SIEMENS

Press

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Siemens has developed an ecosystem-based approach for the exchange of emission data

- **SiGreen enables the reliable tracking of a product carbon footprint across the supply chain**
- **The distributed and open Estainium network makes it possible to combine emission data into a true ecological footprint**
- **Companies are using data to better deploy their resources and pave the way towards an eco-friendly and sustainable economy**

In light of the fact that the supply chain accounts for the largest share of the ecological footprint of products, the decarbonization of industry is a challenge which must be tackled by all the stakeholders together. As a leading provider of automation technology and industry software, Siemens has for the first time launched a solution for the efficient query, calculation and transfer of information on the actual Product Carbon Footprint (PCF). SiGreen now makes it possible to exchange emission data along the supply chain and combine it with data from a company's own value creation in order to obtain a product's true carbon footprint. To achieve this, Siemens has initiated the open, cross-industry Estainium network with the aim of enabling manufacturers, suppliers, customers and partners to exchange trustworthy PCF data. With SiGreen supporting companies in tracking their Product Carbon Footprint, they can take targeted reduction measures providing a quantifiable effect. CO_2 management thus supports companies on their way towards carbon neutral production and helps them to transform sustainability into a decisive competitive edge.

Cedrik Neike, Member of the Managing Board of Siemens AG and CEO Digital Industries: "All our customers share the desire to reduce the carbon footprint of their products. But to do so, they first need to know exactly the CO2 emissions of their supply chain. And they need to know which adjustments can save them the most

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CO2. SiGreen and Estainium enable them to do just that. It allows us to bring much-needed transparency to supply chains while protecting the confidentiality of the data. This technology can bring us a big step closer to our goal: a carbon neutral industry."

Precise data is a key prerequisite for effectively achieving the emission targets in the value chain. With SiGreen, Siemens has successfully developed an application for the efficient acquisition of real data collected where emissions are actually produced, i.e. in the corresponding steps along the supply chain. To calculate the carbon footprint, SiGreen makes use of real data rather than industrial average values. Product Carbon Footprints thus become a measurement and control instrument – and can be actively reduced by applying targeted improvement measures.

The supply chain accounts for a major proportion of product-related emissions. To measure and reduce this Product Carbon Footprint (PCF), cooperation across frequently complex, cross-industry supply chains is a must. With this in mind, Siemens has initiated the Estainium network for the exchange of Product Carbon Footprints among manufacturers, suppliers, customers, and partners.

Its Distributed Ledger provides a high level of data protection: The innovative Distributed Ledger Technology (DLT) supports the creation and exchange of Verifiable Credentials, thus ensuring the trustworthiness of the information shared. The data provided is verified in order to enable the trustworthy aggregation of a carbon footprint across the supply chain – without the companies involved having to disclose data of strategic relevance, for example details of their own supply chains. To verify the values reported by a supplier, customers can subject them to a so-called Verifiable Proof against the corresponding Credential via the IDUnion blockchain. And since no centralized storage takes place, each of the parties maintains full data sovereignty. Simplifying the communication with partners in the supply chain and optimizing the calculation of a company’s own emissions can significantly reduce the effort required to determine a CO2 footprint compared to other approaches available on the market.

Background information:

The transition towards a low carbon economy is gaining momentum worldwide. Most companies today measure their energy-related emissions – and an increasing number of them is pursuing emission reduction measures. The decarbonization of value chains is a challenge which cannot be overcome by one company alone. In fact, the upstream supply chains account for a major part of the Product Carbon Footprint, rather than a company's own manufacturing process. Suppliers produce so-called Scope 3 emissions – and quantifying these emissions is of critical importance. Collecting precise and trustworthy information on the emissions originating from a company's partners in the supply chain requires considerable effort in today's world. Alternative solutions based on third-party database values or calculations are both cost-intensive and require the disclosure of strategically relevant information, as well as its storage by third parties. However, none of these solutions is suitable for fulfilling customer demands for PCFs on a large scale. To address this issue, Siemens has developed an ecosystem-based approach for the exchange of trustworthy product emission values. As recommended by leading NGOs (WRI, GHG Protocol, and GIZ), it is based on a Distributed Ledger. In contrast to existing solutions, the data is not stored centrally by a company or institution. Instead, it is exchanged directly within the scope of customer-supplier relations. Verifiable Credentials issued by trusted third parties are exchanged via a Distributed Ledger in order to verify the data provided – and to enable the

trustworthy aggregation of an overall Product Carbon Footprint across the supply chain without compromising the partners’ need for supply chain confidentiality.

This press release and further information on Siemens' innovations around the SPS can be found at
www.siemens.com/press/sps2021

More detailed Information on SiGreen ist available at
www.siemens.com/sigreen

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Siemens Digital Industries (DI) is a leading innovator in automation and digitalization. In close cooperation with its partners and customers, DI is the driving force for the digital transformation in the process and manufacturing industries. With its Digital Enterprise portfolio, Siemens provides companies of all sizes with all the necessary products, along with consistent solutions and services for the integration and digitalization of the entire value chain. Optimized for the specific requirements of individual industries, this unique portfolio enables customers to enhance their productivity and flexibility. DI continuously extends its portfolio to include innovations and the integration of future-oriented technologies. Siemens Digital Industries, with its headquarters in Nuremberg, has a workforce of around 76,000 employees worldwide.

Siemens AG (Berlin and Munich) is a technology company focused on industry, infrastructure, transport, and healthcare. From more resource-efficient factories, resilient supply chains, and smarter buildings and grids, to cleaner and more comfortable transportation as well as advanced healthcare, the company creates technology with purpose adding real value for customers. By combining the real and the digital worlds, Siemens empowers its customers to transform their industries and markets, helping them to transform the everyday for billions of people. Siemens also owns a majority stake in the publicly listed company Siemens Healthineers, a globally leading medical technology provider shaping the future of healthcare. In addition, Siemens holds a minority stake in Siemens Energy, a global leader in the transmission and generation of electrical power.
In fiscal 2021, which ended on September 30, 2021, the Siemens Group generated revenue of €62.3 billion and net income of €6.7 billion. As of September 30, 2021, the company had around 303,000 employees worldwide. Further information is available on the Internet at www.siemens.com.