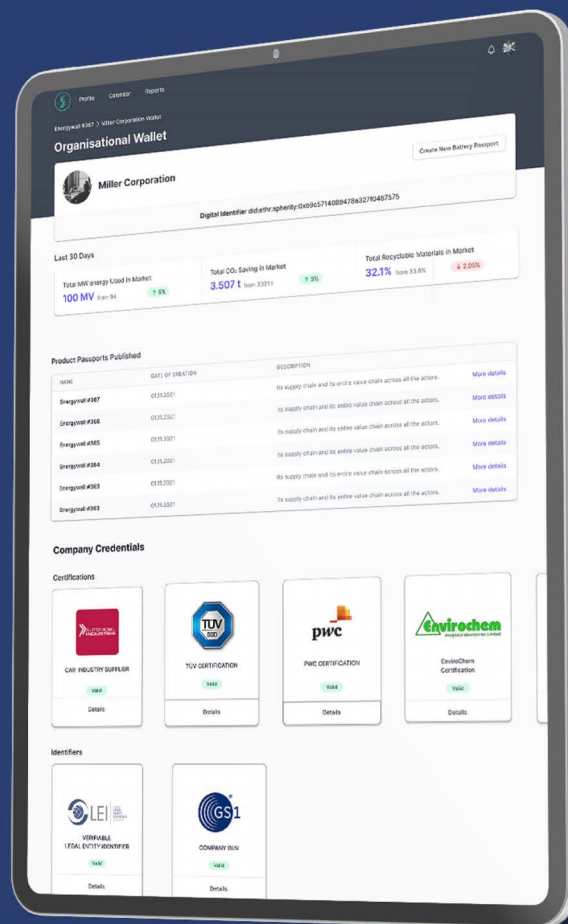# Digital Trust Technology Supports International Climate Action

DAVOS 2023

As a global movement builds towards low-carbon and net-zero environmental strategies, natural resource companies need to prove they're adhering to international climate change goals. Greenhouse gas emissions reporting is also relevant to the upcoming digital product passport regulated by the European Commission.

The Government of British Columbia (B.C.) and **Spherity**, both members of the **Global Battery Alliance (GBA)**, cooperate to facilitate the secure exchange of sustainability information using digital trust technology.

The Energy & Mines Digital Trust (EMDT) pilot project was initiated in November 2020 by the Government of British Columbia in partnership with TELUS. It enables a collaborative digital ecosystem between the B.C. government, natural resource companies, and global organizations worldwide. The EMDT expedites the global exchange of trusted sustainability data with investors, purchasers, and regulators.

Using the Spherity Product Passport Solution, mining companies (here: Copper Mountain Mining Corporation) can receive a business registration certificate from the B.C. government and a greenhouse gas emissions report from PricewaterhouseCoopers (PwC) in the form of digital credentials.
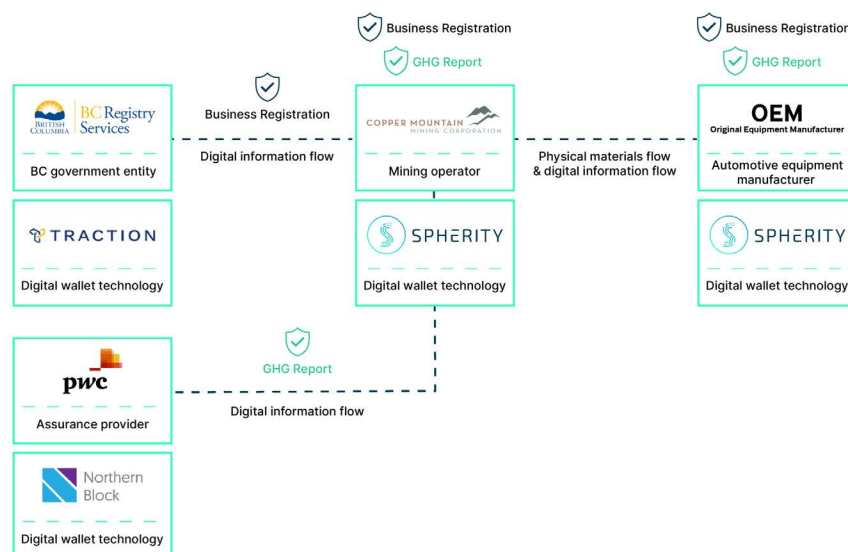
Digital credentials, also known as verifiable credentials, are the digital equivalent of a physical credential, such as a mining company's permit to operate. Verifiable credentials are cryptographically signed and thus provide verifiability, integrity, and non-repudiation. With verifiable credentials, natural resource companies can, in the future, bypass the need for physical documentation, instead sharing information in a digital format that is secure and trustworthy.

