4E CONSULTING GROUP

ENGINEER — EDGE & IIOT

IIoT Implementation

Your operation already generates the data, but most of it is lost before it reaches anywhere it can be analyzed. We connect the plant floor to the rest of the business — Ignition, MQTT and a unified namespace at the edge, correlated into meaningful events and streamed into your lakehouse. Delivered near-shore by senior architects across the US and Latin America.

The plant floor answers one line at a time.

Every machine on the floor is already producing data. It lands in a historian, drives an HMI, and stops there — trapped in the line that produced it, in a format nothing downstream can read. So the questions that matter across an operation go unanswered, and the people who could act on them are reading yesterday's spreadsheet. Connecting that data is an architecture problem, not a dashboard problem.

What we implement

Ignition / Inductive Automation

SCADA and IIoT platform work on Ignition — gateways, Perspective HMI, tag historians and edge deployments, built by certified architects.

MQTT, Sparkplug B & Unified Namespace

A single, self-describing source of plant truth — broker-based messaging so every system reads the same live state.

4E Edge Correlation Engine

Our own edge capability: raw sensor streams correlated into meaningful events where they are produced, so what crosses the network is signal, not noise.

Edge-to-Lakehouse Telemetry

Plant telemetry streamed continuously into a governed lakehouse — where OEE, predictive maintenance and cross-site analytics become possible.

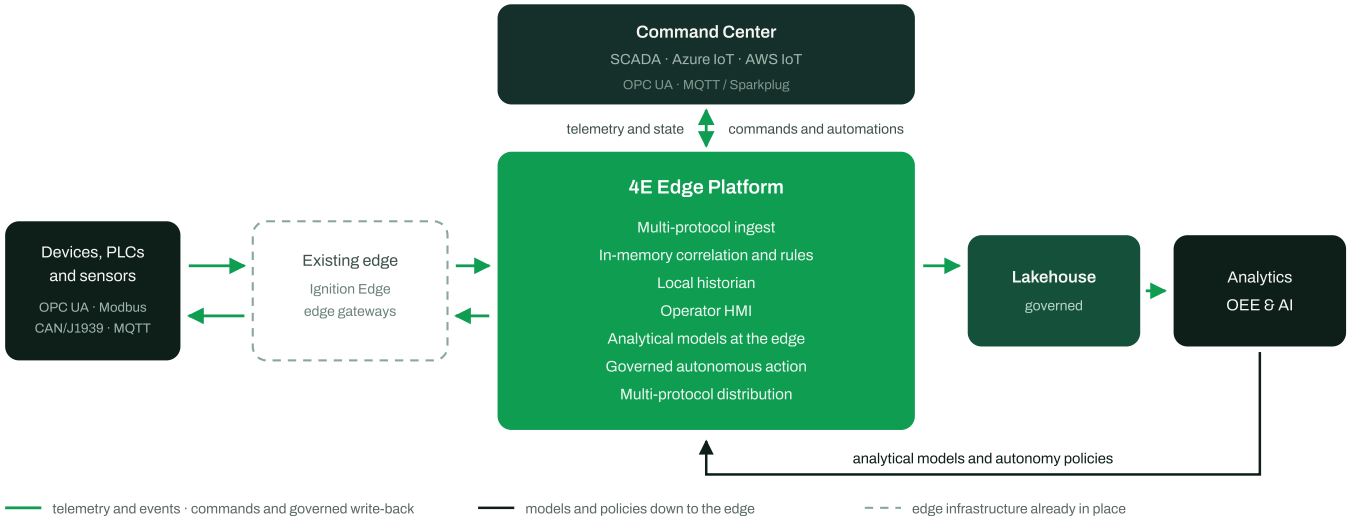
OPC UA & IEC 61131-3 Controls

Down to the controller: OPC UA connectivity, PLC programming to IEC 61131-3, and the line and device integration that makes the rest of it possible.

