RMR Raw Material Radar

Raw Material Radar Project (RMR)

Fostering Responsible & Fair Artisanal Small-Scale Mining in Western Africa.

MERIT Online International Industry Engagement Workshop on IoT

September 25th, 2024

Raw Material Radar Project (RMR)

Artisanal Small-Scale Mining in Western Africa:

- Funded by EIT Raw Materials - A European initiative funded by the EU, aimed at securing raw materials supply by driving innovation, education, and entrepreneurship.
- Integration of blockchain and IoT technologies.
- Platform to track minerals' origin, ownership, and provenance.
- Focus on Social License to Operate (SLO) and community development.

Participating Companies

MINESPIDER

EC TERRA geology exploration mining

HUB INNOVAZIONE TRENTINO

FONDAZIONE BRUNO KESSLER

Vision and Objectives

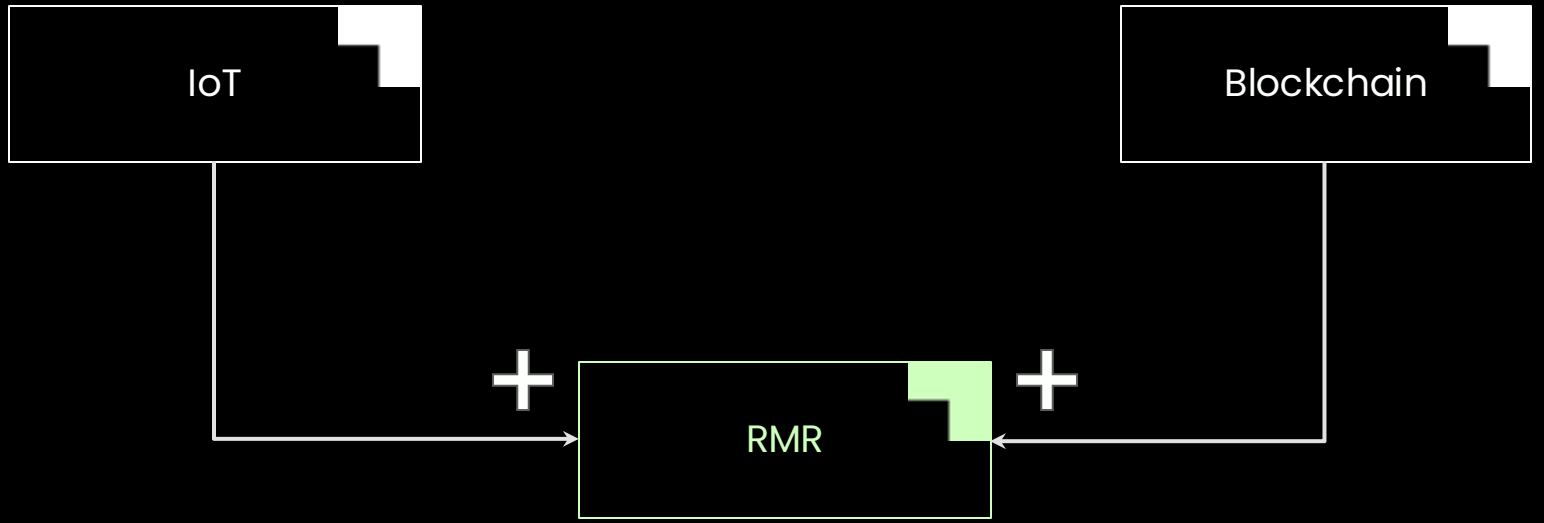
Vision: Transform Liberia's mining sector into a globally recognized model of innovation and efficiency.

Objectives:

- Enhance transparency and traceability in the mining sector.
- Promote fair and equitable mining practices.
- Drive technological advancements in mineral tracking.
- Foster economic growth and community development.

RMR Raw Material Radar

The two ingredients of the project

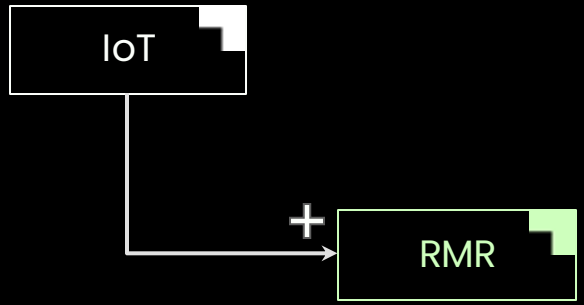


The Role of IoT in Enhancing Tantalum Traceability

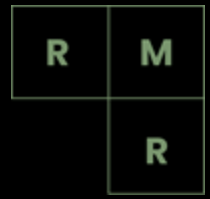
R M R

IoT devices are **vital** for ensuring **reliable** and **secure** traceability in the tantalum supply chain:

- **Continuous Monitoring**: IoT sensors, such as ambient light sensors and Inertial Measurement Units (IMUs), provide real-time data on barrel conditions and transport movements.
- **Anomaly Detection**: On-device Machine Learning algorithms analyze sensor data to identify potential tampering or irregularities during the journey from Africa to the EU.
- **Data Integrity**: Critical information is stored locally, enabling seamless tracking and validation of each step in the supply chain.

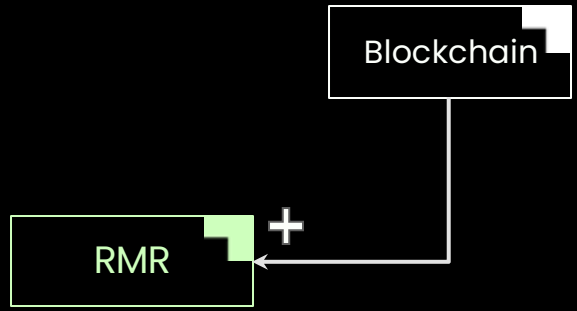


The role of the Blockchain (BC)



Blockchain technology serves as a **secure**, unchangeable and **non-falsifiable** record in raw material traceability:

- **Data Security and Immutability:** Each transaction is securely recorded using cryptographic principles, making it immutable and resistant to tampering.
- **Distributed Accessibility:** The decentralized ledger is accessible to all supply chain stakeholders, promoting transparency and accountability.
- **Cross-Verification:** Blockchain cross-verifies data collected from IoT devices, minimizing errors and detecting anomalies.



Benefits of Blockchain and IoT in the Raw Material Radar (RMR) Project

1. Enhanced Traceability & Transparency

Blockchain creates an immutable record of raw materials, while IoT sensors provide real-time data, ensuring end-to-end visibility and accurate tracking.

2. Regulatory Compliance

Blockchain automates compliance with standards like the OECD Due Diligence Guidance, while IoT captures real-time ESG metrics, ensuring adherence to international regulations.

3. Supply Chain Efficiency

Smart contracts and IoT optimize logistics, reduce delays, and streamline inventory management, lowering operational costs and environmental impact.

4. Supporting Circular Economy

Lifecycle tracking via blockchain and IoT helps recyclers recover valuable materials, reducing waste and promoting sustainable resource use.

RMR Raw Material Radar

Join us in building a responsible & fair Artisanal Small-Scale Mining sector in Western Africa.

www.rawmaterialradar.com

MINESPIDER

EC TERRA geology-exploration-mining

HUB INNOVAZIONE TRENTINO

FONDAZIONE BRUNO KESSLER