"With Ignition, Patti Engineering helped us reduce up-front costs and total cost of ownership. We were able to create everything in one environment and train our employees on a single system, rather than using multiple systems and packages."

-- PLANT MANAGER, WATER AND WASTEWATER PLANT

IGNITION EXPERIENCE HIGHLIGHTS

As a Gold Level integrator, Patti Engineering has achieved the highest level of training and certification available on the Ignition software.

We've put this experience to use in industries ranging from automotive to water and wastewater treatment. Our engineers take advantage of the SCADA platform's many capabilities for a variety of use cases from distributed HMIs for assembly lines, to plant floor OEE systems, to customized lot tracing systems, as well as edge devices that can tie plant floor equipment and data directly to databases.

BATTERY PACK MANUFACTURER

Perspective

Project Overview:
Remote Initial Development & Support
• Ignition to run SQL queries provided by owner with a press of a button to execute certain actions
• Ignition screens for both control and monitoring
  o The control screens to run handheld tools such as torque runners
  o Monitoring screens to observe statuses of inputs and outputs as directed by owner controls team
  o Measurements such as Torque, Resistance, Voltage, etc.
• A single gateway hosts both the HMI projects and the tag browser
• Owner provided process flow and sequences of operations along with certain template screens as a start point for development

SEMI TRAILER WALL PANELS

SQL Bridge Module, Siemens Driver Module

Project Overview:
Traceability Database
  o Ignition used to connect PLC to SQL Database
  o Recorded serial numbers, related material lots, process time stamps and part status
  o Records retained for 4900 products and 125 pallet records per day for 7 years

MAGNET RECYCLING & RE-MANUFACTURING

Perspective

Project Overview:
Replicated Existing HMI Functionality into Ignition for Remote Access
• Developed remote/local control methodology
• Designed and implemented a recipe system to replace the limited system on the HMIs.
  o Initially limited to 10 recipes due to hard drive capacity, Ignition was used to allow for virtually unlimited recipes and a historical log of changes
  o Tied to MySQL

EV BUS MANUFACTURER

Vision, Perspective

Project Overview:
Vision to Perspective Conversion
  o 50 vision template and scripts
  o Modified UDT's
  o Reused existing tags

CSIA CERTIFIED

Ignition Gold Certified 8.1

THE CITY OF FAIR OAKS RANCH, TEXAS

Perspective, Edge - IIoT, MQTT, OPC-UA

Project Overview:
Patti Engineering was selected by The City of Fair Oaks Ranch to replace the Wonderware (formerly Indusoft) SCADA software used to monitor and control the water/wastewater system. The purpose of the upgrade was to provide a system that could run on Windows 10 and to setup the infrastructure for easier improvements and additional feature sets. The system was running on panel PCs using Windows 7. Those specific Panel PCs were no longer available, and Windows 7 was no longer receiving security updates from Microsoft. The existing SCADA software was not capable of running on Windows 10.

The scope also included the modification and installation of a central firewall/VPN appliance to allow virtual server access to the remote plant network.

Utilized MQTT modules for communication between distributed plants back and city hall, reducing cellular bandwidth and data usage.

Ignition SCADA software development
• Replicate infrastructure and functionality of current system as closely as possible
• Offsite configuration of the 5 Plant PCs and the dashboard PC
  o 3,000 tags
  o 30 Screens
  o 400 alarms
  o 100+GB of data currently logged
• Remote testing prior to installation to reduce downtime/impact
• Provide and install 6 Panel PCs
• Provide and manage Ignition Licenses
  o Central Server
  o 5 Edge Panels
• Installation
• Debug
• Commissioning
• Service Contract

GLASS BOTTLE MANUFACTURER

Perspective

Project Overview:
SCADA System Conversion & Development – (WinCC to Ignition)
• Functional Specification Development
• Provide list of required Ignition module licenses
• Provide signal mapping spreadsheets
• Create Ignition/PLC tags (approximately 80,000)
• Develop up to 50 SCADA screens using Ignition Perspective
• Ignition configuration for sending data to Azure (approximately 5,000 tags)
• Ignition reporting development

• Ignition alarming development
• Ignition Cloud instance configuration & testing
• Ignition API development
• Ignition testing
  o Perspective screens tested via simulated PLC project to confirm tag mapping and functionality
  o Ignition -> Azure testing of connectivity and proper topic configuration
  o Ignition API testing
• Production Support

MAN MADE DIAMOND MANUFACTURER

Perspective

Project Overview:
SCADA Development & Connectivity
• Gateway/Server setup
  o Installation and setup of the Ignition Gateway software on a server
    ▪ Install Ignition and all purchased modules
    ▪ Set up user access
    ▪ Configure connection to MySQL database
  o Configure VPN access to the server
  o Installation and setup of MySQL database
• Device Connections
  o Setup Connection within an Ignition project to communicate with high-pressure high-temperature system
    • Controlled by a Siemens S7-1200 PLC
  o Configure tags described in "SCADA Scope of Work.xlsx"
  o Configure logging of all tags to the MySQL database
  o Configure alarms and associated email alerts
• Screen Development
  o Develop screens with the following functionality
  o Growth Run Entry

    ▪ UI for creating growth runs
      • Enter data for run
  o Preprocessing
    ▪ Machine Number
    ▪ Recipe
    ▪ Diamond Serial Number
    ▪ Customer Name
    ▪ Size
    ▪ Color
  o Post Processing
    ▪ Diamond Weight.
    ▪ Dimensions
    ▪ Inspection Status
  o Growth Run Monitor - UI for viewing status of press
  o Recipes - UI for recipes
  o Alarms
    ▪ Current and Historical alarm table
      • VPN Connection to Server
  o Provide a VPN appliance
  o Configure a VPN client on one laptop for remote access to the server