

Haelixa

*Gold Traceability
with DNA Markers*

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Unravel Complex Supply Chains

Creating Transparency through Traceability

Haelixa offers proprietary and innovative solutions to physically mark, trace, and authenticate products along the supply chain

Unique and easily detectable DNA identity; applied to gold, diamonds, gemstones, and precious metals

Products and services meet high Swiss standards of quality



Transparency is the new normal

Buyers & NGOs are increasingly demanding more transparency about the origin of gold -- placing the mining industry under increased scrutiny

Governments (including USA and EU) have instituted 'conflict mineral' legislation -- requiring companies to understand & monitor their supply chains

Companies need to be proactive to mitigate risks & contribute to positive outcomes by understand their supply chains

Why Haelixa?

Proprietary Marking Technology

- Patented technology uses DNA markers applied to the product, providing it with a traceable fingerprint

Forensic, Unfalsifiable Proof

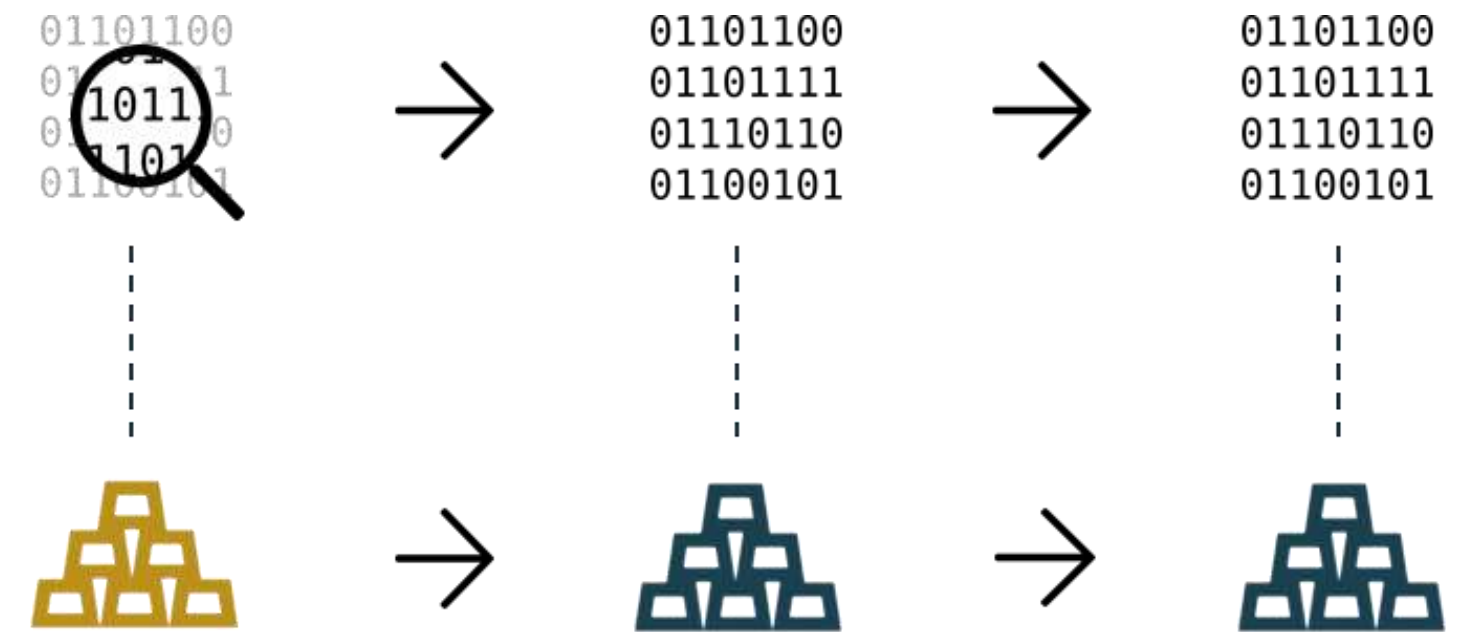
- Proof of product origin and authenticity along the value chain by confirming the DNA with PCR testing (attaching information directly to the commodity)

Highly Versatile

- No limit to the number of DNA markers produced; it is possible to have an individual marker for each mine, refinery, brand, collection, etc.

