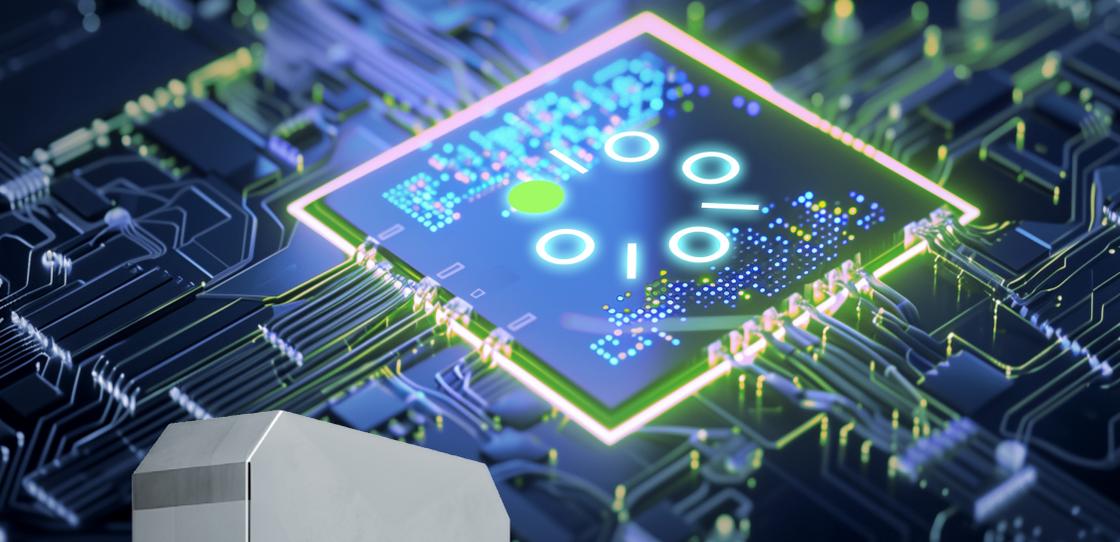# THE MACHINE'S HEARTBEAT

de Jonge EdgeBrain™
Inline intelligence
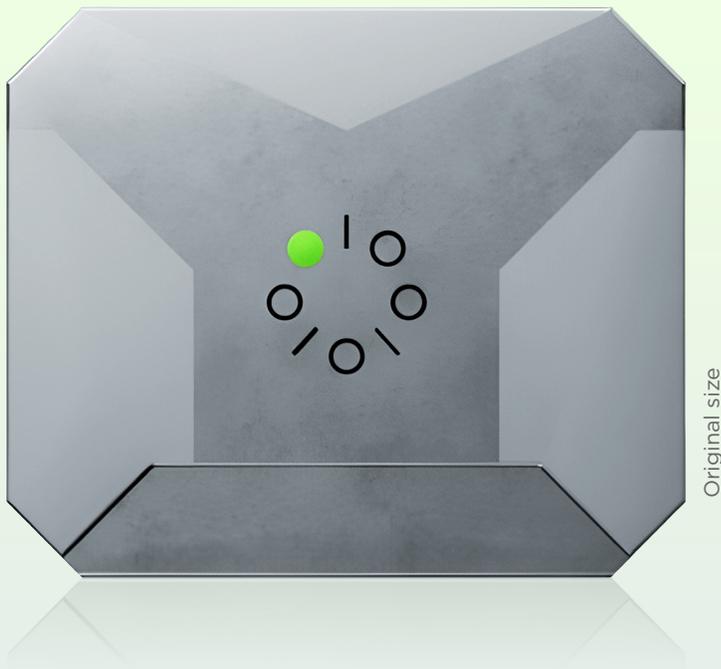for industrial applications

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SENSE · EXPLORE · ACT

Industrial AI succeeds when it moves in sync with the Machine's Heartbeat

Real systems demand stable data paths, clear interfaces, deterministic latency, seamless IT/OT handover and security you can trust. EdgeBrain is built exactly for this reality and turns complexity into a clean, reliable integration layer.

EdgeBrain lives inline, turning data streams into decisions without reworking the overall system architecture.

