

DELIVERING MANUFACTURING INTELLIGENCE

Industrial IoT &
Sensorization

01

Industrial AI &
Machine Learning

02

Digital Twins &
Process Optimization

03



AT A GLANCE

17+

Years of Establishment

24 x 7

Global Delivery Model

99.9%

SLA Adherence

.ZILEN

10+

Active R&D Labs

**WORLD BUSINESS
OUTLOOK**

**TITAN
AWARDS**

**WORLD BUSINESS
ACHIEVERS**

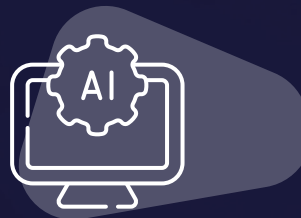


SERVICES



Industrial IoT &
Sensorization

1



Agentic Systems &
Automated Action

2



IoT Connectivity &
Data Flow Engineering

3



Real-Time Data
Processing &
Intelligence

4

Elevate Your
Business with
Our Services

OUR IOT ENGINEERING EXCELLENCE

01



Multi-Protocol
IIoT Gateway

02



Cloud-Connected
Dishwashers

03



IoT Remote
Monitoring

04



Drone Inspection
Software

05



Smart Lighting
Orchestration

06



Generative AI-Driven
Voice Intelligence

07



Industrial Intelligence
Platform

08



Sustainable Agriculture
with IoT

09



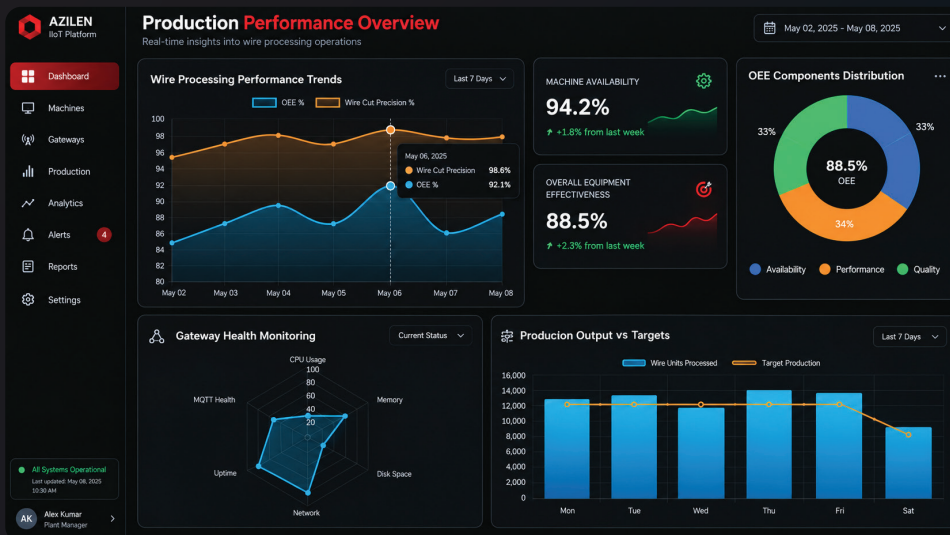
Secure Edge
AI Platform

10



Energy Intelligence
Platform

Multi-Protocol IIoT Gateway Ecosystem for Manufacturing Telemetry Data Analytics & Predictive Maintenance



LOCATION
USA



DOMAIN
Wire Processing



INDUSTRY
Manufacturing



01 CHALLENGES

- Supporting diverse machine protocols and communication standards
- Telemetry data ingestion and real-time monitoring
- Low-latency communication between machines and cloud systems
- Real-time machine data processing and precise analysis
- Scalable architecture to handle increasing machine data volumes



02 HOW WE HELPED?

We developed a comprehensive IIoT gateway solution that bridges the gap between manufacturing equipment and cloud infrastructure, enabling real-time monitoring, configuration management, and high-volume machine data analytics.



