Next Generation Supply Chain Automation and Intelligence

**Powered by
IoT Sensing and Blockchain.**

modum

Mission + Vision

Modum develops solutions that deliver trusted insights to improve our customer's supply chain automation. Our vision is to be an invaluable partner to our clients by turning untapped supply chain data into valuable business intelligence, supporting insight, optimization, and automation. Our overarching values: reliability and quality, customer enablement, trusted relationships, and agility and innovation, allow us to benefit our customers, partners, and team.

History

modum.io AG is a Zurich-based start-up founded in 2016 by a group of entrepreneurs with backgrounds in information technology and pharmaceutical manufacturing. Modum provides digital value chain monitoring and analytics solutions that enable compliance with regulatory requirements. In 2017, Modum held a token sale to fund the development of its first product, MODsense, which entered the market in 2018. The team is currently collaborating with Swiss Post, SAP and AWS.

How Modum Helps

Creating innovative digital solutions for today's supply chain challenges.

The complexity of global supply chains is increasing in today's digital world. Businesses need innovative solutions designed for large-scale data collection, secure information exchange, and business model and operational process optimization. Modum helps tackle these challenges today.

A trusted link to real-world evidence

Trusted data at scale — Modum's monitoring solution, designed for high volumes, provides accurate measurements with end-to-end hardware and software encryption. We create a trusted "digital twin" of the physical sensor using blockchain technology, ensuring an immutable link between measured data, quality requirements, and the shipment.

Direct + immediate access to information

No more delays to access information — our monitoring solution provides automated data read-outs upon delivery and validation of quality parameters in our dashboard. Detected quality-related events can be shared within a supply chain ecosystem comprising of different parties.

Simple + intuitive user experience

Ease of use is our main design principle — we guarantee a smooth user experience from setting up monitoring devices and sending shipments to managing measured data. Introducing our solutions into an organization can be done step-by-step, starting with a simple evaluation kit and leading to full integration into your enterprise management systems.

Valuable insights for automated decision making

Data is the currency of the digital age — we support insights gained from data with the use of advanced analytics and machine learning techniques. Quality assessments of measured shipment data, root cause analysis of shipment events, and prediction-driven process recommendations allow us to support automated decision making in supply chains.

Strong + global partnerships

Teaming up with industry partners allows us to offer our customers solutions that work across internal or external system boundaries. We collaborate with well-known technology leaders to ensure true interoperability and deeper enterprise system integration. Our business partners allow us to gain valuable experience with customer processes and requirements.

Lean, cost-effective solutions

We aim to keep costs at a minimum by designing solutions that are fit-for-purpose, reducing both the implementation effort and the operational effort of supply chain processes. These cost reductions coupled with a competitive service-oriented pricing model, enables us to provide a commercially attractive offering for any type of organization.

Use Cases

Addressing key challenges for demanding supply chains.

Modum provides an innovative solution for the regulatory-driven issues that supply chains face, particularly in the healthcare sector.

Cold Chain

As temperature-sensitive medicinal products travel to the end user, external conditions, specifically temperatures, can reduce their efficacy and quality. Temperature-controlled packaging can maintain desired temperature ranges. However, in order to fulfil Good Distribution Practice (GDP) regulatory requirements, a monitoring solution is required. MODsense works easily with your existing processes to ensure quality and compliance.

Vaccines

According to the World Health Organization, the temperatures that vaccines are exposed to must be monitored, recorded, and reported, from manufacturer's point of origin to the point of vaccination. Upholding quality standards is challenging in the final phases of the supply chain. MODsense is designed for monitoring a high volume of shipments efficiently and effectively.

Clinical Trials

As compounds used in treatments and trials become more complex, agencies are improving their monitoring documentation to support stability claims and label parameters. MODsense allows for customized measurement criteria that supports product-specific monitoring and our robust temperature logger can ensure that unique temperature ranges can be recorded.

Functional Foods

Often categorized as neither a drug nor a dietary supplement, functional foods can be subject to unique reporting requirements and quality concerns. MODsense collects digital data that is verified in the blockchain, allowing manufacturers and distributors the flexibility to record and report but also to analyze. The unique insights gained by using MODsense not only improve your business processes but also quality for the consumer.