Original size

Born in Dürer's Nuremberg, EdgeBrain brings engineered precision into the data path and keeps the Machine's Heartbeat in perfect rhythm.
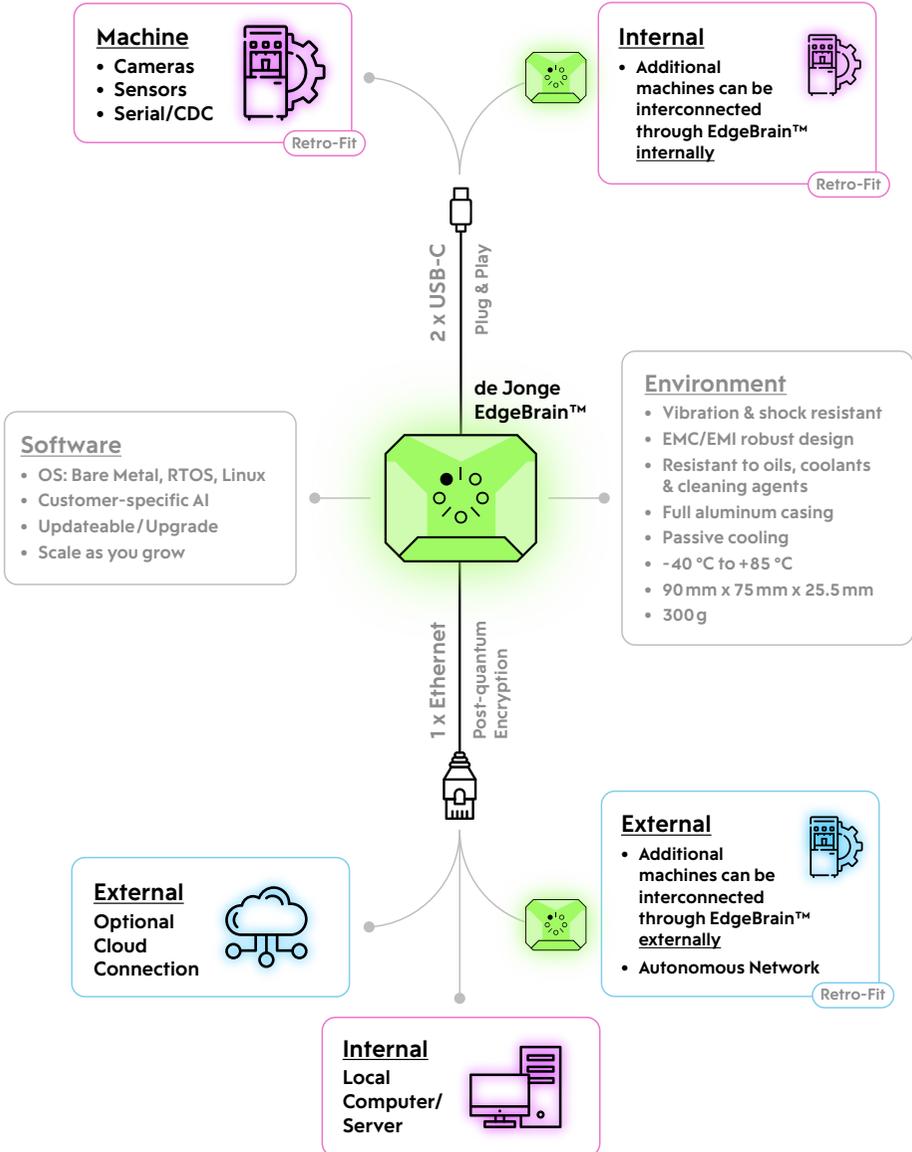
Industrial use cases and capabilities

EdgeBrain brings deterministic inline AI directly into the data stream, enabling real-time processing in existing industrial data paths with minimal integration effort. It is designed for robust deployment in Industry and Manufacturing scenarios where stable timing, interface compatibility, and operational simplicity matter.

- Deterministic inline inference for real-time decision outputs
- Quality inspection and defect detection in the running data stream
- Sensor fusion and signal consolidation for machine and process control
- Plug-and-play brownfield retrofits without reworking IT/OT architectures
- Interface-near deployment as an inline adapter (sensor/host)
- Local, offline-first operation with optional highly secure hybrid connectivity
- Delivered as a use-case package: preconfigured or customer-parameterizable
- Applicable across discrete manufacturing (automotive, electronics, packaging), process industries (chemical, pharma, food), and high-throughput environments such as material handling and recycling.

