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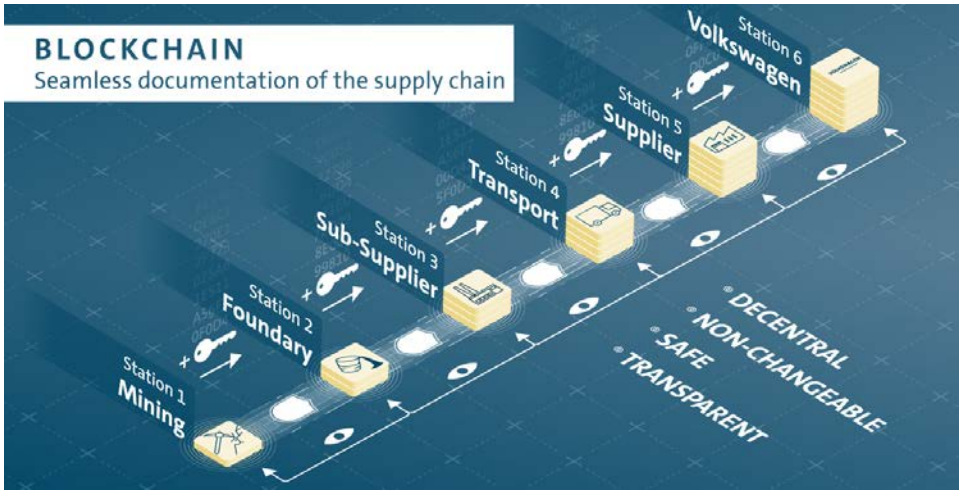
From mine to factory: Volkswagen makes supply chain transparent with blockchain

- **Collaboration between Volkswagen Group and tech company Minespider**
- **Blockchain technology makes it possible to trace raw material back to point of origin**
- **Pilot project for lead supply chain, use in further raw material supply chains planned**
- **Head of Strategy Group Procurement Philippi: "We will use this technology to make our processes more transparent and secure."**

Wolfsburg, April 23, 2019 – Optimizing supply chains, eliminating sources of error, guaranteeing social and ecological standards – these are the goals of the collaboration between the Volkswagen Group and Minespider. Together with the blockchain specialist, a pilot project is to be set up to achieve transparency in the the global supply chain for lead. Blockchain technology makes it possible to trace the raw material back to the point of origin by means of digital certificates. The Volkswagen Group plans to use this technology for further raw materials and their supply chains.



Supply chain transparency is a major issue in many industries, including the automotive sector. Responsible raw material procurement is fundamental for sustainable mobility. Going forward, Volkswagen will be using blockchain, the technology behind various cryptocurrencies, to ensure more transparency and security in the supply chain. Starting in April, Volkswagen will be collaborating with Minespider to trace the supply chain for lead from the point of origin to the factory. The point of origin will be either the mine or the recycling source. The pilot project will involve suppliers and sub-suppliers that deliver more than two thirds of the Group's total lead starter battery requirements.

The solution developed by Minespider is a proprietary protocol built on a public blockchain. A multi-layer architecture guarantees the security of the sensitive supply chain data despite the open source approach. One layer of the protocol contains generally accessible information, a second layer contains the private data blocks which cannot subsequently be changed, and the third layer is the encryption layer. The advantage versus a private blockchain is that everyone – from suppliers and sub-suppliers through to those directly responsible for mining or recycling the raw material – works with one system, even if several supply chains are involved.

This creates a common digital infrastructure that allows the transparent exchange of information. "Digitalization provides important technological instruments that enable us to track the path of minerals and raw materials in cross-border supply chains in ever greater detail", Marco Philippi, Head of Strategy Group Procurement, commented. "Together with Minespider we will use the blockchain technology to make our processes more transparent and secure."

The pilot project on the supply chain for lead also serves to define the framework for broader collaboration. Following the successful completion of this pilot, it is planned to use the technology for further raw materials and their supply chains. "We are witnessing a transformation of global supply chains", Nathan Williams, CEO of Minespider, said. "Companies have the right to know that their suppliers are operating responsibly and with blockchain we finally have the tools to prove it."

For decades, the Volkswagen Group has pursued the principle that sustainability and social responsibility do not start at the production plant. In a company with international production sites and sales activities in over 150 countries, due diligence is an enormous challenge and a major responsibility. The stated goal is to use industrial raw materials that are extracted sustainably in a socially and environmentally sound manner.

The present collaboration is the outcome of a "Hackathon for Supply Chain Transparency" held in 2018, where Minespider came out on top. During the event that is one element of the Volkswagen Group's corporate citizenship, some 100 experts from various disciplines worked together to further develop innovative, digital solutions for more supply chain transparency. The hackathon series continues in 2019.

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More information at:

https://www.volkswagenag.com/en/news/stories/2019/04/protecting-people-and-the-environment-with-blockchain.html

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About the Volkswagen Group:

The Volkswagen Group, with its headquarters in Wolfsburg, is one of the world's leading automobile manufacturers and the largest carmaker in Europe. The Group comprises twelve brands from seven European countries: Volkswagen Passenger Cars, Audi, SEAT, ŠKODA, Bentley, Bugatti, Lamborghini, Porsche, Ducati, Volkswagen Commercial Vehicles, Scania and MAN. The passenger car portfolio ranges from small cars all the way to luxury-class vehicles. Ducati offers motorcycles. In the light and heavy commercial vehicles sector, the products include ranges from pick-ups, buses and heavy trucks. Every weekday, 664,496 employees around the globe produce on average 44,567 vehicles, are involved in vehicle-related services or work in other areas of business. The Volkswagen Group sells its vehicles in 153 countries.

In 2018, the total number of vehicles supplied to customers by the Group globally was 10,831 million (2017: 10,741 million). The passenger car global market share was 12.3 per cent. In Western Europe 22.0 per cent of all new passenger cars come from the Volkswagen Group. Group sales revenue in 2018 totalled €235.8 billion (2017: €231 billion). Earnings after tax in 2018 amounted to €17.1 billion (2017: €11.6 billion).