03 KEY HIGHLIGHTS

Azure IoT Enabled
Machine Data
Transmission

Real-time Machine
Telemetry Data
Processing

Multi-protocols
Support - HTTPS,
MQTT, OPCUA

Monitoring and
Predictive
Maintenance

Admin Interface
for Machine
Configuration

Secure & Scalable
Azure Cloud
Operations

Cloud-Connected Dishwashers with Predictive Maintenance to Reinvent Commercial Kitchens



01 CHALLENGES

- Commercial kitchens face unplanned dishwasher downtime
- Legacy dishwashers offer limited real-time visibility
- Service teams depend heavily on on-site inspections
- Inconsistent monitoring of wash parameters
- Lack of usage and consumption intelligence



02 HOW WE HELPED?

Collaborated with a USA-based commercial dishwashing and sanitation system leading manufacturer to retrofit the legacy dishwashers & upgrade into intelligent, cloud-connected appliances via ESP 32 - System on chip SmartBox, enabling remote diagnostics, cycle analytics, & predictive maintenance.



03 KEY HIGHLIGHTS

Legacy-to-IoT
Dishwasher
Modernization

ESP32-Based
Multi-Sensor
Data Capture

Azure-Connected
Predictive
Maintenance Layer

BLE-Enabled
Mobile Service
Diagnostics

Cloud KPI
Monitoring
Dashboard

MLOps-Driven
Failure Prediction
Alerts



LOCATION
USA



DOMAIN
Industrial IoT



INDUSTRY
Commercial
Kitchen Equipment
Industry

IoT Remote Monitoring Solution to Enable Workforce Safety Through Wearable Hi-Tech



LOCATION
Europe



DOMAIN
Wearable



INDUSTRY
Health Tech



01 CHALLENGES

- Algorithmic accuracy in health monitoring
- Compliance with occupational health standards
- Data security and privacy in remote monitoring
- Latency in data transmission & processing
- Multi-platform: Windows, macOS, Android, iOS
- Personalization of health monitoring thresholds



02 HOW WE HELPED?

We have implemented a remote monitoring software for health & safety monitoring by synchronizing sensor data via USB/BLE with live data monitoring, to mitigate health risks & tech debt clearance ensuring clinical-grade biometric insights.



03 KEY HIGHLIGHTS

Heat Stress
Protection
with Monitoring

Real-Time
Tracking of
Health Vitals

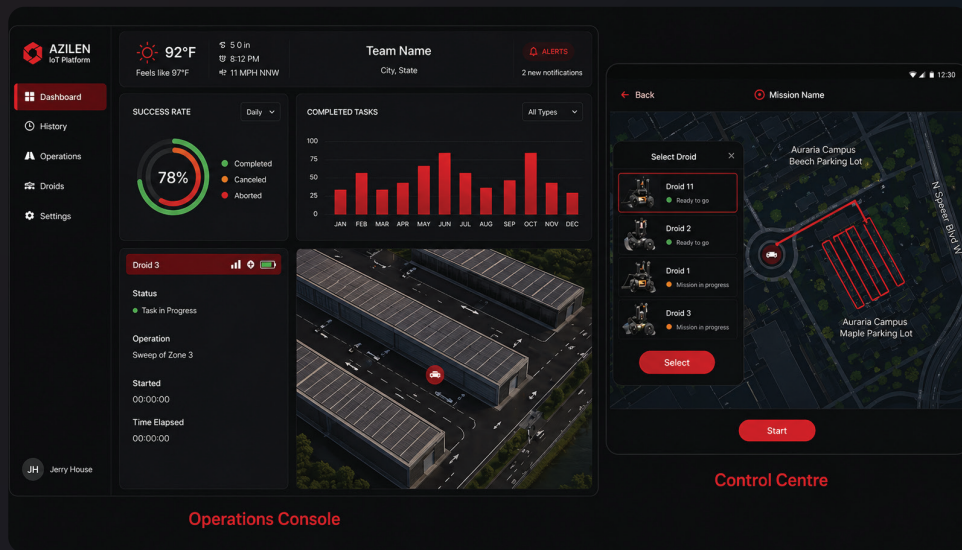
Hydration Prompts
with Auto
Reminder

Compliance with
ACGIH heat
Stress Guidelines

Data Analytics
and Customized
Safety Alerts

Devices
Configurations
& Provisioning

Engineering Product Lifecycle for Drone Inspection Software



01 CHALLENGES

- High-fidelity data capture & processing
- Real-time surveillance of airport runways
- Analyze situational & climatic impact of On-field missions
- Detailed technical evaluation of 3 drone SDKs
- Hardware programming & integrations with limited documentation