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Built like clockwork, engineered as a system

Machine
- Cameras
- Sensors
- Serial/CDC

Retro-Fit

Internal
- Additional machines can be interconnected through EdgeBrain™ internally

Retro-Fit

2 x USB-C
Plug & Play

de Jonge EdgeBrain™

Software
- OS: Bare Metal, RTOS, Linux
- Customer-specific AI
- Updateable/Upgrade
- Scale as you grow

Environment
- Vibration & shock resistant
- EMC/EMI robust design
- Resistant to oils, coolants & cleaning agents
- Full aluminum casing
- Passive cooling
- -40 °C to +85 °C
- 90 mm x 75 mm x 25.5 mm
- 300 g

1 x Ethernet
Post-quantum Encryption

External
Optional Cloud Connection

External
- Additional machines can be interconnected through EdgeBrain™ externally
- Autonomous Network

Retro-Fit

Internal
Local Computer/ Server

What EdgeBrain™ enables

Retrofit without disruption

Upgrade existing lines and machines with intelligence quickly and safely. EdgeBrain adds real-time decisions inline while keeping your sensors, PLC landscape and operational workflows intact. No infrastructure overhaul, just measurable impact.

Less data movement, more control

Process data where it is created and forward only what is relevant, which reduces bandwidth, compute load and system complexity. Only what matters reaches the next stage.

Predictable real-time behavior

Deterministic processing and controlled data flows designed for applications where timing, reproducibility and reliability matter. Your system stays in rhythm.

Security and sovereignty by design

Runs fully local. If connectivity is needed, EdgeBrain supports optional bidirectionally encrypted secure blocks for trusted hybrid workflows covering models, parameters and metadata.

Clean interfaces, clean integration

A robust in-between layer that standardizes the handover from sensor streams to host applications and reduces engineering effort and project risk. Integration becomes part of the machine, not a side project.
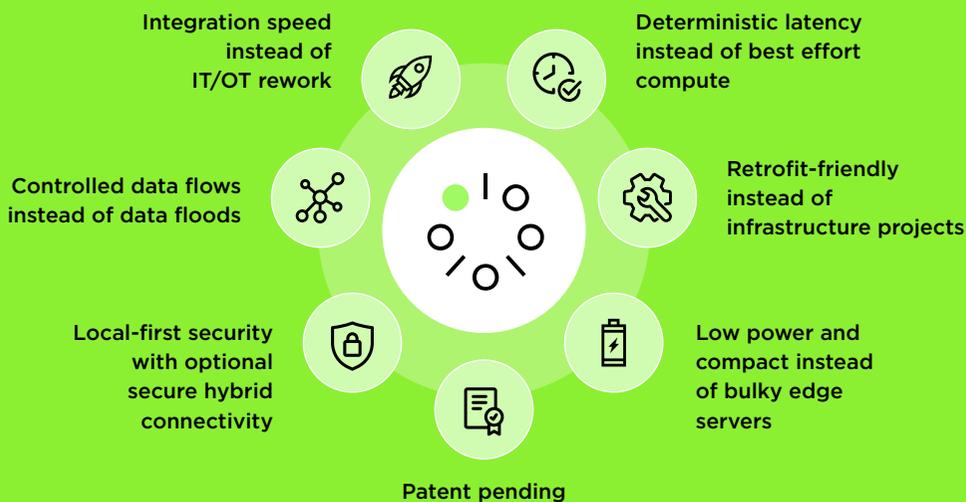
Field-ready efficiency

Low-power FPGA-SoC architecture for always-on operation, compact integration and stable performance per watt. Built to run continuously at the edge of real machines.

Artificial intelligence has never been so easy to integrate

EdgeBrain keeps intelligence in sync with the Machine's Heartbeat.

Your benefits at a glance

Integration speed instead of IT/OT rework

Deterministic latency instead of best effort compute

Controlled data flows instead of data floods

Retrofit-friendly instead of infrastructure projects

Local-first security with optional secure hybrid connectivity

Low power and compact instead of bulky edge servers

Patent pending

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