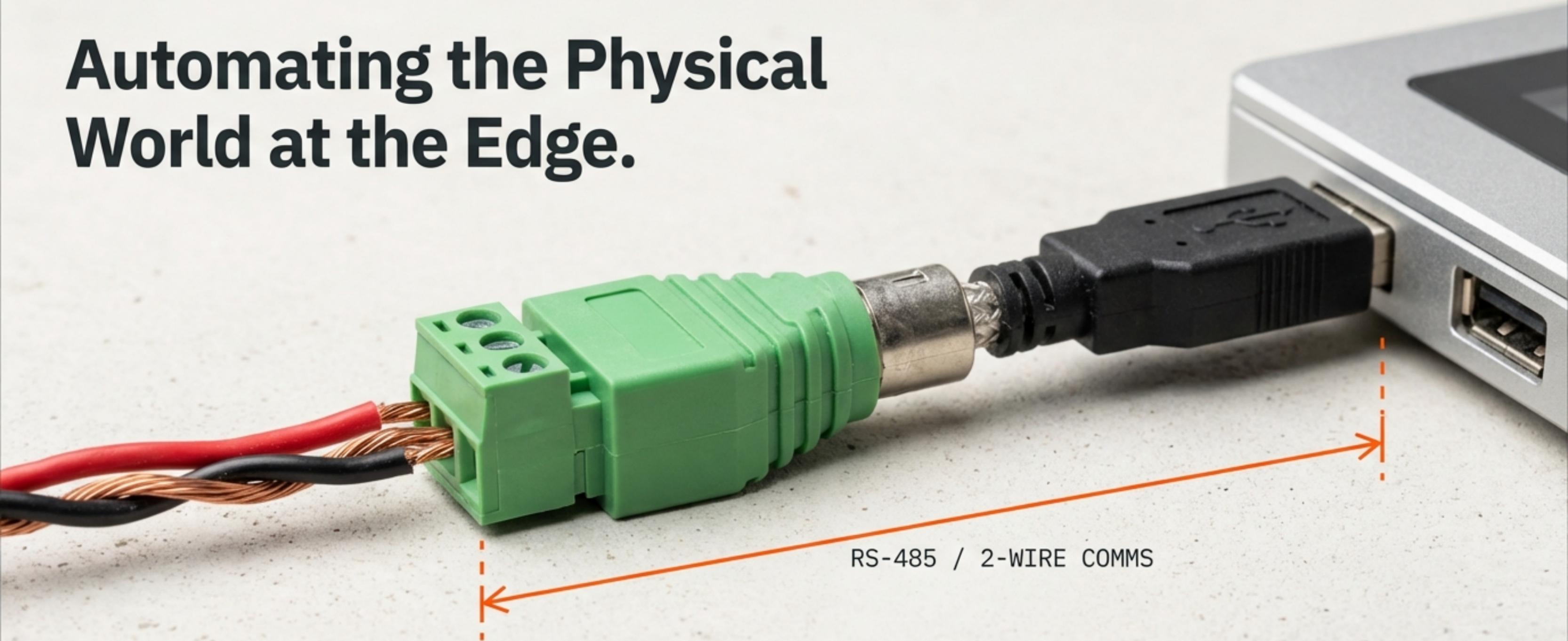


The Industrial Foreman

Automating the Physical
World at the Edge.