02 HOW WE HELPED?

Azilen engaged with the client for blue-printing the concept from idea to implementation, thus envisioned an automated drone inspection software. A robust platform was engineered with a comprehensive technical due-diligence on drone systems, SDKs, high-performance architectures and effective control mechanisms.



03 KEY HIGHLIGHTS

Adaptable to
Real-World
Situations

Quickly
Address Risks

Drone Visualization
and Simulation

Real Time
Tracking and
Analytics

Streamline
Reporting

Scalable
Technology for
Airworthiness



LOCATION
USA

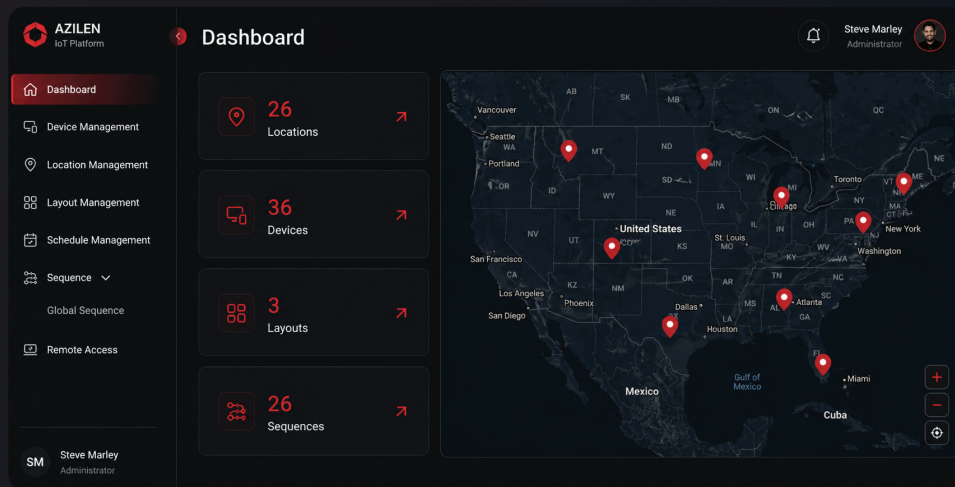


DOMAIN
Safety



INDUSTRY
Aviation

Tech Modernization for a Next-Gen Cloud Platform for Smart Lighting Orchestration



01 CHALLENGES

- Maintaining accurate and consistent data across all systems
- Ensuring high-end peak performance under heavy load
- Seamless tech migration with legacy hardware and backend compatibility
- Mitigated operational challenges and technical limitations from the previous vendor



02 HOW WE HELPED?

Azilen conducted a thorough technology audit, identified and mitigated key issues of an existing system, and successfully migrated the client's existing software from Angular to React, enhancing performance, scalability, and laying a foundation for future innovations.