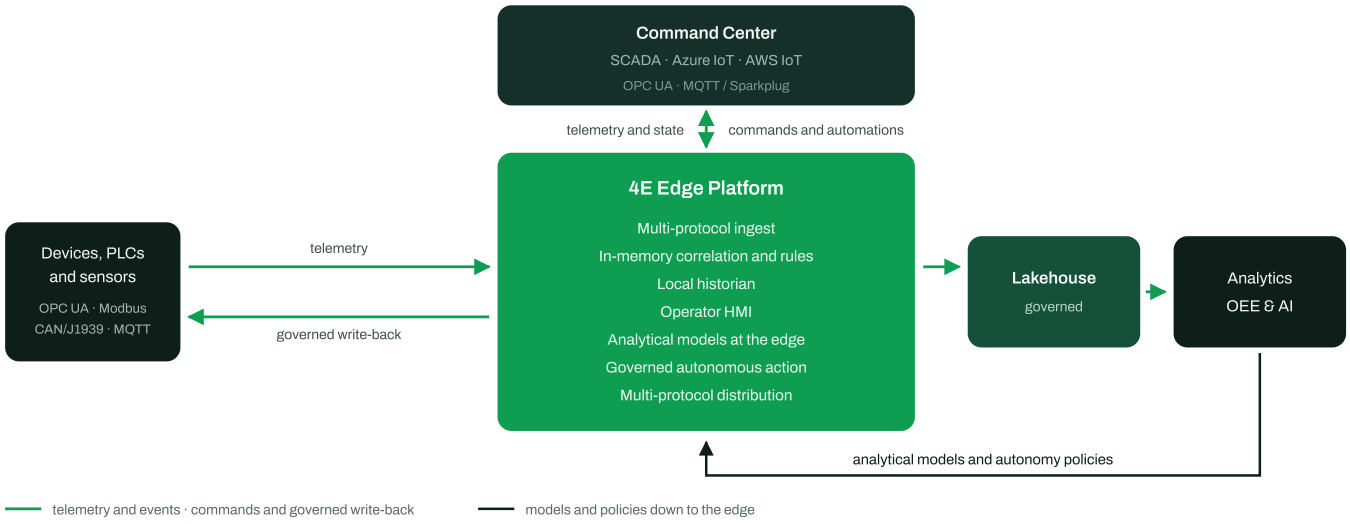
REFERENCE ARCHITECTURE

Two starting points, one platform.

If you already have an edge in place, it stays and we widen what it can do. If you don't, the platform is the whole edge. Either way, the models trained on your lakehouse come back down and run where the work happens.



Scenario A · an edge is already in place. It keeps running and the platform sits alongside it over OPC UA or MQTT, adding in-memory correlation, a historian with no fixed ceiling, local analytical models and cloud distribution.



Scenario B · no prior edge. No intermediate gateway or edge SCADA: the platform talks straight to the controllers, correlates, historizes, serves the operator, publishes to the cloud and writes back to the equipment over a governed, audited path.

BUILT BY 4E

The 4E Proprietary Edge Solution.

A plant floor produces far more raw signal than anyone can use. Shipping all of it upstream is expensive, slow, and still leaves someone to work out what it meant. Our event correlation engine does that work where the data is produced: it turns raw sensor streams into meaningful events, so what reaches your network and your lakehouse is already the thing you wanted to know. Around that core, the platform covers the rest of the edge — multi-protocol ingest down to the controller, a local historian with retention you set, an operator HMI and cloud distribution — and where an edge is already installed, it works alongside it rather than asking you to rip anything out. The path runs back the other way too: analytical models trained on your lakehouse execute at the edge, and the platform can act on the equipment over a governed route, with permissives evaluated against the real state of the plant and an audit record on every write. The platform is our own technology; the solution is that platform plus the senior architects who design your edge around it, and the team that supports both long after commissioning.

HOW WE DELIVER

From plant floor to operating platform.

Understand

We walk the floor and the systems already there — controllers, historians, networks — before proposing anything.

Architect

Senior architects design the edge and integration architecture, from device connectivity to the lakehouse.

Deliver

We implement, integrate and commission — on real equipment, with the plant still running.

Operate

Managed services keep the edge estate healthy, monitored and supported after commissioning.

WHAT YOU GET

Deliverables

- Edge and integration architecture, device to lakehouse
- Ignition / MQTT implementation and unified namespace design
- 4E edge correlation deployed and tuned to your operation
- Streaming telemetry landing in a governed lakehouse
- Commissioning support, or an ongoing managed service

TRACK RECORD

Fortune 100 operators. Delivered for Fortune 100 oil & gas operators and enterprise clients across Latin America and the United States.

20+ years. Two decades architecting, building and operating enterprise and industrial platforms.

Certified in-house. Inductive Automation, AWS, Azure, Databricks and Snowflake certifications held by our own architects.