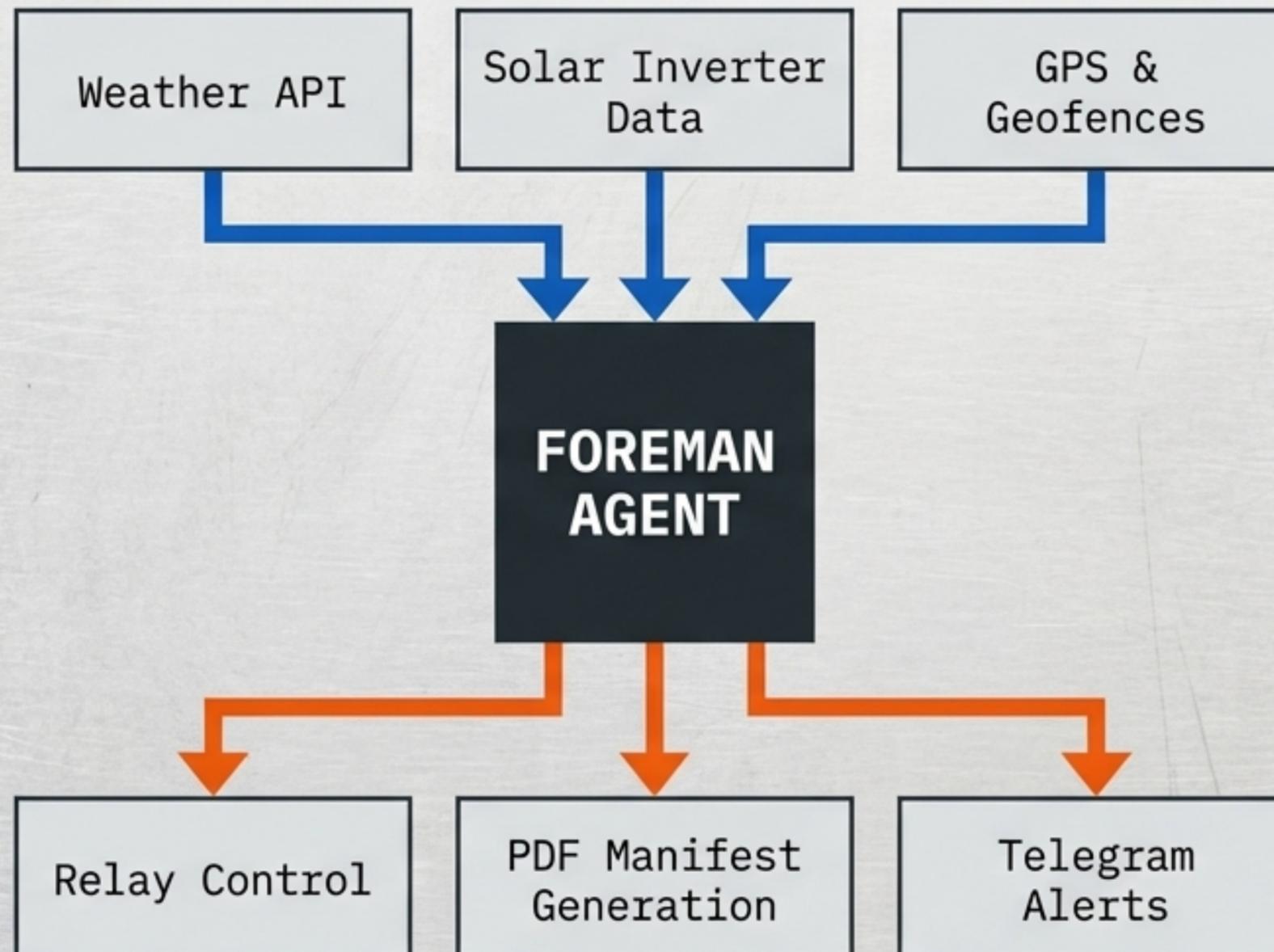
Energy Wasted is Money Burned.

In isolated setups, full batteries mean wasted solar potential. In logistics, crossing a border without pre-filed customs paperwork means lost hours. The edge gap costs money.