03 KEY HIGHLIGHTS

Remote Mgmt.
& Monitoring

Complying with
IoT SIM Network

Multi DMX
Devices
Connectivity

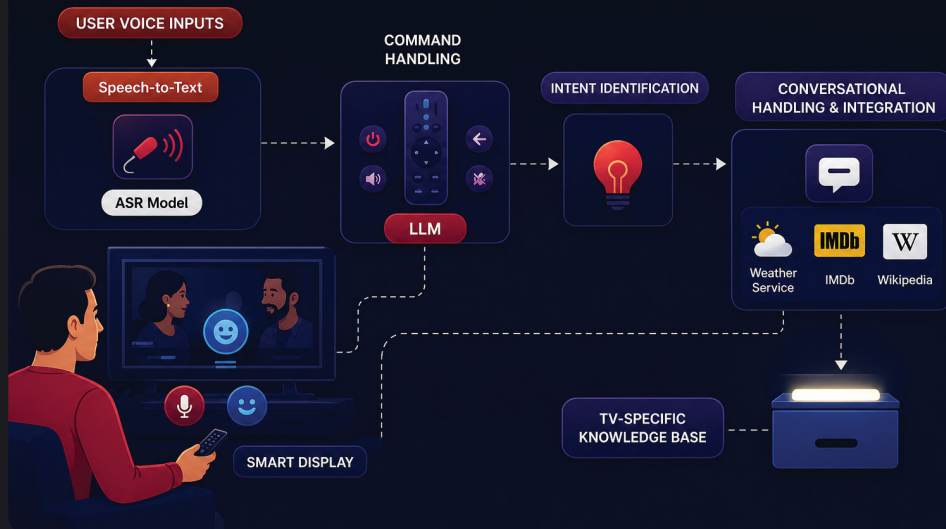
Reusable
Schedules

Data
Integrity

Multi-Channel
Access Control

Smart Displays with Generative AI-Driven Voice Intelligence

GenAI SMART TV CONTROL SOLUTION



LOCATION
Netherlands



DOMAIN
Electronics



INDUSTRY
Manufacturing



01 CHALLENGES

- LLM & ASR model evaluation & selection with enterprise-grade strategy
- Local language support for the LATAM region customer base
- Real-time command execution with sub-2-second latency
- Cost-aware training and fine-tuning of LLM & ASR models
- Improving ASR model accuracy by reducing word error



02 HOW WE HELPED?

Azilen engaged with the client to blueprint the envisioned concept from idea to execution with a voice AI solution that assists smart display users as a virtual smart assistant with a TV-specific knowledge base and language-specific adaptation for Brazilian Portuguese, Argentinian Spanish, and Mexican Spanish.



03 KEY HIGHLIGHTS

Headless Voice
Intelligence Engine

LLM-based Voice
Command
Intent Recognition

OpenAI Whisper
Model for
Speech Recognition

TV-specific
Knowledge Base
for Virtual Assistant

3rd Party Integrations
– Weather, News,
IMDb & Wikipedia

LLM & ASR Model
Hosting with
AWS Bedrock

Industrial Intelligence Platform for Centralized Monitoring, Energy Visibility & Operational Governance



LOCATION
North America



DOMAIN
Energy Efficiency, Refrigeration & Industrial Process Systems



INDUSTRY
Manufacturing & Industrial Technology



01 CHALLENGES

- Fragmented telemetry across refrigeration systems, controllers, and energy meters
- Inconsistent sensor mapping and data normalization across sites
- Delayed fault detection due to manual monitoring and limited alerting
- Low visibility into energy savings and operational performance trends
- Difficulty scaling a centralized architecture across multiple distributed locations



02 HOW WE HELPED?

Azilen delivered a centralized industrial monitoring solution for improved visibility, performance tracking, and operational oversight. Connected distributed data streams into a unified digital layer. Enabled better decision support, faster response, and scalable operational governance. Established a foundation for future intelligence-led optimization.



