Siemens’ Blockchain Strategy
The role of blockchain in Siemens’ digital business

Dr. Andreas Kind, VP Cybersecurity & Trust, Siemens
Not long ago, it was deeply fashionable to rave about blockchain, crypto and NFTs. Now, everybody is only talking about ChatGPT... 😞

- Not even crypto currencies are spared
- DEX lists 396 cryptocurrencies with ChatGPT in the name – what a hype!
- Joking aside: Siemens’ ecosystem-driven digital business calls for trust technologies irrespective if they are hip or not
Siemens issued €60 million digital bond on blockchain
Pioneering the digital transformation of capital and securities markets

- First non-financial DAX company to issue a digital bond on a public blockchain (Polygon)
- In accordance with Germany’s Electronic Securities Act (eWpG, 2021)

Business value
- No paper-based global certificates and central clearing needed
- Bond can be sold directly to investors without intermediary bank
- Settlement time reduced from T+7 to T+1
Distributing companies are accountable for ESG compliance. Transparency of the whole value chain is required.

**Responsibility of ESG compliance**

- Tier n
- Tier 2
- Tier 1
- Distributing company
- Customer Investors
- Other stakeholders

**Current transparency**

**Contractual safeguarding**

ESG compliance with your tier 1 will **not be sufficient** in the near future because:

- Of the demand of customers and society
- Of upcoming legislation
- The availability of technology to provide a proof for whole value chains (blockchain)
Battery passport stores historical data of battery usage
Lead to better decisions regarding reuse, repair or recycling

- Digital traceability of entire battery life cycle, from production to recycling, will be regulated
- In EU, batteries exceeding 2 kWh must have a digital passport containing technical information and environmental performance
- The aim is to ensure batteries use a minimum percentage of recycled materials (16% cobalt, 6% lithium, 6% nickel)
- Siemens Trusted Traceability solution enriches the battery passport with trusted genealogy data and, thus, helps in recycling decisions
Moving from carbon footprint reporting to active PCF management
How dynamic PCFs turn carbon footprints into a management tool

From static PCF reporting...
Conventional data base approach

...to dynamic PCF management
SiGREEN PCF chaining approach

- With up to 90% supply chain emissions, most of the PCF is based on static database averages
- (Sub-) supplier improvements are disconnected from a manufacturers PCF
- The same (sub-) supplier material is calculated multiple times by different manufacturers

- Efficient communication allows for frequent and proactive updates that create dynamic PCF
- (Sub-) suppliers’ improvements quantify in PCFs, making them a management tool
- Dynamic PCF enable precise target setting and efficient reduction measures with quantifiable impact
Blockchain can track production information and help making supply chains transparent.

Really?! How? Put all production information into a shared ledger?

Suppliers are reluctant to provide any production or supplier related information, which is needed for product-level PCF or ESG transparency.
Blockchain can address the need for supply chain transparency and confidentiality.

But not the way you might think…

Product information is shared peer-to-peer along the value chain.

Blockchain stores data needed for verification of product information that is exchanged peer-to-peer.

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**TSX – Trusted Supply Chain Exchange**

- **Certifier**
- **Supplier**
- **Customer**

- **Request 1**
- **Issue 2**
- **Present 3**
- **Issue 4**
- **Present 5**
- **Issue 6**
- **Present 7**
- **Issue 8**
- **Present 9**

**Decentralized Data Registry**

- Public DID
- Public keys
- Credential schema
- Revocation list

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The Siemens Journey into the Industrial Metaverse

https://opensea.io/assets/ethereum/0xe22ef3bbc4869ca7367a23fd80d397b9ba4e8cfd/246
The ESTAINIUM Association investigates decentralized voluntary carbon markets

The market for carbon credits worth $50 billion in 2030 (McKinsey 2021)

- A carbon credit is a transferrable instrument certified by governments or independent certification bodies to represent an emission reduction
- Today, VCMs are fragmented and complex with questionable practices and limited pricing transparency
- A decentralized VCM based on automated market making (AMM) can lead to efficient, transparent and trustworthy marketplaces
- Siemens investigates in the ESTAINIUM Association a token-based decentralized VCM that can be leveraged by SiGREEN
Key take away: Blockchain in wisely used in some Siemens’ products and solutions… … and is an established technology in our Cybersecurity & Trust strategy.

Confidentiality
Preserving authorized restrictions on information access and disclosure, including means for protecting personal privacy and proprietary information.

Integrity
Guarding against improper information modification or destruction and ensuring information non-repudiation and authenticity.

Availability
Ensuring timely and reliable access to and use of information.

Enterprise
Office infrastructure (IT)
Communication via intranet and internet, management of data in local and decentralized (cloud) systems.

Production
Plant infrastructure (IT/OT)
Data traffic and communication within production systems in IT/OT networks and in networked devices.

Products & Solutions
Hardware and software
Created using products and systems, components and subsystems manufactured by suppliers and delivered to customers.

Ecosystems
Data sharing and process automation across corporate trust borders
Characterized by decentralized, cross-organization architectures.
Thanks!

Dr. Andreas Kind
VP Cybersecurity & Trust
Head of Technology SiGREEN
Siemens AG

E-mail: andreas.kind@siemens.com