Fisheries Use Case

Plant-wide SCADA for fish processing with water quality management and multi-protocol integration.
Industry: Food & Beverage (Fish Processing)

Quick Facts

Attribute	Value
Scale	10,000+ communication points
Workstations	20+ operator stations (3-6 monitors each)
Protocols	ControlLogix, Automation Direct ECOM, Modbus Ethernet
Processing Capacity	35-40% of annual U.S. Gulf Menhaden catch
Development	Multiple project phases over couple of months

The Challenge

Challenge: Modernize plant-wide SCADA system to control and monitor complex fish processing operations including water quality management, temperature control, holding tanks, cookers, presses, decanters, centrifuges, and post-production storage machinery.

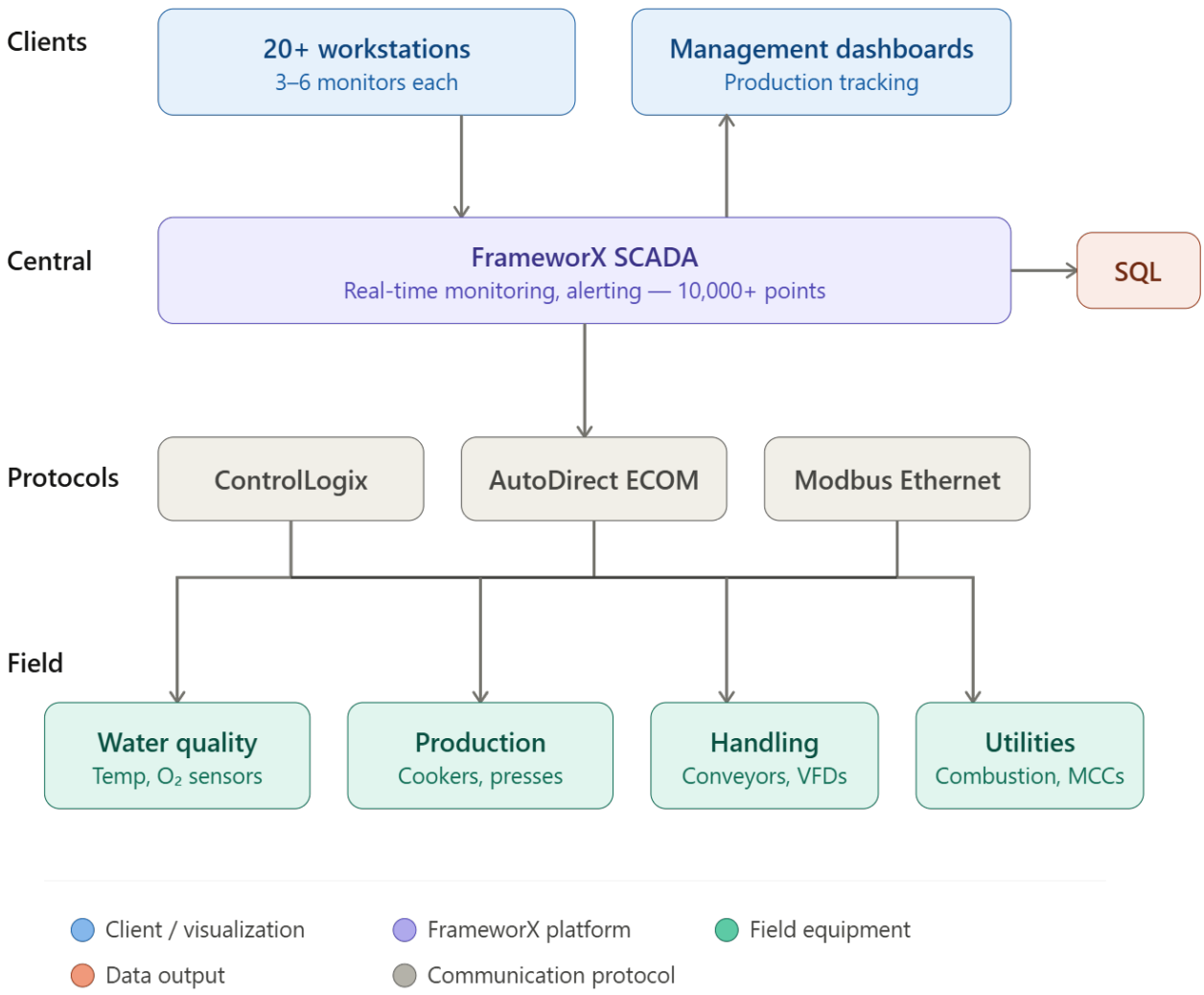
Specific pain points:

- Lacked integrated monitoring across diverse equipment and protocols
- Risk of fish mortality from unmonitored water quality conditions
- Production inefficiencies from disconnected systems
- Regulatory compliance issues from lack of data integrity
- Legacy systems couldn't provide real-time alerting
- Multi-protocol communications needed across facility

Impact: Without integrated monitoring, facility risked fish mortality, production losses, equipment failures, and regulatory non-compliance.

The Solution

Architecture



Tier	Component	Capabilities
Field	Processing equipment, sensors	Cookers, presses, decanters, centrifuges, water quality
Connectivity	Multi-protocol	ControlLogix, Automation Direct ECOM, Modbus Ethernet
Central	FrameworX SCADA	Real-time monitoring, alerting, data collection
Clients	20+ workstations	3-6 monitors each, management dashboards

Equipment Monitored

Category	Equipment
Water Quality	Sensors, temperature/oxygen transmitters
Production	Cookers, presses, decanters, centrifuges
Material Handling	Conveyors, automated feeding systems
Utilities	Combustion systems, VFDs, MCCs
Instrumentation	Pressure transmitters

Connectivity

Protocol	Application
ControlLogix	Primary PLC communication
Automation Direct ECOM	Additional controllers
Modbus Ethernet	Field devices and sensors

Key Enablers

FrameworX capabilities that made this solution possible:

Capability	Application
Multi-Protocol Support	Native drivers for ControlLogix, Automation Direct ECOM, Modbus Ethernet
Real-Time Alerting	Automated monitoring with instant alerts for abnormal conditions
Live Update Capability	Update plant pages without server restarts
.NET Framework Integration	Future compatibility and sustainable operations
Robust Redundancy	Zero data loss design for critical parameters
Scalable Platform	20+ workstations, 10,000+ communication points

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The Results

- **Zero Data Loss** — Achieved continuous monitoring through robust redundancy architecture
- **Enhanced Efficiency** — Automated monitoring of water quality, temperature, and processing across 10,000+ points
- **Improved Sustainability** — Optimized resource management reducing waste and environmental impact
- **Remote Monitoring** — Enabled operators to manage operations and receive alerts from anywhere
- **Comprehensive Traceability** — Historical data logging for analysis, tracking, and regulatory compliance
- **Reduced Fish Mortality** — Real-time alerting on abnormal conditions prevented losses
- **Complete Visibility** — 20+ workstations with multi-monitor setups for facility-wide monitoring

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This case demonstrates plant-wide fish processing SCADA with multi-protocol integration and real-time water quality monitoring.

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