03 KEY HIGHLIGHTS

Centralized Field Operations Visibility

Enterprise Energy Performance Transparency

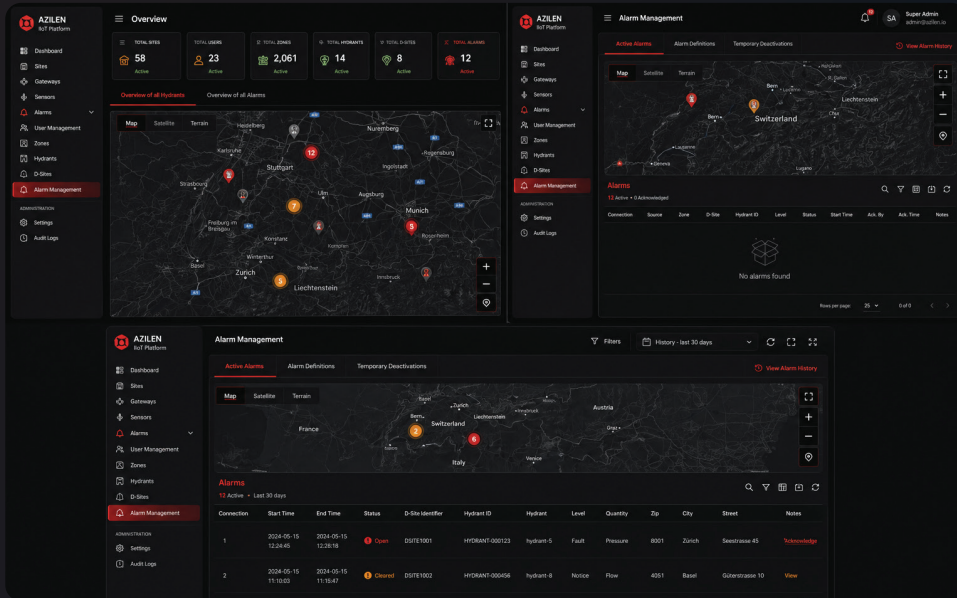
Cross-Site Asset Intelligence

Real-Time Incident Response

Predictive Maintenance Decisioning

Connected Industrial Data Infrastructure

Sustainable Agriculture with IoT-Enabled Fire Prevention, Water, and Energy Metering



LOCATION
USA



DOMAIN
Agriculture
Technology
(Agritech)



INDUSTRY
Agricultural



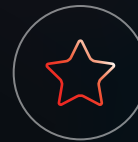
01 CHALLENGES

- The client faced a 3-Month delay with their previous vendor
- The existing system had subpar code quality and broken work flows
- Transitioning from the previous vendor involved understanding and improving the system within a limited timeframe
- Coordinating with multiple hardware manufacturers for seamless IoT device connectivity
- The solution needed to support white-labelling and expansion into new domains
- Handling large volumes of data, detecting anomalies, and ensuring data accuracy



02 HOW WE HELPED?

Azilen stepped in to rescue a project that was significantly delayed and underperforming due to a previous vendor. By understanding the client's pain points and leveraging its expertise in IoT and agricultural solutions, Azilen delivered a high-quality solution that met the client's needs and exceeded their expectations.