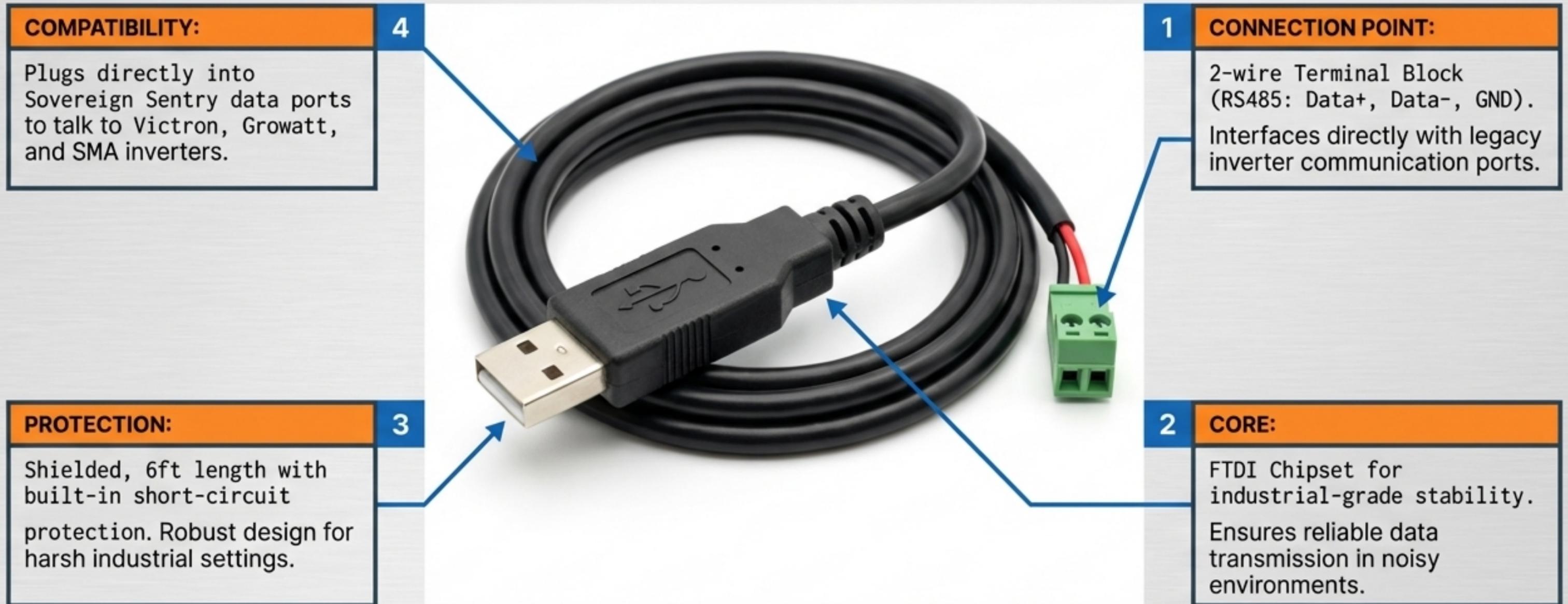
Software Logic Meets Heavy Machinery.

The Industrial Foreman is a specialized OpenClaw agent designed to live on the edge, not in the cloud. It monitors sensors, inverters, and GPS coordinates to make real-time decisions faster than human operators.



