




**FACILITATING**

**DIGITAL**

**TRANSFORMATION**



**SOON** BILLIONS OF  
SENSORS WILL BE  
CONNECTED  
WORLDWIDE.

**IN E-SCOOTERS, CARS,  
PARCELS, GARBAGE  
CANS, MACHINES, AND  
EVEN OUR CLOTHES.**

Digital transformation offers a wealth of ground-breaking opportunities for new, data-driven business models. Provided that IoT data are trustworthy, that is. After all, trust is the key to any business relationship. And even more so in a digital world in which "things" do business with each other without the need for people to meet, shake hands, and sign contracts.

But, since they are insufficiently scalable, insufficiently economical, and/or insufficiently trustworthy to warrant data integrity and authenticity in a fully connected world, conventional solutions for securing IoT data have their shortcomings.

With the help of blockchain technology, however, UBIRCH is solving this problem. Now, for the first time, IoT data can be shared and traded securely. Discover how it is done and what new opportunities our technology can offer your company when it comes to facilitating digital transformation.

**IoT Data. Secured. Forever.**

# OUR REVOLUTIONARY TECHNOLOGY FOR TRUSTED DIGITAL TWINS

With every process and data-based business model relying on a digital twin, the UBIRCH solution to a fully networked world uses robust cryptography and blockchain technology to seal each data packet at the point of data acquisition before it moves from the physical to the digital world. The result is an unalterable chain of trust which evidences that IoT data has not been tampered with, deleted, or added to at any point from the source on. Just as if they were at the source, recipients can verify data secured this way anytime and anywhere.

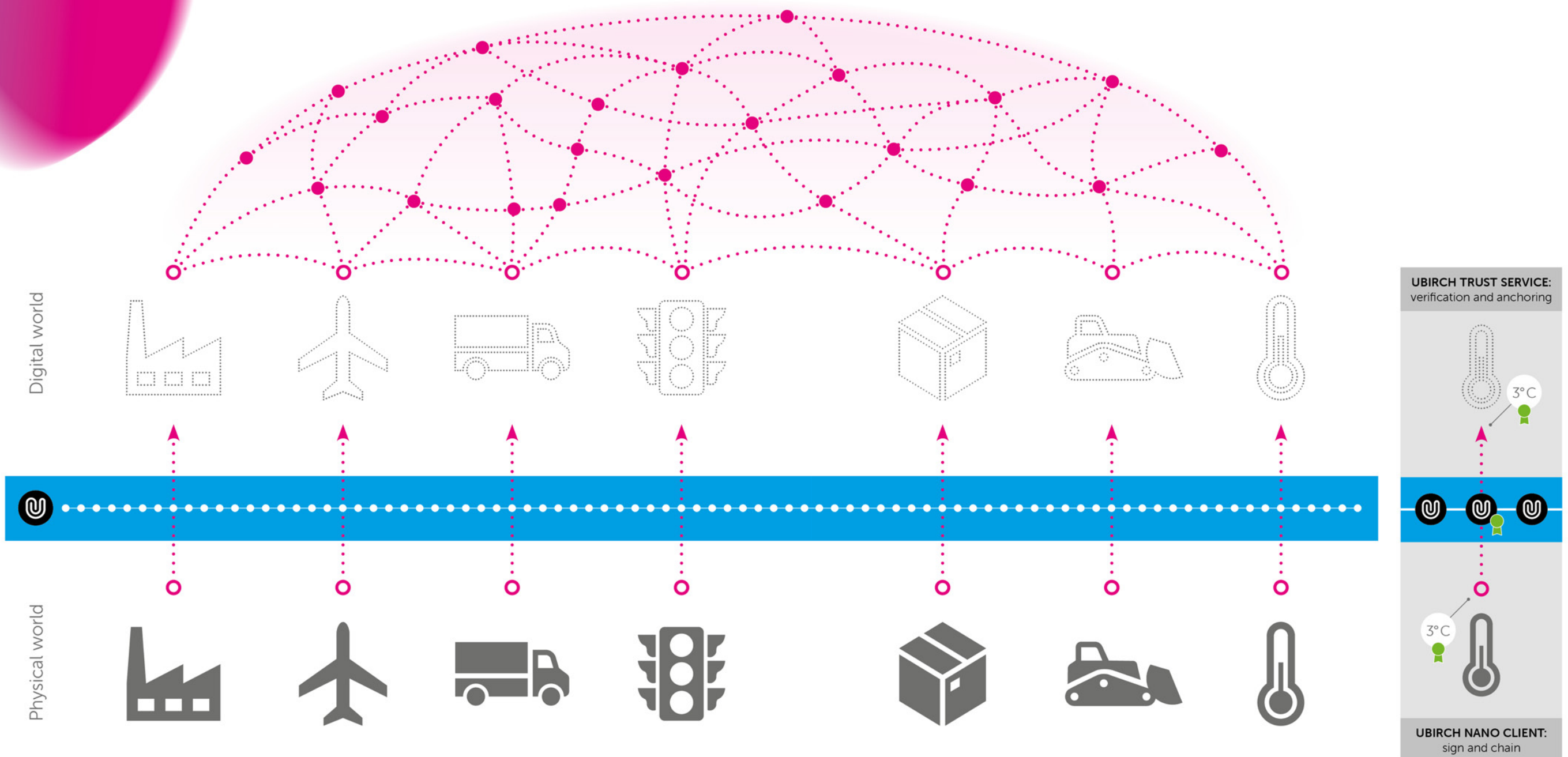
The UBIRCH solution is easy to integrate into IoT platforms and other system landscapes. Not requiring any additional hardware, it consists of two components:

#### UBIRCH NANO CLIENT:

Is a small lightweight software library for edge devices, as well as the smallest MCUs and SIM cards, which is used at the point of data acquisition to sign and chain data to the blockchain-like UBIRCH protocol.