03 KEY HIGHLIGHTS

Scalable IoT
Platform

Proactive
Alerts

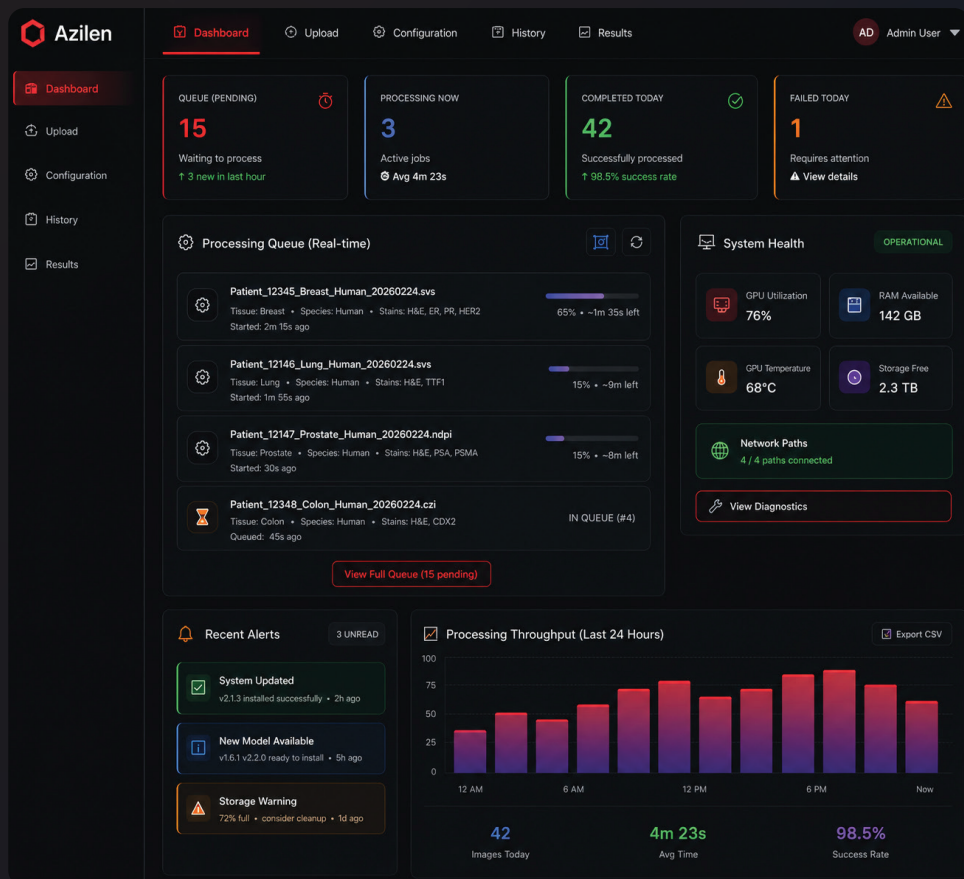
Data-Driven
Insights

Data
Governance

Multi-Lingual
Mobile Application

Seamless
Device Integration

Secure Edge AI Platform for Scalable Digital Pathology Transformation



01 CHALLENGES

- Latency, bandwidth cost, and operational bottlenecks due to large whole slide image transfers
- Increased compliance, privacy, and data sovereignty concerns
- Limited offline capability restricted adoption across various lab environments
- Required stronger governance for updates, licensing, monitoring, and device lifecycle control



02 HOW WE HELPED?

Partnered with client to architect a secure on-premises edge AI platform that brings virtual staining directly into laboratory environments. The solution enables local WSI ingestion, GPU-accelerated AI processing, result generation, and operational monitoring on NVIDIA DGX Spark, while leveraging a cloud-based control fabric for fleet management, OTA updates, licensing, and centralized governance without moving sensitive image data outside the lab network.



03 KEY HIGHLIGHTS

Cloud-to-Edge
Digital Pathology
Transformation

On-Premises
AI Virtual
Staining Platform

NVIDIA DGX
Spark-Based
GPU Processing

Secure Lab
Portal with
RBAC Governance

Scalable Edge
Fleet Management
Framework

OTA Updates,
Licensing &
Device Monitoring



LOCATION
USA



DOMAIN
Digital Pathology
/ Edge AI



INDUSTRY
Healthcare

Engineering an Enterprise-Grade Energy Intelligence Platform for Industrial IoT



01 CHALLENGES

- Telemetry fragmented across multiple gateways & clouds
- Vendor lock-in with disconnected & limited interoperability
- No centralized cloud system with lack of operational visibility
- Limited ability to track energy savings across customers & sites
- Existing architecture strained by increased sampling frequency
- Reactive maintenance with limited cross-site intelligence



02 HOW WE HELPED?

Azilen engineered a vendor-agnostic Industrial Energy Intelligence Platform that became the organization's Digital nervous system for connected industrial operations.