Further Applications

Food & Beverages **Electronics** **Medical Supplies** **Art + Valuables**
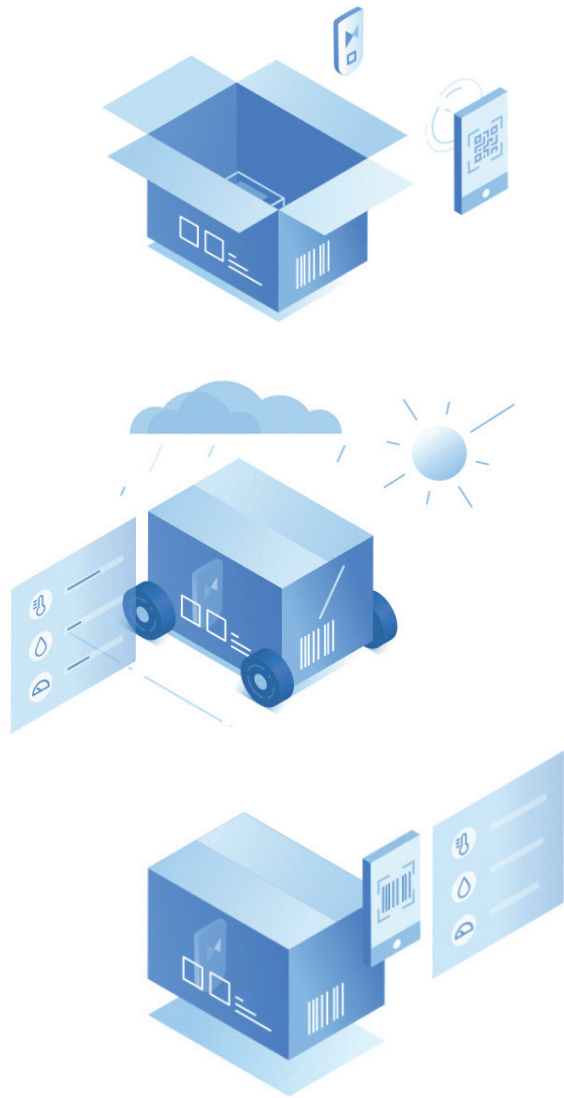
MODsense

MODsense is a monitoring solution built for the highest quality standards. It is designed for demanding supply chain applications subject to regulatory requirements, such as those in the pharma industry. The solution enables easy data collection at scale and provides a trusted information environment through industry-leading data security, integrity, and authenticity based on the latest technologies, including Blockchain.

The entire solution can be seamlessly integrated into existing workflows, track-and-trace, and enterprise management systems, providing immediate global access to shipment measurement and quality assessment information.
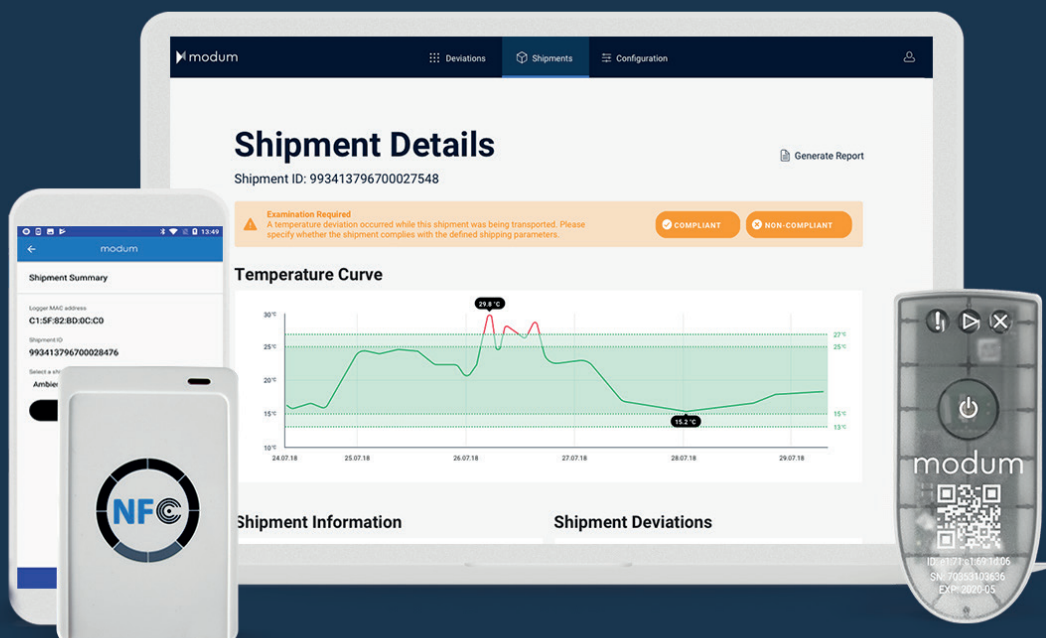
Temperature Monitoring with MODsense

