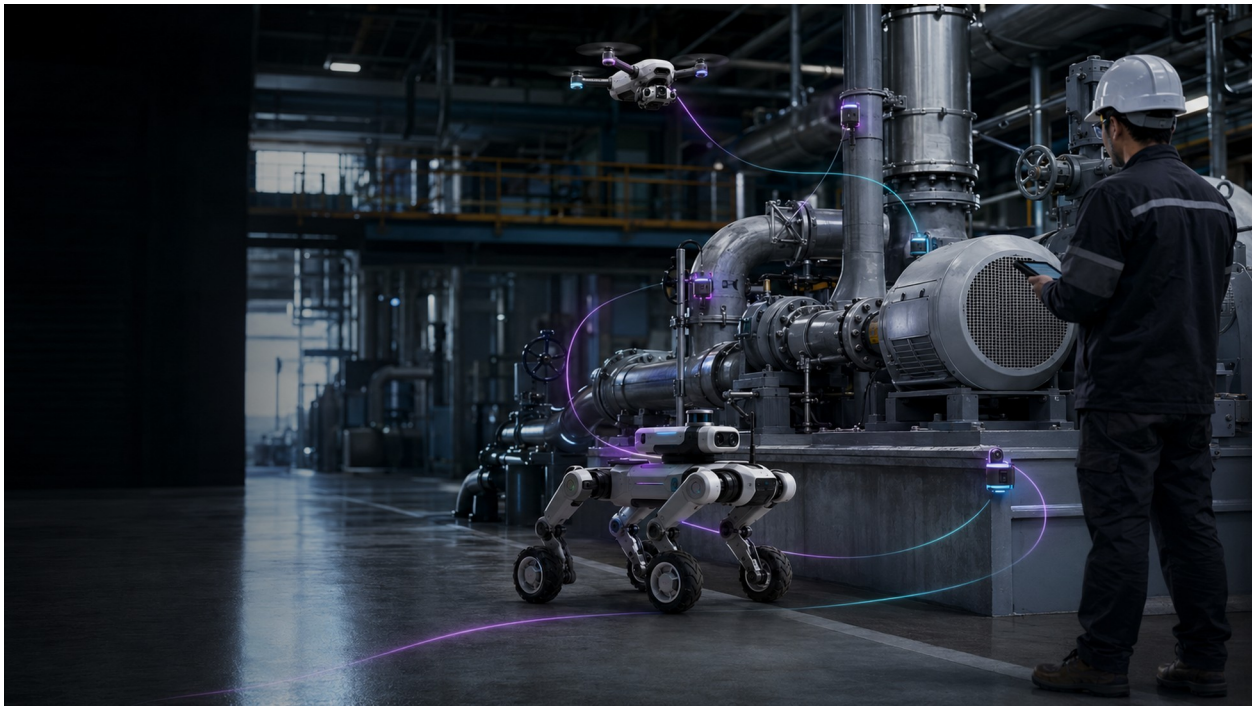
Quanteon

PHYSICAL INTELLIGENCE & ASSURANCE

Turn physical-world evidence into governed action

See the real condition. Anticipate what comes next. Act with confidence.



For energy, process industry, critical infrastructure, security and difficult-access assets.

Robots are optional. Assurance is not.

THE OPERATING PROBLEM

Critical operations have a physical-reality problem

The evidence required for a high-consequence decision rarely lives in one system. It is dispersed across instrumentation, manual rounds, specialist inspections, control systems, camera feeds, maintenance history, engineering limits, weather and operating context.

What is happening now? What could happen next? What action is justified?

Why dashboards, static twins and point robotics are not enough

- Dashboards display what connected systems report; they do not reconcile every relevant physical observation.
- Static digital twins describe an engineered state; they do not continuously represent confidence, conflict and change.
- Point robots and drones collect another stream of evidence; they do not automatically qualify the decision or mission.
- AI identifies patterns; it does not own plant authority, safety boundaries or accountable approval.