Harmless, yet robust

- Non-dangerous for humans and the environment, DNA markers are invisible and do not modify product properties





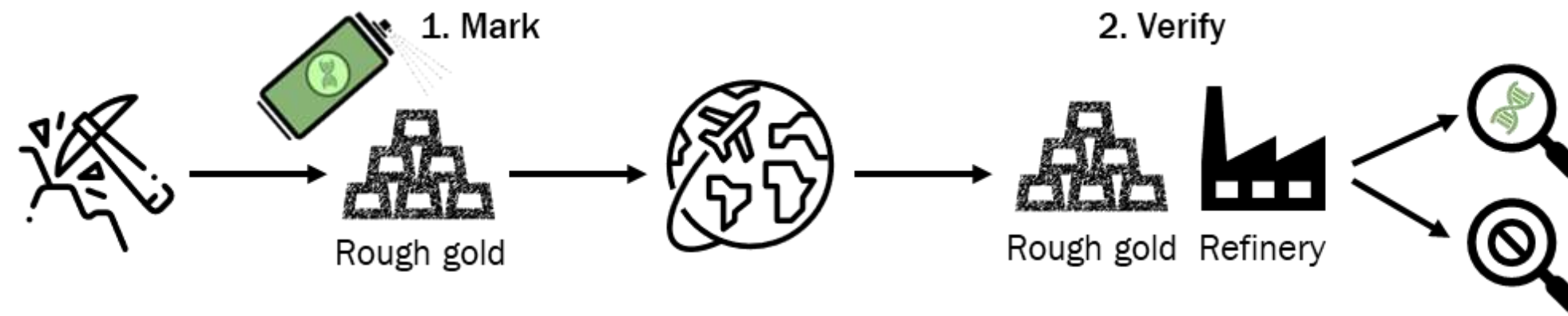
Gold's new identity

- Haelixa has found a way to connect information and product by adding DNA to the gold
- DNA markers containing product information are applied to gold products -- providing them with a unique and traceable identity
- The marked products are verified through systematic sampling and testing -- to identify the product & their origin

