ioncentric

The infrastructure behind the digital product passport.

One system. All data. Full compliance.

Tracable products.
EU-Battery-Passport-ready.

At ioncentric, we focus on building the technological foundation for the future of traceable, sustainable products.

With the eiscube, we've developed a compact and powerful edge device specifically designed to capture, encrypt, and process critical lifecycle data directly at the source.

This enables companies to comply with the EU Battery Passport regulation – and prepares them for broader Digital Product Passport (DPP) requirements across industries.

Fully integrated IoT-ecosystem

Most industrial systems aren’t built for traceability. Legacy hardware, data silos and fragmented interfaces block progress. **ioncentric solves this with a fully integrated IoT-ecosystem:**

eiscube

Edge hardware with electrochemical Impedance Spectroscopy (EIS). Signed, Zero Trust communication.

ioneis cloud

Central data layer with automated analysis and data consolidation.

DPP

with static & dynamic data

The result:
Your Digital Product Passport

For traceable, sustainable products

Our work on the battery pass is more than regulatory compliance: it sets a blueprint for transparency, circularity, and digital accountability in manufacturing.

Regulatory background

Starting February 2027, the EU Battery Regulation (EU 2023/1542) requires digital product passports for all industrial, traction, and EV batteries.

The objective:
more transparency, traceability, and circularity.

- Tracks origin, materials, CO_2 footprint, usage & recycling
- Enables compliance, ESG reporting & circular economy
- Mandatory, machine-readable, and linked via QR-Code

This marks the start of a wider shift – toward universal digital product passports (DPPs) across industries.

The ioncentric architecture

Edge device

- Live data aquisistion
- embedded encryption
- local analysis (implemented EIS-chip)

Data Processing & Intelligence

- predictive analytics
- lifecycle monitor

Decentralized Transfer

- Zero Trust
- Tamper-proof logs

Digital Product Passport

- EU Battery Pass
- ESG reporting
- API integration

What challenges in Centralized Energy Operations does ioncentric solve?

Operational Inefficiencies

- lack of real-time data from Battery modules
- manual inspection cycles lead to delayed issue detection

Fragmented systems

- multiple vendors for hardware, software
- poor integration between hardware, platforms and reportig tools

High maintenance costs

- time-consuming on-site diagnostics
- repeated technician dispatches for routine tasks

Regulatory Pressure

- growing demand for tracability and ESG reporting
- Lack of infrastructure for Digital Product Passports

High total cost of ownership (TCO)

Missed revenue opportunities (e.g. no second life usage)

Why many IoT & Industry 4.0 Projects fail according to business reports?

Fragmented solutions

IoT applications often remain isolated, lacking interoperability across systems and vendors.

Interface overload

A high diversity of protocols and interfaces creates complex integration paths.

Disconnected domains

IT and OT still operate in silos – leading to coordination issues and implementation delays.

That’s why ioncentric delivers:

One platform. One flow. Total control.

Our competetive edge:

Build for today‘s compliance – and tomorrow‘s complexity

Full Stack IoT Platform

One ecosystem for hardware, encryption, cloud and analytics – fully integrated, fully scalable

Compliance by Design

Built to meet EU Battery Passport, DIN DKE SPEC 99100, ESG reporting & upcoming regulations.

Interoperable. Future-Ready.

Supports expansion to other regulated product groups – from electronics to machinery.

Plug & Play – Retrofit Ready

No rip-and-replace. Seamless connection to existing infrastructure, machines and systems.

What starts with batteries, scales to any connected product.

Ready to connect your products?

Securely, intelligently, and compliant from day one!

Whether you're preparing for the EU Battery Passport or looking to scale product traceability across your portfolio, ioncentric provides the tools to make it real.

Prof. Dr.
Salvatore Sternkopf

Technical consultant and co-founder of ioncentric

"We designed eiscube to turn physical assets into verified digital identities."

With 20+ years of experience in battery technology, materials science and e-mobility, I support the development of secure, scalable IoT solutions. My background combines academic research with strategic roles at Volkswagen in development, innovation and e-mobility.

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