VALO Sensor Edge AI

Understand what your equipment is telling you.

Local sensor intelligence for cooling systems, machinery and technical infrastructure. A retrofit application of VALO Edge.

OBSERVE LOCALLY. IDENTIFY DEVIATIONS. SUPPORT ACTION.

From equipment signals to operational insight

The proposed solution combines sensor data, local processing and advisory analysis to help operators investigate abnormal behaviour. Start with a narrow monitoring use case on existing equipment, then expand only where site measurements demonstrate value.

Sense

Temperature, vibration, current and equipment status. Select signals around the actual failure mode.

Interpret

Normalize measurements, check quality and detect deviations against an agreed baseline.

Respond

Give operators traceable events and inspection recommendations. Controlled actuation is a separate option.

Priority applications

Cooling & refrigeration | Investigate temperature drift and unusual equipment behaviour.
Pumps & motors | Support condition monitoring and maintenance triage.
Technical infrastructure | Retrofit monitoring for installed assets with limited data access.

Start with one asset. Prove the operational value.

A practical route from existing VALO technology to a site-specific industrial solution.

Built on the VALO Edge foundation

The documented design combines a hardware-independent adapter and evidence layer with local sensor processing. The proposed proof-of-concept uses ESP32-S3 sensor nodes, compatible Shelly modules and a Linux gateway with MQTT. Industrial hardware is selected and qualified for the deployment environment.

Monitoring first. Physical actions separately controlled.

For deployments that add actuation: micro-REHT authorizes, the gateway enforces and Veritas records evidence. An AI recommendation does not directly operate equipment.

What is documented today

VALO Edge is recorded as a **prototype**. The Asset Health example documents vibration and temperature inputs, deterministic RMS features, simple thresholds and advisory maintenance suggestions.

The source record describes seven written test cases; it does not confirm CI success or merge status. This brief does not certify current repository status.

Pilot validation

Detection quality and false alarms against a simple baseline; detection time; sensor calibration and data quality; behaviour during sensor, gateway and network faults.

Predictive maintenance performance, cold-store field performance, cyberattack detection and industrial certification are not established by the reviewed evidence.

Define a focused monitoring pilot

Choose one asset class and one costly failure mode. Agree sensor access, baseline and acceptance criteria. Deliver a site-specific integration design, recorded events, comparative measurements and a clear proceed / revise / stop decision.

Evidence basis: VALO Edge record, updated 22 Oct 2026; cooling / technical-site gateway concept, 8 Oct 2026. Hardware partnerships and production deployment are not implied.