03 KEY HIGHLIGHTS

AWS-Native
Industrial IoT
Intelligence Platform

Multi-Vendor-
Agnostic Data
Ingestion Pipelines

Real-Time Telemetry
Processing at
3-Minute Intervals

Predictive-Ready
Intelligence
Architecture Design

25,000+ Connected
Assets Unified
with Central Visibility

60+ Industrial
Parameters
Standardized with KPIs



LOCATION
USA



DOMAIN
Energy
Intelligence

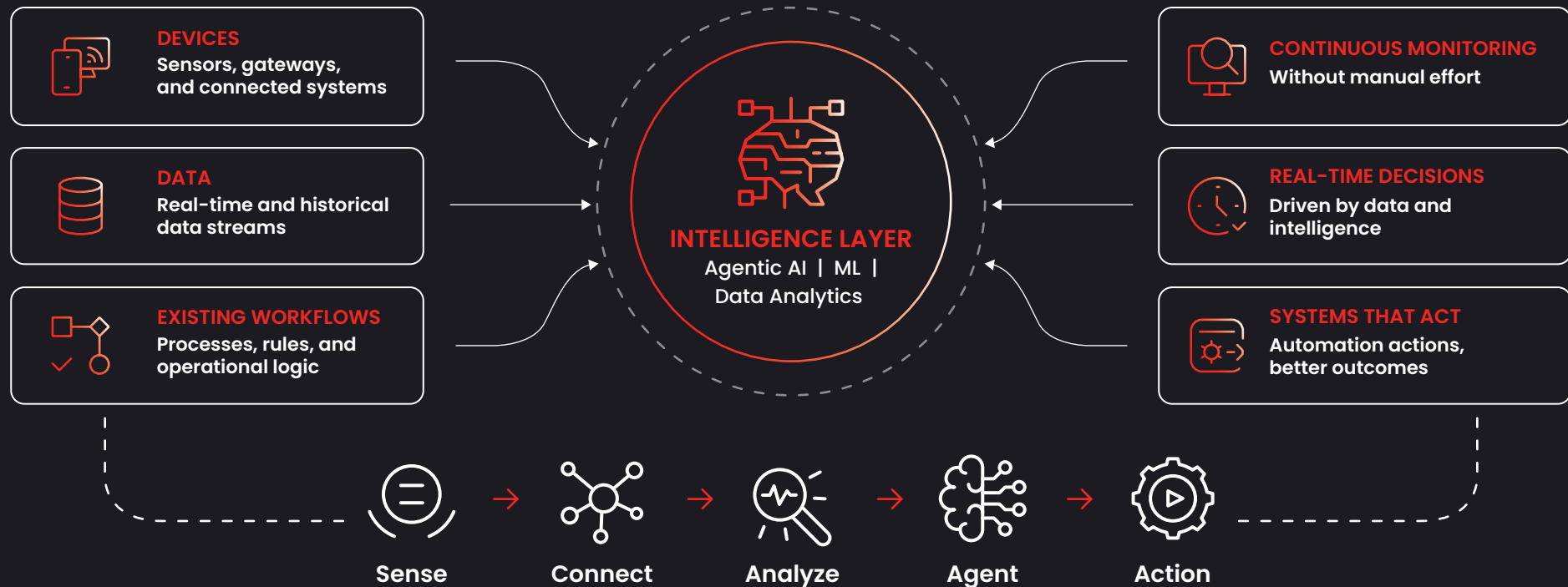


INDUSTRY
Manufacturing

TECH STACK ECOSYSTEM FOR IOT INTELLIGENCE

AI & Edge Intelligence	 PyTorch	 ONNX	 TensorFlow Lite	 NVIDIA	OpenVINO		
Digital Twin & Simulation	 SIMULINK	 unity	Agentic AI Frameworks		 LangChain	 crewai	 Autogen
Edge-to-Cloud & Data Pipelines	 kafka	 Azure IoT Hub	 AWS IoT	 REST API			
Sensor & Communication Protocols	 BLE	 MQTT	 OPC UA	 Modbus	 CAN	 zigbee	 LoRaWAN
Cloud & DevOps		 HashiCorp Terraform	 docker	BI & Visualization		 tableau	 Grafana Labs
Applications & Interfaces		 node.js	 Flutter				
Data Engineering	 dbt	 Apache Spark	 Apache Airflow	 snowflake	 databricks	 Azure Data Lake	

BUILD THE INTELLIGENCE LAYER ON YOUR EXISTING DEVICES, DATA & WORKFLOWS



For more information, Contact info@azilen.com

AZILEN

Azilen Technologies is an enterprise AI development company building the intelligence layer for modern, sensor-driven systems. We combine IoT, data, and AI to create systems that go beyond connectivity and operate with purpose and precision. We help organizations shift from observation to action, where systems handle continuous monitoring and routine decisions, and humans focus on control and outcomes.



Explore our all

Case Studies