The consequence of fragmentation

- Condition changes remain invisible between scheduled inspections.
- Expert time is consumed by collection, reconciliation and triage.
- Evidence quality, provenance and assumptions are difficult to challenge.
- A device may function while the mission remains unqualified.
- Decisions and approvals are hard to reconstruct after the event.

A working machine does not automatically create an assured operational capability.

THE QUANTEON OPERATING MODEL

One governed loop from observation to action

Define. Frame the asset question, consequence, mission boundary, acceptance criteria and accountable authority.

Observe. Combine human, fixed, mobile and robotic evidence with OT/IT and engineering context.

Reconcile. Update the living twin with state, provenance, configuration, confidence and unresolved gaps.

Reason. Use deterministic rules, probabilistic analysis, AI and expert challenge where each is valid.

Qualify and act. Test the mission in digital space; execute only bounded adaptations while local safeguards remain authoritative.

Assure and learn. Preserve evidence, reasoning, approval, action and outcome in the Mission Assurance Record.

Every observation updates state. Every action updates evidence.

The foundation beneath every loop

- Configuration control
- Cybersecurity and role-based access
- Data lineage and calibration
- Verification and acceptance
- Change control and requalification

LIVING DIGITAL TWIN

The operational memory of the asset

A Quanteon living twin is not primarily a 3D visualisation. It is a versioned, time-aware and uncertainty-aware operational representation that is continuously reconciled with reality.

What the asset is: configuration, function, interfaces and operating limits

What it is doing: current state, load and environmental context

What is known: evidence, source, calibration, validity and provenance

What remains uncertain: conflicts, competing hypotheses and missing observations

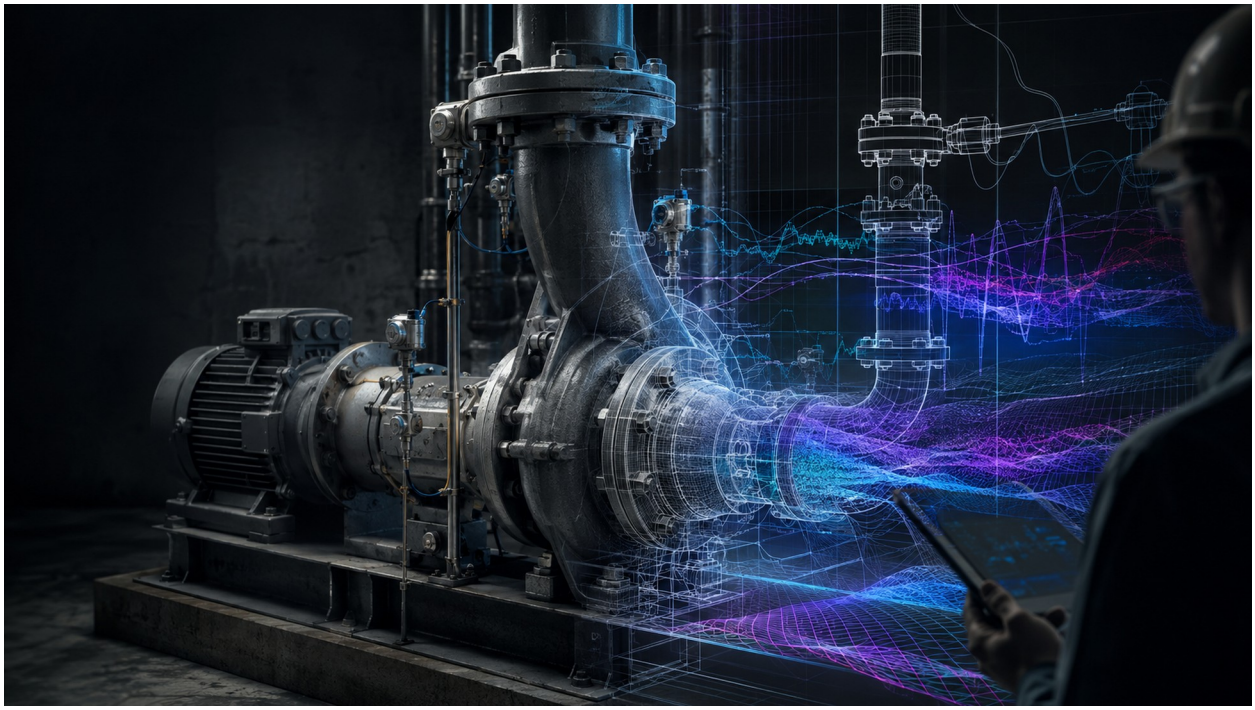
What changed: state transitions, interventions, approvals and outcomes