EMDT has created a highly interoperable tool called Traction to support the ecosystem's growth to scale. Using Traction, the Government of British Columbia can issue a business registration digital credential to Copper Mountain Mining Corporation.

PwC can issue a greenhouse gas emissions report digital credential using Northern Block's Orbit. PwC is accredited by the Standards Council of Canada and their audits are based on globally recognized ISO standards. The greenhouse gas verification credential includes emissions data that has been verified by PwC, and the integrity of this information is maintained through digital credentials. This digital credential builds upon current processes and has the potential to meet regulatory and voluntary reporting requirements in the future.

Digital trust technology improves access to transparent data, making it easier to track the life cycle of raw materials, regardless of where in the world they are exploited. Currently, the EMDT pilot uses digital credentials to facilitate the exchange of emissions data at the mine site-level, incorporating consolidated data from all the processes at that site. In the future, digital credentials could be used to support product-level reporting, improving the process of tracking the emissions associated with the production and usage of raw materials, from extraction to end-of-life disposal.

Facilitating Interoperability

All involved parties exchange credentials using wallet technology from different vendors, showcasing an unprecedented degree of interoperability. This is achieved because all vendors have developed digital trust technologies using the open standards Hyperledger Aries, Hyperledger Indy, and the Aries Interop Profile 1.0. The credential formats comply with the existing analogue business registration certificate and greenhouse gas emission report.
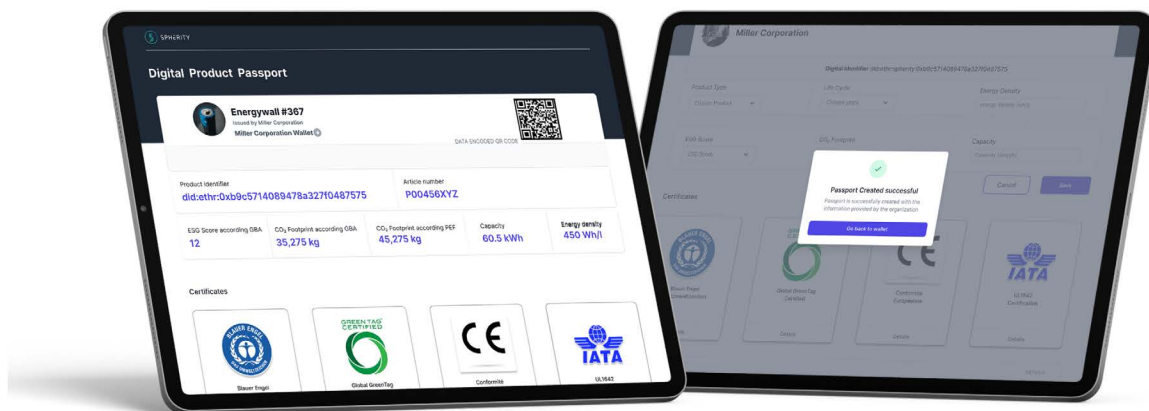
Flexible

Start with a concrete use case and expand. The DPP solution intends establishing a product level reporting and can be used to exchange GHG emissions reports, mining licenses, business registrations, and any other type of business and product information. More credential types can be added over time.

Ecosystem

The DPP solution is embedded in all relevant Digital Infrastructure Ecosystems. Besides the EMDT, these include Gaia-X and Catena-X. It is also compliant with requirements from the Global Battery Alliance, CIRPASS, and the Battery Pass project.

Confidentiality

Company secrets remain confidential. Thanks to selective disclosure, companies only need to share what is relevant and required. In addition, cryptography-based access management ensured that the different stakeholders can only access the attributes for which they are authorized.

Interoperable

The EMDT pilot involved the exchange of credentials between three different SSI providers, demonstrating the revolutionary impact of a DPP built on open standards such as Hyperledger Aries AIP 1.0 / 2.0, Indy, Ethereum, EBSI & W3C Verifiable Credentials.