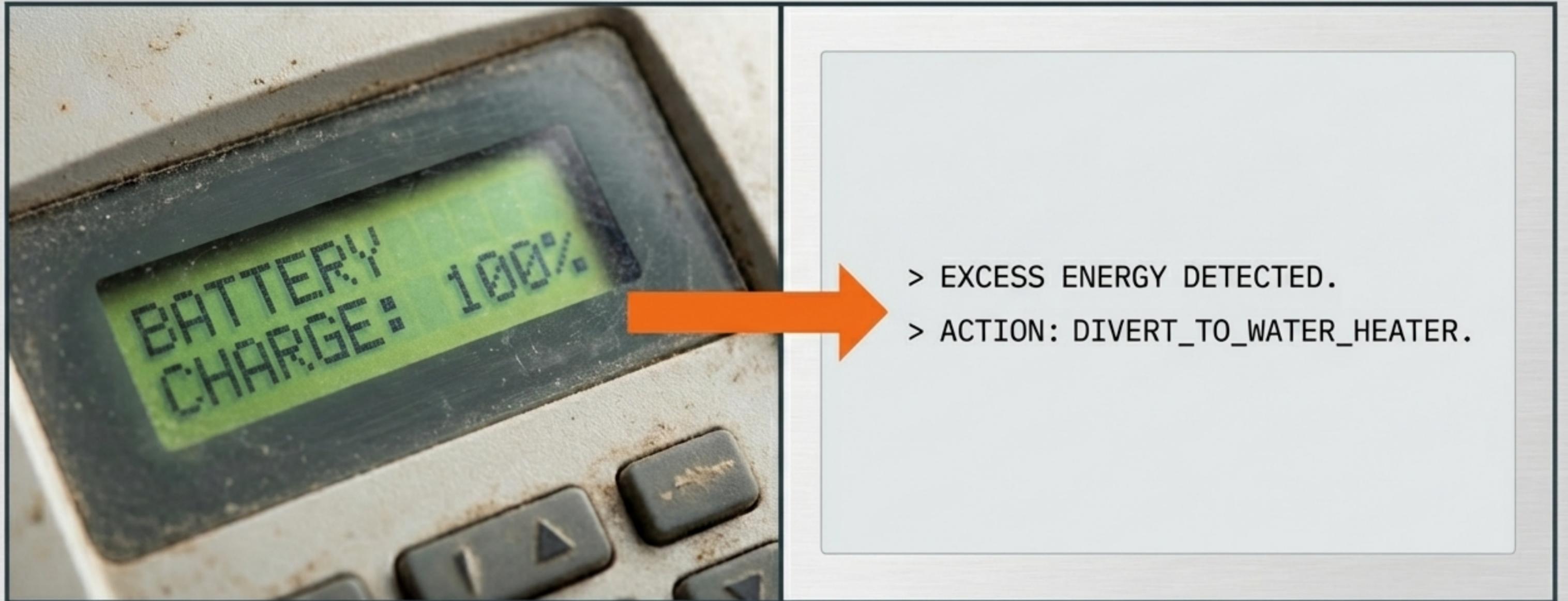
The Physical Bridge to Legacy Systems

This specialized industrial cable enables direct communication between modern edge devices and legacy inverter systems, ensuring seamless data integration and control.



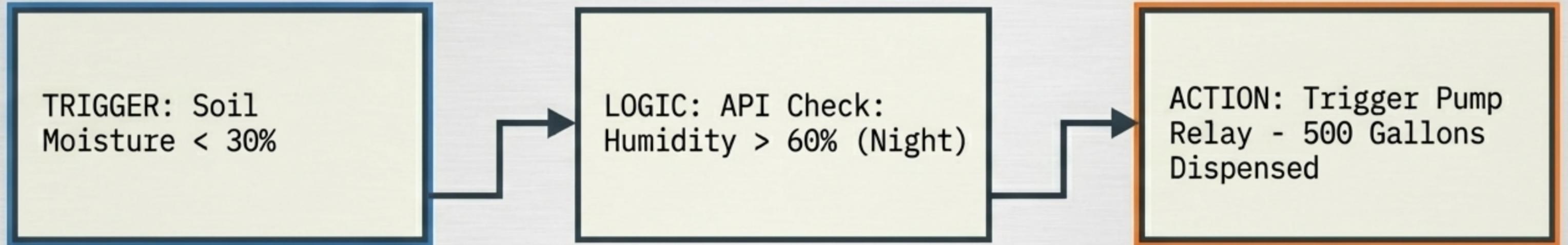
Mode A: The Grid Balancer.

Designed for the Sovereign Sentry. The agent monitors battery state-of-charge against live local weather APIs to perfectly utilize 100% of generated power.

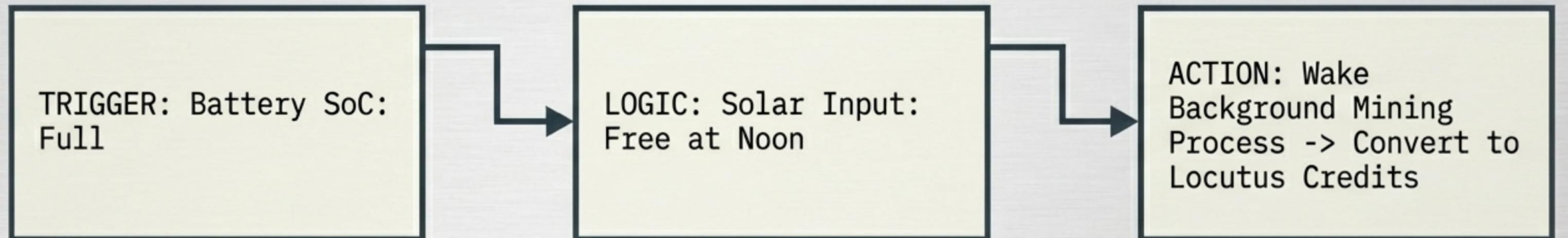


Zero-Waste Energy Logic Pathways.

