Water Irrigation Case Study

Mobile pivot control with long-range radio communication and native iOS support.
Industry: Agriculture

Quick Facts

Attribute	Value
Customer	Irrigation Automation Company
Application	Pivot irrigation control and monitoring
Communication	Ethernet radios up to 21 miles range
Mobile	iOS (iPad/iPhone)
Data Logging	Built-in SQL with regulatory reporting

The Challenge

Challenge: Visualize and control real-time data to improve efficiency and performance of irrigation pivots in the field, while allowing farmers to communicate via mobile devices (iPad/iPhone).

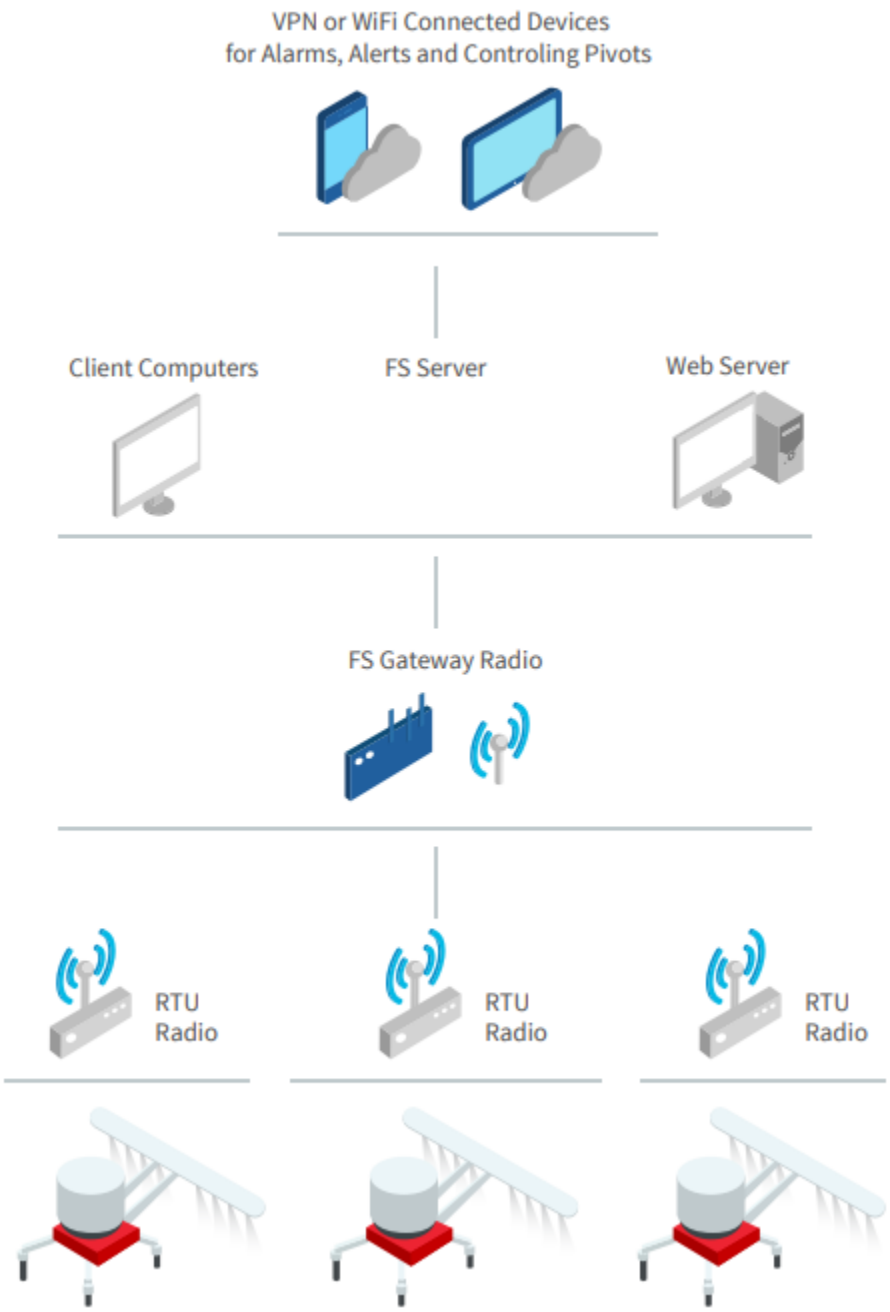
Specific pain points:

- Needed complete software package with connectivity, communications, report generation, and graphics all-in-one
- Required native mobile device support for field operations
- Long-range radio communication (up to 21 miles) with bandwidth constraints
- Water consumption reporting required for Canadian and US government regulations
- Other packages evaluated were "extremely long in the tooth, could only communicate with a single PLC, or were lacking in data collection capabilities"

Impact: Without integrated mobile-first solution, farmers lacked real-time visibility and control of remote pivot systems.

The Solution

Architecture



Tier	Component	Capabilities
Field	RTUs at pivots	Local control and sensing
Transport	Ethernet radios	Up to 21 miles range
Gateway	FactoryStudio Gateway	Radio communication hub
Server	FactoryStudio Server	Data logging, alarms, reports
Clients	iPad/iPhone (native iOS)	VPN/WiFi connected, alarms, alerts, pivot control

Key Capabilities

Feature	Application

Native iOS Support	Application runs natively on iPad/iPhone
Long-range Radio	Ethernet radios reaching up to 21 miles
SQL Data Logging	Built-in logging for compliance reporting
PLC Communication	Single-threaded driver optimized for radio bandwidth
.NET Development	Complex animations and scripts using Microsoft .NET
Online Configuration	Make changes without application restart

Regulatory Compliance

- Water Consumption reports generated automatically
- Reports emailed to users
- Compliant with Canadian and US government regulations

Key Enablers

FrameworX capabilities that made this solution possible:

Capability	Application
iOS Runtime	iPad/iPhone application
Flexible PLC Communication	Single-threaded driver optimized for radio bandwidth constraints
Built-in SQL Data Logging	Regulatory compliance reporting
.NET Development Tools	Complex animations and scripts with Intellisense
Online Configuration	Continue development without restarts
Real-time Alarms & Alerts	Instant notification to mobile devices

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The Results

- **Rich Operator Experience** — Modern intuitive interface differentiated customer from competition
- **Improved Efficiency** — Better water and chemicals usage through real-time monitoring
- **Reduced Downtime** — Significantly less pivot systems downtime
- **21-Mile Range** — Farmers control pivots up to 21 miles away via iPad/iPhone
- **Regulatory Compliance** — Automated Water Consumption reports for government requirements
- **Competitive Advantage** — Complex animations and functionality competitors couldn't match

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Customer Testimonial:

> "Due to the modern-intuitive interface I was easily able to develop a rich operator experience. When I needed a little help, the Tatsoft support and engineering team were quick to respond. FactoryStudio also provides the tools for us to make complex animations that were essential for us to separate ourselves from the competition."
>
> *— Project Manager, Irrigation Automation Company*

Resources:

Download case study: CaseStudy_Irrigation.pdf

This case demonstrates agricultural pivot control with mobile support and long-range radio communication.

In this section...