Step 1

Sending the Shipment

Product-specific temperature ranges are set in advance so that your logistics team can activate the MODsense T data logger using NFC and connect it with the parcel by scanning the shipment ID.

Step 2

En Route

While in transit, the temperature logger measures the environmental conditions that the shipment is subject to. Stored locally, this valuable data is secure during transit.


Step 3

Receiving the Shipment

When the package is received, the shipment ID on the parcel is scanned by the recipient or a 3PL provider to perform an immediate read-out of the sensor. Authenticated data is automatically pushed to the blockchain and all stakeholders can be immediately notified of deviations.

MODsense Overview

Complete with Dashboard and Commissioning Apps

The MODsense web app allows your team to automate monitoring processes using the MODsense T temperature logger. It is an environment to define quality requirements that offers shipment management and quality assurance tools, providing data exports and audit reports.

The MODsense commissioning apps allow for immediate activation of the temperature logger via mobile app, mobile SDK, and NFC.
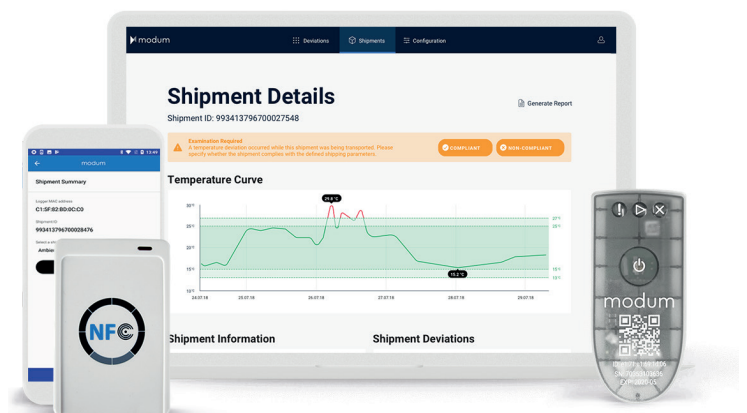
MODlink