THE SMART FARM IRRIGATION



THE DUMP LOAD MINER



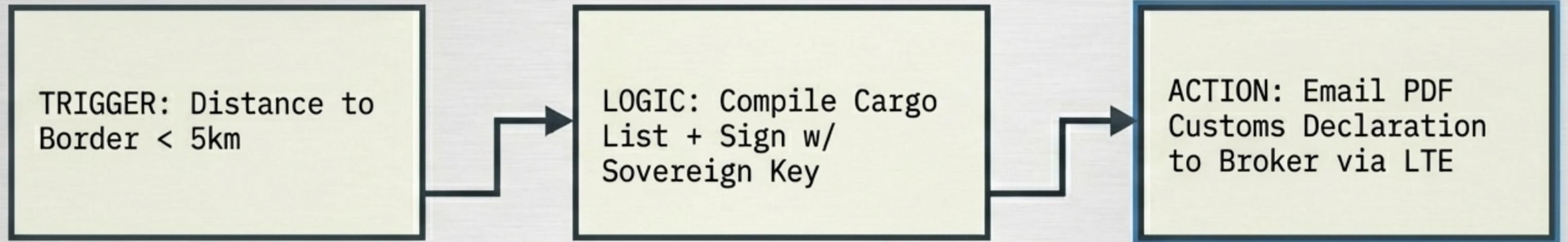
Mode B: The Supply Chain Diplomat.

Designed for the Nomad Fleet Kit. The agent monitors the continuous GPS stream against a pre-defined Geofence database to automate critical supply chain administration.

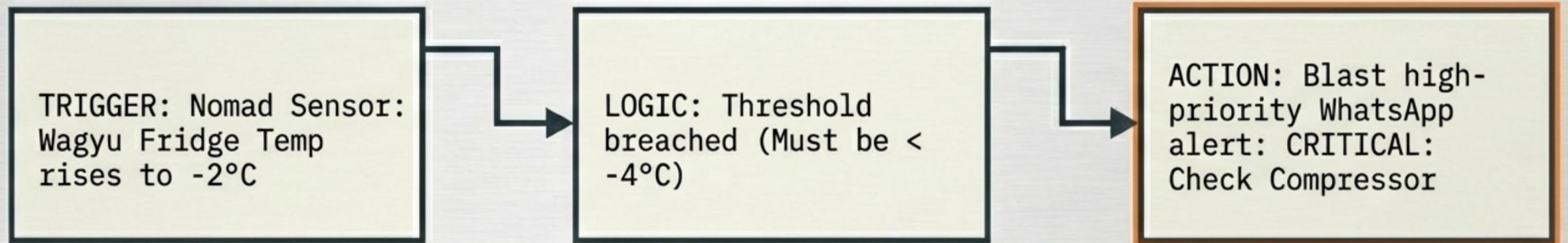


Zero-Wait Supply Chain Coordination.

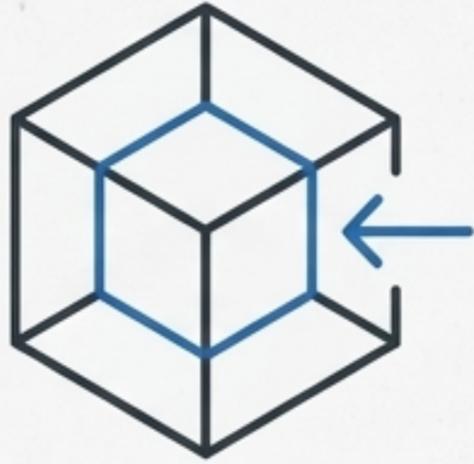
AUTOMATED CUSTOMS



COLD CHAIN AUDIT

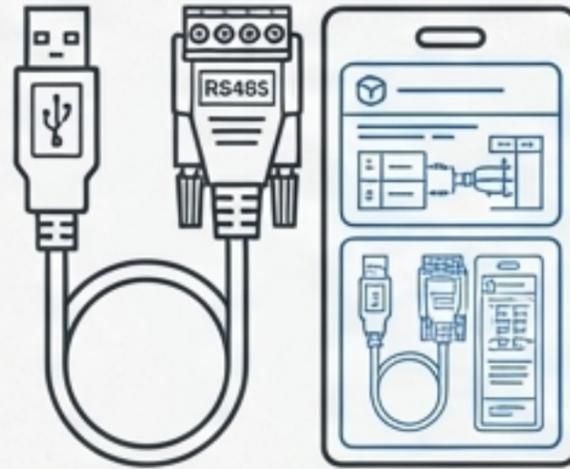


Anatomy of the System



1. Digital License

- OpenClaw Foreman Image
- `dereticular/openclaw-industrial:latest`
- **Cryptographic Key** for API authorization



