



The next-generation unclonable physical seal that guarantees and proves the integrity of your products, flows and access against fraud, substitution and intrusion

Installable and verifiable in seconds by any field operator

Works anywhere in the world — no network, no infrastructure, no dependency



June 17 – 20, 2026

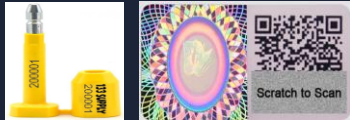
CNRS Booth · Porte de Versailles





Prove and certify with zero cyber risk

► Existing solutions are unreliable, or require a network connection and infrastructure to verify the integrity of a part.



TRADITIONAL METHODS

Lead seals, string, wax, holograms, QR codes

- ⚠ Substitutable without a trace — the same number reproducible for a few cents
- ⚠ Certifies a number, not a physical object



CURRENT TECHNOLOGIES

RFID, NFC, blockchain, connected e-Seals

- ⚠ NFC / RFID: signal can be intercepted, cloned, bypassed. Time-consuming integration
- ⚠ Blockchain: certifies the data, not the physical object
- ⚠ e-Seals: network dependency, cyber exposure



CLEWTEC : A next-generation unclonable seal.

► A technology with multi-layered security.

LOCK 1: the material

- 100% inert objects manufactured by additive manufacturing
- Non-reverse-engineerable material
- Unique volumetric architecture
- Security tab integrated into the seal structure: any tampering is immediately detectable



LOCK 2: the cryptography

- ECDSA signature encoded in the material. The private key signs the token at manufacturing, then is destroyed.
- Public key freely shareable without compromising security. It verifies the signature, but never allows it to be reproduced.

LOCK 3: the authentication

- Object + reader + app are required together. None of the three is sufficient alone.
- 100% offline protocol. Neither reader nor app holds any secret. Carried physically by the seal alone
- Even with all three together: it can be read, never reproduced.

► In the field: three simple steps, an instant offline answer.

1

Clip the seal onto the object or access point



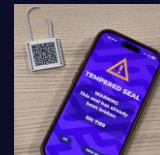
2

Read and decode with the material reader and app



3

Instant certification



● Tampered seal



✓ Seal intact



CLEWTEC: What sets us apart from other solutions.

Fully sovereign security with physical uniqueness, zero cloud and zero exposed secrets.

100% Operational

- No IT infrastructure required.
- Instant certification.
- OK / NOT-OK in seconds. No lab. No expert.

100% Secure & Certified

- Unclonable, non-substitutable.
- Certifies the physical object, not just digital data.
- Forensic-grade level, verifiable by X-ray diffraction.

100% Sovereign

- French technology and production.
- Zero exposed secrets. Zero database. Zero cyber exposure.

100% Cost-Effective

- Connects to your ERP.
- No network, cloud or dedicated infrastructure cost.
- Usable by any operator without external expertise.



CLEWTEC: Wherever integrity matters.

COMPLIANCE & REGULATION

Energy & fiscal meters

Unopened since certification · 10s, no network

Legal metrology

Intact since calibration · Court-admissible results

Aerospace MRO

Part certified intact · Zero network in the hangar

Pharma & medical devices

Unopened since manufacturing

Labs & chain of custody

Irrefutable integrity since collection

SOVEREIGNTY & DEFENSE

Defense & deployed ops

Crates and ballots unopened. Zero signal

Diplomatic pouches

Private key destroyed · Zero foreign database

Nuclear & international control

Verifiable on-site in 10s · No round-trip to Vienna

Critical infrastructure

Tampering detectable. NIS2 compliance met

Cash & valuables transport

Mathematically detectable substitution

TRANSIT & LOGISTICS

Freight & high-value parcels

Unopened since shipment. Zero infrastructure

Cold chain & sensitive transit

Integrity certified on arrival · 10 seconds

Hazmat (ADR)

No tampering since departure

Customs & international transit

Unopened since loading · Verifiable anywhere

Rail & critical infrastructure

No unauthorized access. Zero network on isolated sites

EVIDENCE & HERITAGE

Justice & judicial seals

Tampering detectable in 10s · By any officer

Archives & notaries

Mathematically detectable opening

Art, museums & heritage

Original work certifiable · Zero network





CLEWTEC : Three use cases to prove integrity.

Equipment & critical parts

Rail, automotive, aerospace, defense
CLEWTEC seal clipped at stock-out. Scan before installation.

