5 Pro Long-Distance Identification Integration



ZKTeco

Livestock Positional Tracking with ZKTeco UHF-5 Pro Readers

Considering the requirements, ZKTeco has provided Famous Livestock Management Solutions Provider with the UHF5 Pro long-distance readers installed at main entrances, entry points of different areas, water points and health check stations. These readers are part of Famous Livestock Management Solutions Provider's hardware and are connected to Famous Livestock Management Solutions Provider's cloud system via the InBioPro-1160 access controller for system integration.

ZKTeco also has provided UHF tags for all livestock to wear. All the UHF tags are read by the UHF5 Pro Readers to obtain positional tracking data. The data are instantly delivered to the cloud system of Famous Livestock Management Solutions Provider via the InBioPro-1160 Access Controllers.

Livestock Health Check Records

In addition to the UHF5 Pro readers, ZKTeco's UHF tags can also be read by third-party readers integrated with the Famous Livestock Management Solutions Provider system. When users use Famous Livestock Management Solutions Provider's health check, they are enabled to use Famous Livestock Management Solutions Provider's RFID read & write devices to read and rewrite the livestock's UHF tags for quick and easy identification and editing of livestock health records without manual data entry.



Customized Hardware Power Supply

The UHF5 Pro readers are designed for DC12V wired power supply by default. However, considering Famous Livestock Management Solutions Provider's application in farm environments, All the UHF5 Pro Readers are connected to a lithium battery system powered by solar energy for use in areas lacking wired electricity.

Features and Benefits

Efficient Livestock Positional Tracking

The UHF5 Pro Readers are designed for long-distance identification, with a reading distance of up to 8 meters, effectively covering large entry points to ensure accurate tracking of livestock locations. As ZKTeco's UHF5 Pro Readers are RFID-based, which directly read signals of the credentials, reliance on satellites or base stations for signal reception, reducing errors caused by remote locations is avoided.



InBioPro 160



UHF-5 Pro

Powerful System Integration Capabilities

ZKTeco's UHF5 Pro Readers and InBioPro-1160 Access Controllers can be integrated with various third-party devices and systems through different SDKs and communication protocols like RS485 and TCP/IP, enhancing system functionality cost-effectively.



Integration with Famous Livestock Management Solutions Provider Cloud System

The UHF5 Pro readers are connected to the InBioPro-1160 access controller via RS485 and are then connected to Famous Livestock Management Solutions Provider's cloud server via TCP/IP, enabling seamless integration without complex configurations. The collected tracking data is delivered in real-time to the Famous Livestock Management Solutions Provider system for management.

Livestock locations and movements are recorded as the UHF tags are read by the UHF5 Pro readers and delivered instantly to the Famous Livestock Management Solutions Provider cloud system, facilitating real-time monitoring for tracking behavior and activity. Famous Livestock Management Solutions Provider utilizes intelligent algorithms to integrate tracking data for daily activity records, behavioural pattern analysis and health alerts. For example, monitoring changes in livestock behavior at water points can indicate possible health issues for individual animals or groups.

Users can easily record each livestock's health status, vaccination and breeding records, utilizing data analysis to identify health issues promptly. Additionally, Famous Livestock Management Solutions Provider provides breeding management functions to help manage breeding cycles and improve productivity. Users can generate various reports for decision-making and management, with data stored in the cloud for access anytime, anywhere, making Famous Livestock Management Solutions Provider an essential tool for enhancing agricultural productivity and management efficiency.



Integration of ZKTeco UHF Tags with Health Check System

ZKTeco's UHF tags comply with the EPC (Electronic Product Code) Global UHF Class 1 Gen 2 standard, enabling integration with numerous compliant third-party readers, including those used for livestock health checks of Famous Livestock Management Solutions Provider, for users to directly edit health check data and details, including each livestock's health status, vaccination, and breeding records on their UHF tags during health inspections. Thus, Famous Livestock Management Solutions Provider users can access and update health records by simply scanning the UHF tags, significantly improving operational efficiency without additional installation costs.

Strong Environmental Adaptability

Weather

The UHF5 Pro readers are graded with IP66 rating for water and dust resistance, suitable for most outdoor environments. They operate within a wide temperature range of -20°C to 65°C and can withstand relative humidity levels up to 85%, ensuring proper functionality despite significant weather changes and reducing the risks of equipment damage or failure, leading to more stable management of the Famous Livestock Management Solutions Provider system and lower maintenance costs.



Power

The UHF-5 Pro readers have low power consumption, requiring only 1.2 to 4.2W and operating voltage of 9 to 15V, allowing them to connect to solar power systems for stable operation. This significantly reduces installation costs for power supply infrastructure, enhancing cost-effectiveness in remote or installation-restricted farm scenarios.

Flexible Scalability of System Expansion

ZKTeco's products are designed for integration with various devices and systems, providing strong integration capabilities. Connecting the ZKTeco UHF5 Pro Readers to Famous Livestock Management Solutions Provider's InBioPro-1160 Access Controller can handle up to 100,000 UHF tags, enabling ultimate scalability for future expansion. In case any expansion of farm is needed, Famous Livestock Management Solutions Provider can directly install more ZKTeco UHF series readers and InBio Pro series access controllers to expand the system without resetting the solution, maximizing cost-effectiveness.