How it works

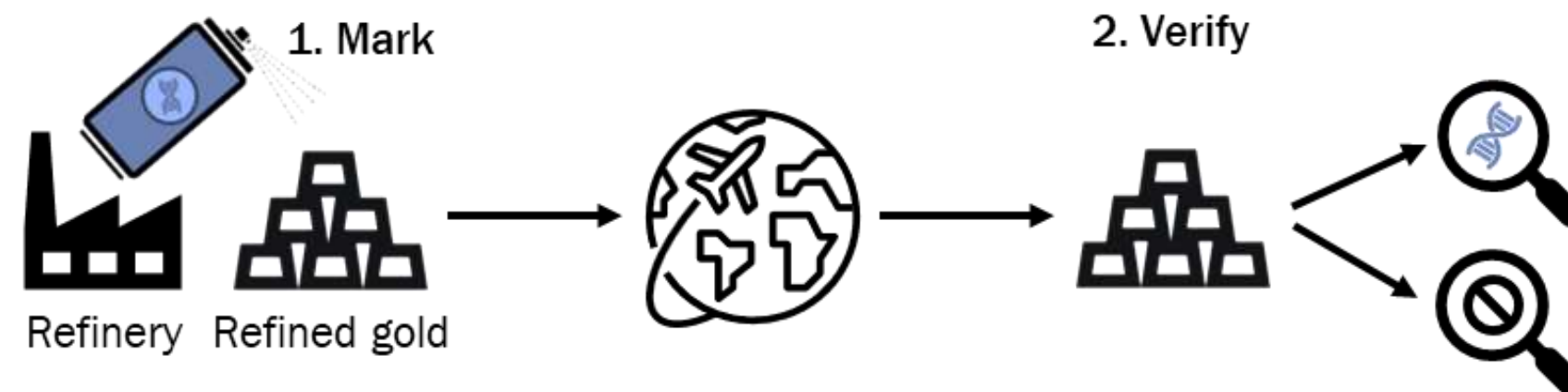
a) Rough gold tracing & verification

Traceability from mine to refinery with unique marker



b) Refined gold tracing & verification

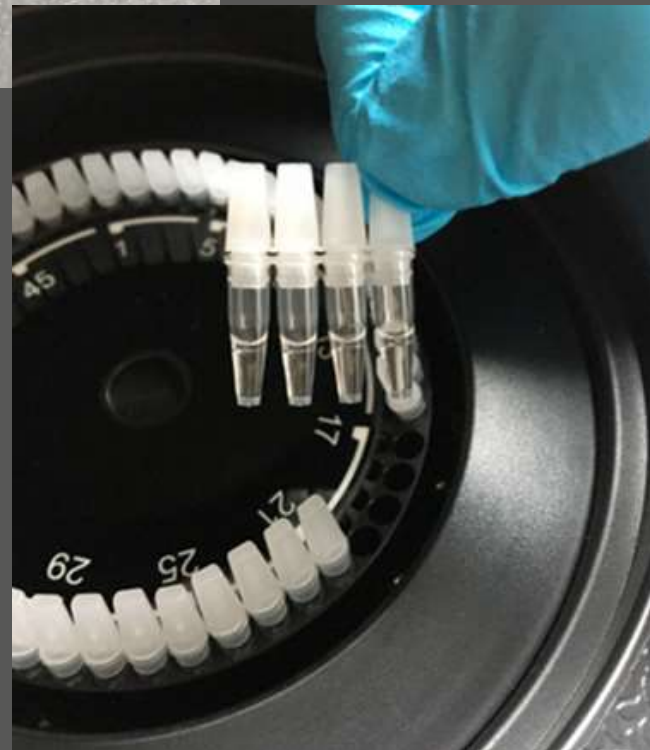
Traceability from refinery (second marker), information about mine (from a) can be included in second marker



How it works



Haelixa in Action



- Markers are provided as pre-portioned, ready-to-use liquid formulations, which are applied to the precious material following a strict and audited protocol
- Once applied, the liquid evaporates, and the markers stay safely anchored to the product material
- Verification comprises of the non-destructive retrieval of the marker which is then shipped to Haelixa for analysis
- Option for certain clients to perform own testing or with authorized 3rd party

What sets us apart

Broadly Applicable

DNA markers can be applied to rough, minted bars, or gold waste

Granular

Traceability can be unique to the mine, location, or any other specification requested by the customer

Tamperproof

Markers are unique to a project and are unknown to anyone without the data

Forensic Proof

Through PCR testing, the results are verified - used to support due diligence or standards





1



Unique DNA marker identifying the mine applied on each bar at the mine site by spraying



GOLD MINE

2

SHIP TO 

ARGOR-HERAEUS

3



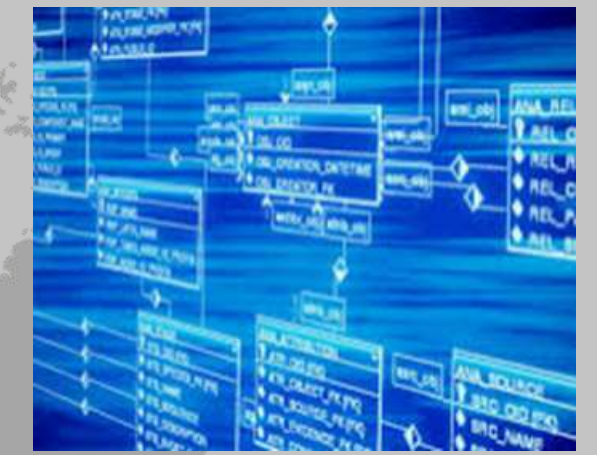
The metal reaches the refinery, is unpacked and DNA marker is recovered with the extraction kit.

4



Extracted sample is submitted for forensic test verification thru PCR Results undeniably prove the provenance of gold

5



Traceable gold is sold as investment product by the **Zürcher Kantonalbank.**

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and many other..

YouTube: How it works