What should happen next: mission context, evidence gaps and decision authority

> **The twin qualifies and requalifies missions in digital space—and provides a supervisory intelligence layer during execution.**

HYBRID INTELLIGENCE AND AUTHORITY

The right method for the right question



Deterministic. Physics, logic, thresholds, procedures and operating envelopes where rules are known.

Probabilistic. Reliability, evidence weighting, competing hypotheses and risk where uncertainty matters.

AI-enabled. Perception, signal and document extraction, anomaly detection, classification and forecasting where patterns are complex.

Human authority. Interpretation, challenge and accountable approval where consequence is high.

Authority increases with uncertainty and consequence

- Routine: execute inside an approved envelope and record the evidence automatically.
- Exception: escalate missing, conflicting or low-confidence evidence; allow only bounded re-tasking.
- High consequence: qualified specialists and the accountable asset owner decide.

Local machine safety and control functions remain authoritative at all times.

MISSION PORTFOLIO

Begin with the operational outcome—not the machine

Industrial inspection. Recurring operator rounds, thermal and visual change detection, targeted condition investigation, difficult-access surveys.

Security assurance. Alarm verification, restricted-area patrol assurance and common incident-picture formation.

Resilience and response. Storm, flood and fire impact assessment, outage recovery coordination and change detection.

Marine and waterside. Dam and reservoir inspection, intake/outlet condition assurance and waterfront perimeter awareness.

> **One assurance model across human, fixed, air, ground, surface and subsea evidence.**

CAPABILITY BOUNDARY

Delivered now. Productised over time.

Available today	Quanteon roadmap
Mission and requirements engineering	Quanteon living-twin core
Failure logic and acceptance definition	Reusable mission and failure libraries
Fixed and mobile sensing integration	Native multi-vendor connectors
Robot and payload integration	Bidirectional mission orchestration
Customer and partner twin platforms	Automated evidence and confidence ledger
Hybrid analysis using proven tools	Cross-site learning and portfolio intelligence
Assurance, cyber and readiness	Qualified Quanteon field-system variants
Bounded pilots and managed delivery	Supervised closed-loop intervention

Roadmap items are product intentions, not claims of current certification, deployment or autonomous safety authority.

Field-system roadmap

Quanteon is developing a coherent family of twin-native air, ground, surface, subsea and future humanoid endpoints. Early projects remain vendor-neutral and use qualified customer or partner equipment. Proprietary chassis development begins only when repeated paid missions prove an unmet requirement.

No claim of a finished universal operating system. No autonomous safety sign-off.

START WITH ONE DECISION

Assured Mission Baseline

10 working days · CHF 25,000 fixed fee · 60% upfront · No hardware purchase

Scope one asset group, one recurring route or mission, and one operational decision. Quanteon maps the evidence and authority model, creates the first living-twin baseline, designs the governed mission workflow and delivers a decision-ready implementation roadmap.

You receive

- Current route, cost and evidence baseline
- Failure modes and critical-signal map
- Fixed and mobile sensing concept
- Living-twin and data architecture
- Safety, cybersecurity and authority constraints
- Acceptance criteria and business case
- Fixed-price operational-validation proposal

The outcome is a usable proceed / reshape / stop decision—even if Quanteon is not retained.

Bring us one mission that matters

Choose the mission where better physical evidence would change a decision. We will show how to assure it.

Benjamin Regener
Founder & CEO, Quanteon GmbH
benjamin.regener@quanteon.ch
+41 44 442 33 61 · +41 79 912 82 49
www.quanteon.ch