2. Physical Hardware

- 1x USB-to-RS485 Adapter Cable
- Heavy-duty laminated Quick Start Card
- Pinout diagram included

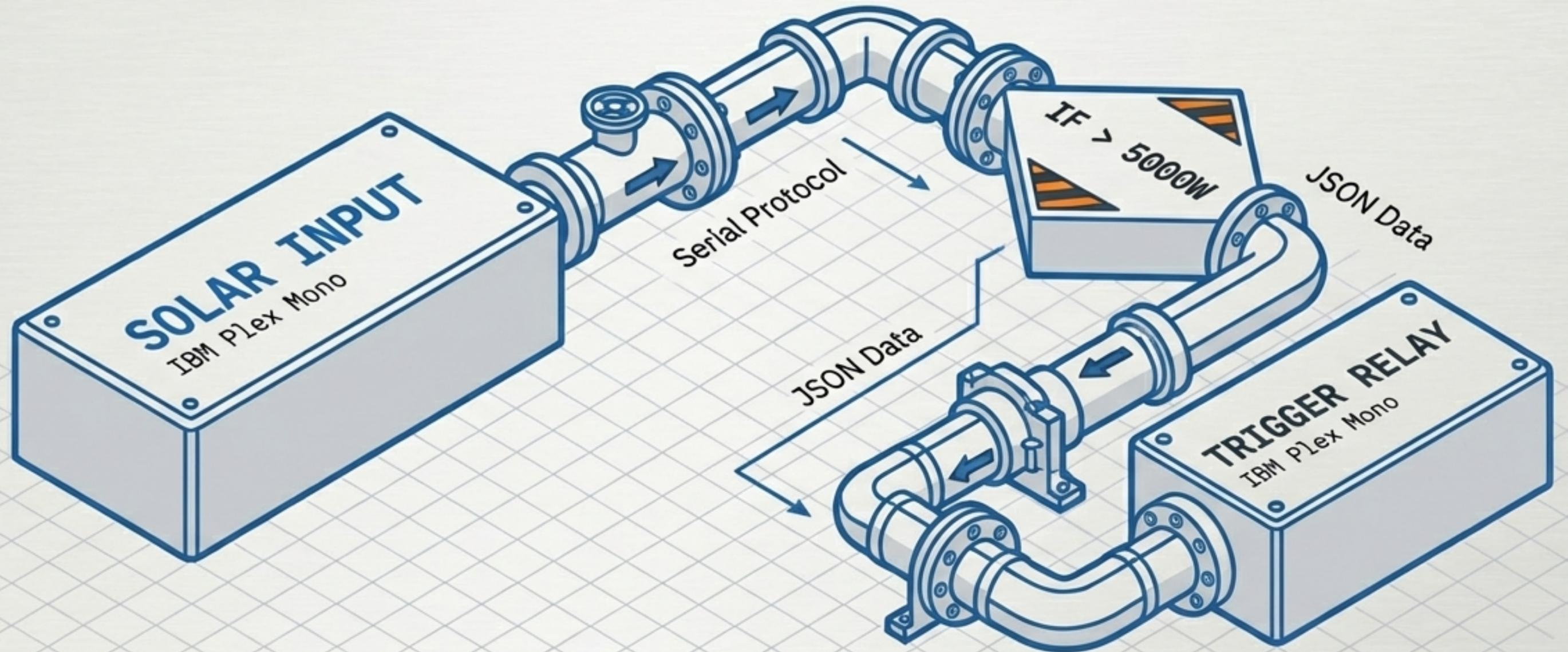


3. The Knowledge Base

- `JSON` definitions for industrial registers
- `Victron Hex, SunSpec Modbus` support
- Pre-built `Node-RED` template flows

Low-Code Control via Node-RED.