#### UBIRCH TRUST SERVICE:

Is an easy-to-use cloud service that anchors IoT data in the blockchain and allows anyone to verify the authenticity and integrity of the received data via a REST interface.





# DIGITAL WORLDS OFFER INFINITE POTENTIAL.

## PHARMA

In the future, pharmaceutical companies will be able to use IoT to digitally map processes involving everything from the supply of chemicals through production and specialist transport to finished packaging on-site at the customer. UBIRCH creates the preconditions for sensor data authenticity, legally compliant documentation, and process chain transparency across all participants.

## FOOD

Food industry processes can be mapped – from the smallest link in the supply chain through production and the cold chain to the consumer – using trustworthy sensor data. UBIRCH seals production data directly at source. This offers the advantages of high transparency, easier recalls, and automated legally compliant documentation. Equally important benefits are the credibility of eco and organic labels as well as consumer confidence in digital production chains.

## ENERGY SUPPLIERS

The energy industry is in a state of upheaval. Rather than large centralized plants, in the future decentralized infrastructures comprising sensor-rich wind turbines, PV systems, and private-home solutions will come to dominate the energy landscape. UBIRCH enables every producer and consumer, no matter how small, to reliably record and bill every transaction. Likewise, thanks to UBIRCH, the execution of critical switching commands in the Smart Grid will become dependent on local verification.

## MANUFACTURING

Networked data-driven production is becoming increasingly commonplace thanks to sensor-rich networks that enable suppliers to deliver just the right parts and parts data to the manufacturer. During production, machines log data into the blockchain and invoice their use directly in the ERP system. But this only works if the data provided by the machines is completely dependable and enjoys the trust of all those involved, regardless of their location.

## SMART CITIES

Whether it is to record air quality, to indicate when garbage cans need emptying, or to turn the traffic lights green to let an ambulance through, IoT sensors are being increasingly used in cities. UBIRCH guarantees data integrity – something that is essential to the safe operation of the city's infrastructure, the provision of digital services, as well as full public transparency.

## INSURANCE

In the future, insurance companies will not only be able to calculate risks individually using IoT sensors built into insured objects but, thanks to UBIRCH, also settle claims automatically using smart contracts. Since the insurer can verify data sealed at source at any time, this is even possible if the insurer is not directly connected to the insured object's IT.

## MEDICAL DEVICES & HEALTHCARE

Digitalizing the health care system represents a mammoth task. In the future remote-controlled robots will conduct surgery, samples will be analyzed using telepathology, and critical medical devices will generate forgery-proof log files for administered drugs and body measurement data. The UBIRCH solution guarantees the reliability of these data and stores them in a legally compliant manner.





# UBIRCH TESTIMONIALS

## A PIONEER NEEDS A STRONG COMPANION.

Using a smart combination of proven cryptographic signatures and blockchain technology, we have rethought IoT. Now it is secure, scalable, and future-proof. No wonder that well-known companies are increasingly working with UBIRCH to make digital transformation reality. After all, when it comes to the next industrial revolution, we are your development partner, system integrator, and strong companion.

Amongst others, our partners include the following companies:

- |                     |            |                                |
|---------------------|------------|--------------------------------|
| · T-Labs            | · WAGO     | · Lufthansa Industry Solutions |
| · Microsoft         | · regio iT | · Novoferm                     |
| · Bundesdruckerei   | · Reply AG | · Center Connected Industry    |
| · Giesecke+Devrient |            | (RWTH Aachen)                  |

» As a multichannel media marketer, we are already planning for the responsive city of the future – IoT technologies will play a decisive role in this. The UBIRCH solution for securing data represents a good approach to a number of challenges that will arise. «

**Christian von den Brincken, Managing Director Business Development, Ströer SE & Co. KGaA**

» Parametric insurances will become more important in the future – but we also need solutions for providing reliable IoT sensor data. UBIRCH offers an exciting solution based on the intelligent application of blockchain technology. «

**Dr. Matthias Maslaton, Board Member Sales/Product/Innovation, ARAG SE**

» Developing an IoT device involves solving a lot of issues including certification, user experience, battery life, and firmware. Thanks to the UBIRCH solution, we were able to solve the problem of securing our IoT data very easily. At the same time, the UBIRCH system has meant we were able to add a powerful feature to our product without having to develop it ourselves. «

**Katrin Reuter, CEO and Founder, trackle GmbH**

» Digital twins are critical to digital transformation – these twins are often generated using data from IoT sensors. The UBIRCH solution offers the unique opportunity to secure this data intrinsically. I see huge potential, especially for the integration of the UBIRCH solution into SIM cards. «

**Peter Weichsel, Partner, Deloitte Technology Advisory Ltd.**



# SOME VISIONS ARE BORNE IN THE GARAGE. OURS IN THE FRONT GARDEN.

UBIRCH's revolutionary technology is backed by cyber-security experts, digital minds, and innovative movers and shakers who have been committed to moving digital transformation forward for a long time. Founded in 2014, UBIRCH has offices in Cologne, Berlin, and Munich. Supporting customers on all five continents we are a strong team of experienced developers, consultants, and digitization experts.

## UBIRCH ['ju:bərtʃ]

UBIRCH takes its name from a digital installation created by company founder Stephan Noller. Stephan attached stars to a birch tree in his front garden that shone in response to tweets sent from individuals all over the world. UBIRCH's enthusiasm for digital transformation knows no bounds!

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