MODlink uses blockchain technology to enable the sharing of trusted events within a supply-chain ecosystem; it connects the independent data silos of stakeholders without exposing private data. MODlink bridges data access gaps between enterprises, allowing process automation and new insight; it provides access to blockchain-secured data pools in compliance with regulatory requirements; and it assures quality, integrity, and efficiency within the supply chain for all involved parties.
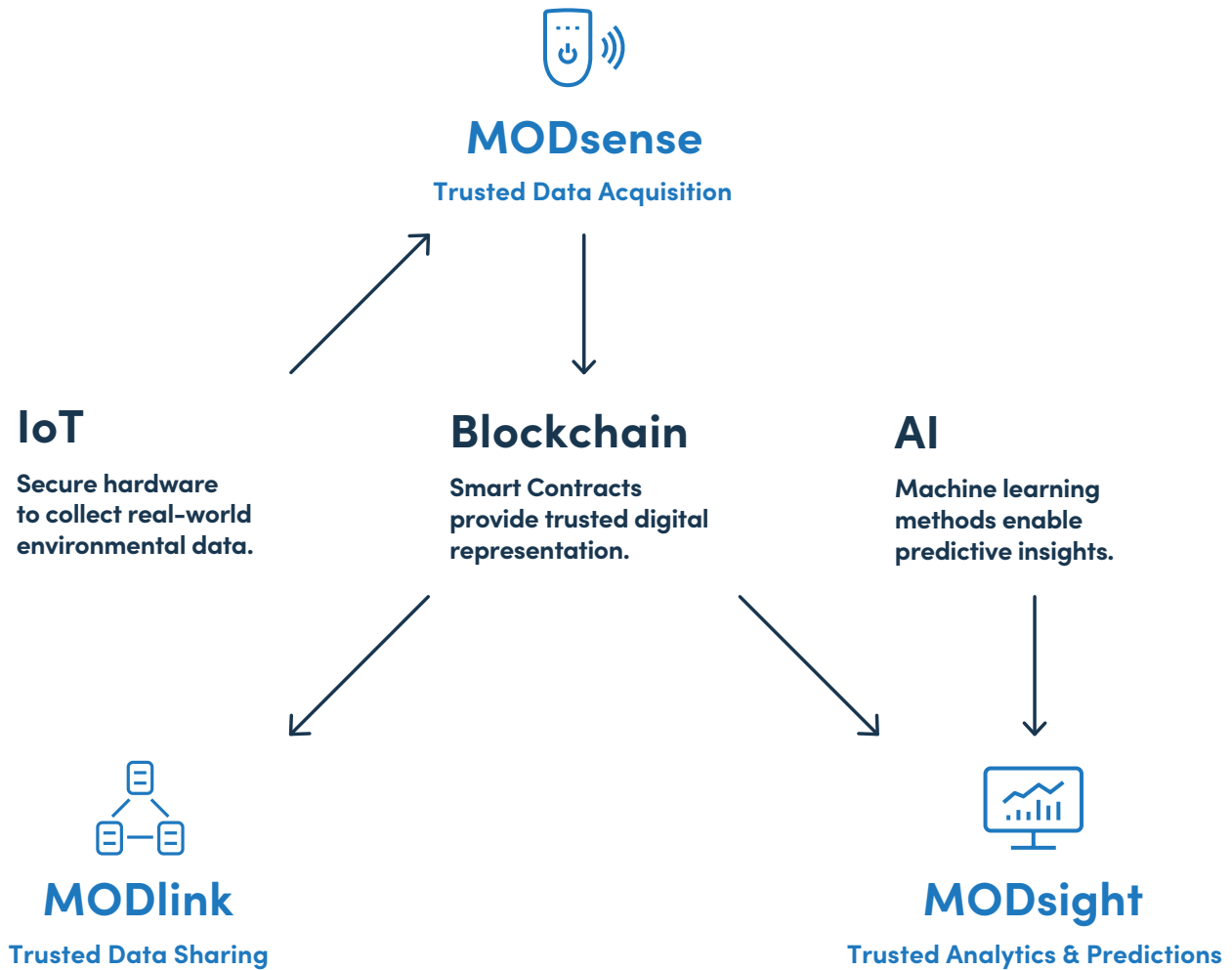
MODsight

Using acquired data, MODsight provides aggregated insights through advanced analytics and predictions.

Scenario analysis is used to understand the root-cause of trusted events and predictive models help to improve the value chain, reduce costs, and optimize risk management. MODsight runs on leading cloud platforms to facilitate integration into your IT ecosystem.

How our Solutions Work Together

MODsense

Trusted Data Acquisition

IoT

Secure hardware to collect real-world environmental data.

Blockchain

Smart Contracts provide trusted digital representation.

AI

Machine learning methods enable predictive insights.

MODlink

Trusted Data Sharing

MODsight

Trusted Analytics & Predictions

How We Use Technology

IoT Devices

- Smart sensing for a wide range of environmental conditions.
- The latest connectivity options enable seamless process integration and real-time notifications.
- Cryptographically secure hardware ensures data authenticity and that data cannot be manipulated at its source.

Blockchain

- Monitored data is verified on the blockchain.
- Temperature parameters create a unique smart contract for each shipment, verified at readout to ensure data authenticity.
- Storing data sets on the blockchain ensures data integrity throughout and that data is stored immutably.

AI

- Self-learning models replace the manual modelling of shipment scenarios with a large variety of feature sets.
- Machine-learning methods facilitate high accuracy prediction and pattern recognition.
- Easily retrainable models adapt to changes in business scenarios.

Technology Partners

SAP® aws VARIO**SYSTEMS**®

Business Partners

Deloitte. GS1® Switzerland

Academic Partners

University of St.Gallen Universität Zürich UZH

Awards

DIGITAL ECONOMY AWARD PostEurop Innovation Award KICKSTART ACCELERATOR

Certifications

SYSTEM CERTIFICATION ISO 9001 SGS TÜV SUD EN 12830 GAMP® 5