- ✓ Authentic part
 - Substitution detected
- ⇒ Complementary to your ERP, RFID, traceability



Transit & customs

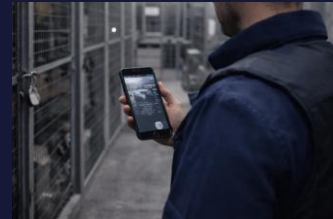
Crate, drum, container
CLEWTEC seal clipped at departure. Scan on arrival at dock or customs.

- ✓ Contents intact
 - Opening detected
- ⇒ Complementary to your ISO and CMR seals



Storage & secure access

Room, warehouse, cabinet
CLEWTEC seal layered on your existing seal.
✓ Legitimate access ● Replacement detected
⇒ Complements your badges, cameras, alarms





CLEWTEC: A seal with new powers.

► *The first customizable seal that proves, authorizes and grants access.*

FORM & MATERIAL

- Cap · Capsule · Clip · Plate · Lead · Connector — or fully custom.
- Material and color tailored to use case and environmental requirements.

READER & APP

- Customizable material reader and mobile app.
- White-label business interface.
- Interfaceable API.



THE SEAL PROVES

- **Proof of manufacturing** — this product was made by this certified manufacturer, in this condition, on this date. The seal cannot be forged, cannot be substituted.
- **Proof of receipt** — intact logistics chain. Verifiable offline by any field operator.
- **Permanent identification** — (optional) the unique visual code is embedded in the CAD file or engraved post-production. The part carries proof of its origin for life — no seal, no network.



THE SEAL AUTHORIZES AND GRANTS ACCESS

- **Production authorization** — 1 seal supplied = 1 part authorized. Any over-production yields unauthenticatable parts — fraud becomes immediately detectable.
- **Access to sensitive files** — (optional) the CAD file is encrypted via the seal. Only the physical seal can decrypt it. Available through our exclusive partnership with CORE Technologie.



- **Sovereign product passport** — (optional) the seal becomes the access key to the DPP: origin, manufacturer, recipient, compliance. NIS2 and ESRP / DPP 2027 compatible.



CLEWTEC : The people behind the innovation.

Inventors

Samuel Kenzari

Research engineer, CNRS
Co-inventor · Expert in additive materials

Sylvain Lefebvre

Research director, INRIA
Co-inventor · Expert in hardware
cryptography

Advisory Board

Francis Bensoussan

Former CEO Brink's · Tyco Security
30+ years in executive management
Security industry

Alain Bernard

Honorary chairman, France Additive
Professor emeritus, Centrale Nantes
Leading French expert in additive
manufacturing

IP & Recognition

7 patent families

EU · USA · Japan
SATT SAYENS shareholder

BPI France Deeptech-labeled 2023

France Additive Innovation Award 2025

Best Technology Breakthrough · 3DPrint 2025

Selected for VivaTech 2026 · CNRS Booth



*“A genuine
innovation: no AI,
no cloud, no exposed
secret”*

Accelerated by:



Report, July 2025

Cited as an unforgeable
device in manufactured
objects

Le Point

Samuel Kenzari and Sylvain
Lefebvre · Inventors Honor
Roll 2026



CLEWTEC : Operational on delivery.

▶ *Minimal impact on your organization.*

1

ORDER

Choose your track: starter, flow deployment, or critical use.

Direct purchase or quote, depending on the track.

No subscription, no commitment. Reorder on demand.

2

SHIPPING

CLEWTEC ships readers, seals, public key, and iOS / Android install link.

The system works with no user account. No network configuration.

3

DEPLOYMENT

Your teams load the public key by email, SMS or QR code — any channel, even unsecured. That's the nature of public-key cryptography. *No secret ever circulates.*

4

OPERATIONAL

Your screen reads INTACT or TAMPERED. Binary. Final. No interpretation, no expertise needed.

An opened seal cannot be reused. Tampering is permanent.

OPTIONS — ON QUOTE

API & business system integration · Custom seal material / form · Custom reader (IP rating, screen) · Tailored operator app. Dedicated support.



CLEWTEC : Ready to start?

Let's discuss your use case — we'll provide a trial kit for you to test in your own environment.

CONTACT

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Let's meet!

VivaTech Paris

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OUR PARTNERS & SUPPORTERS

