M-Trust™ Patent Family

BRIDGING THE PHYSICAL AND DIGITAL DIVIDE

In an era where processes are becoming increasingly digitalized and executed entirely by machines, it is crucial to ensure reliable and secure object identification. M-Trust™ technology allows us to immutably link the physical and digital worlds.

We differentiate our solution through our extensive portfolio of over 150 patents, with 14 additional patents pending, which allow us to secure the connection between the physical and digital worlds, ensuring trust and authenticity.

physical world

Crypto-Chemicals I and related Continuations
US 10,002,362 B1

View Patent

Pigments

Cryptochemicals I

Leveraging our security portfolio (Securalic® pigments) the cryptochemicals patent allows machines to create a secure identity from characteristics like the spectral response of these kind of pigments.

Crypto-Objects
US 10,193,695 B1

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Barcodes and Chips

Crypto Objects

Overcoming the limitation of pigments, so called physical unclonable functions (PUFs) are used to form crypto-objects. These cover any kind of physical, chemical or biological object authenticity granting properties.

Images

Crypto Objects

A machine-learning recognition model trained to extract discriminating characteristics from images or other sensory values, can provide machines with collision-resistant identities of objects. These models can be trained to also classify future states of an object (such as an aged version).

Hash-Entropy-Enhancement
US 11,115,209 B2

View Patent

digital world

Generate reproducible collision-resistant hashes out of the fingerprint from an anchor.

DIGITAL TWIN

Entropy Enhancement

Hash-Entropy-Enhancement

To increase robustness, ease of use and security of object discriminating factors, ambient information to the physical objects like temperature, pressure, time, location or other value chain information can now be part of the hash input.

Crypto-Chemicals II and related Continuations
US 10,002,277 B1

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Anchoring

Applies to all patents

Anchoring is the process of securely binding a physical object with a digital twin. This process ensures that both representations of the object – the physical and the digital – remain in sync and cannot be tampered with.

To do this the M-Trust™ platform uses so called collision-resistant hash functions to derive the digital twin from unique physical characteristics of the object.

MACHINE-LEARNING

Disassembling protected

Crypto chemicals II

As the identity of the object is provided by the physical object itself, disassembling the reader would not breach the security of the system.

Trust & Authenticity of Objects and Processes

TOKEN - ID CARD

Create a token from any physical object

Crypto Trust

The identity derived in the anchoring process is used to create a cryptographic token. This token ensures the authenticity of the object and grants as digital twin of the object the highest amount of interoperability in the Internet of Things (IoT).

Crypto-Trust
US 111,283,610 B2

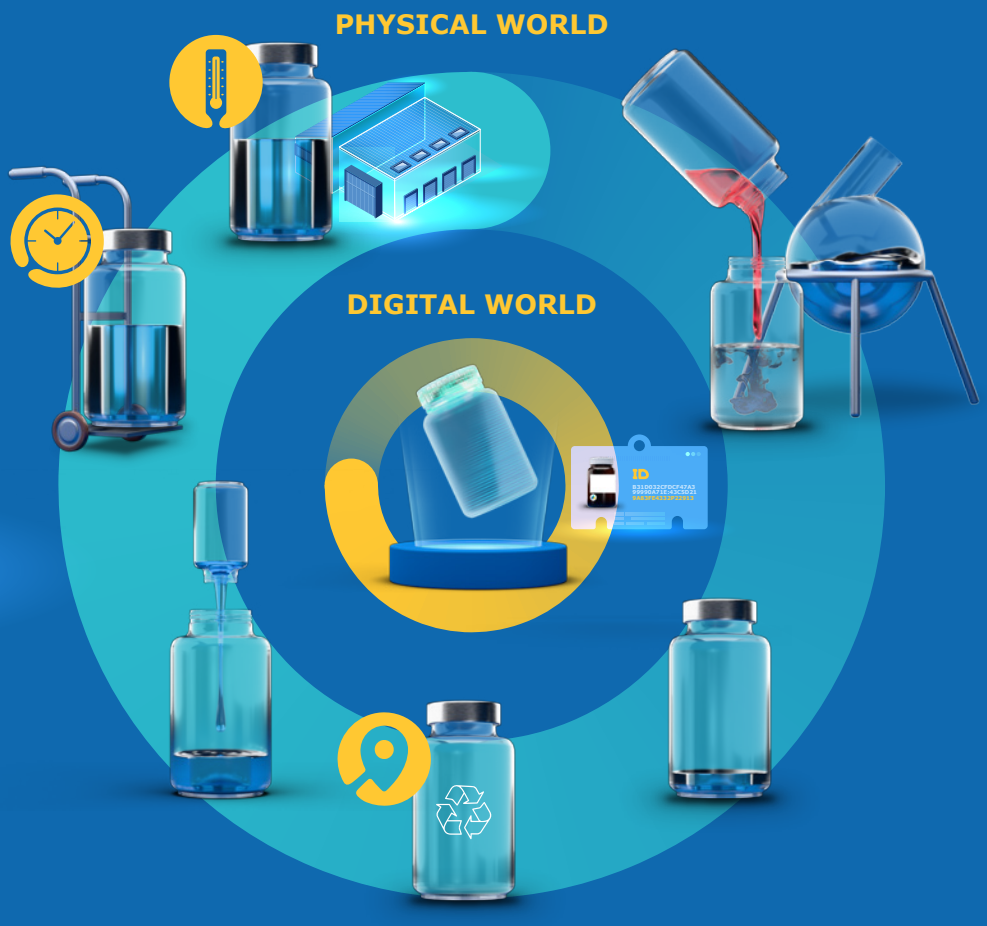
View Patent

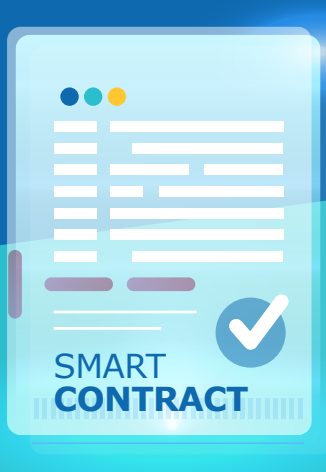
REQUESTER

Requester:

Human or Machine

By tokenizing objects, they become available to humans and machines. The authenticity of objects, workflows and credentials become transparent to all involved parties, while preserving privacy at all stages.





Smart Contracts

Crypto trust

By making identities available to so called smart contracts running on distributed ledgers, machines can consider business logic and make secure and traceable decisions on objects and associated processes (e.g., quality control, production, payment, audits).

Learn how M-Trust™ technology can help future-proof your business today.

Visit: www.mtrust.io

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