The underlying logic engine operates via a pre-configured Node-RED container + Python environment. It translates raw serial protocols into human-readable JSON, allowing users to safely tweak machinery logic without recompiling code.



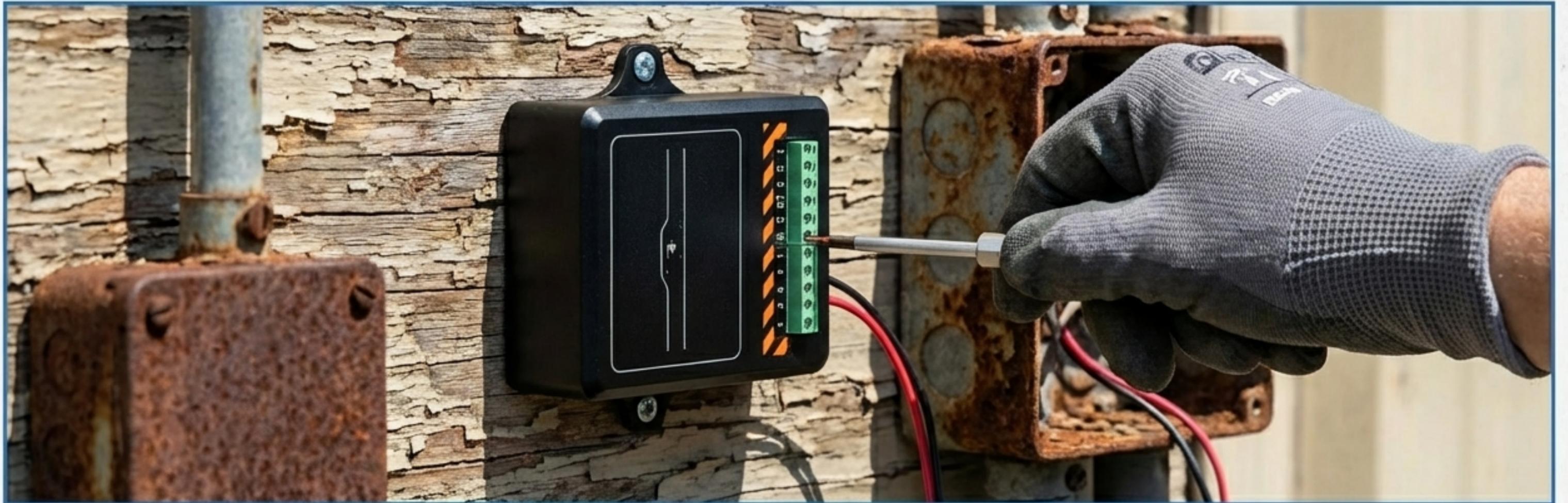
Hybrid Fulfillment Workflow.



Seamless Auto-Discovery & Retrofitting.

Upon running the install script, the agent scans `/dev/ttyUSB0` to automatically detect connected hardware and loads the exact protocol driver required.

 **AGENT SCAN:** `/dev/ttyUSB0` | **PROTOCOL DETECTED:** MODBUS RTU | **DRIVER LOAD:** `sov-sentry-modbus`



Mission-Critical Safety Interlocks.

WIRING PROTECTION

Built-in short-circuit protection and a software Polarity Check diagnostic tool prevent damage if Data+ and Data- are accidentally swapped.

HARDWARE HYSTERESIS

To prevent logic errors from creating infinite loops (rapidly toggling relays and burning out pumps), the agent enforces a mandatory minimum 5-minute state change delay.

PROTOCOL RESILIENCE

Centralized register maps ensure firmware updates from inverter manufacturers do not break the Modbus connection.

Technical Specifications.

	
HARDWARE REQ	Sovereign Sentry (Pi 5 or N100/i3 architecture) OR Nomad Fleet Kit. Consumes <5% CPU.
PHYSICAL INTERFACE	USB 2.0/3.0 Port.
PROTOCOL SUPPORT	Modbus RTU (RS485), CAN Bus (via adapter), NMEA 0183 (GPS), MQTT, HTTP Webhooks.
INTEGRATIONS	Victron VRM, OpenWeatherMap API, Traccar, Telegram.
	

True Edge Autonomy.

Isolation, independence, and absolute utilization.
Connect your legacy machinery to modern logic,
and automate the physical world.

