

Bosch Research

Economy of Things – Contributions to the community

Growing confidence is programmed in – how self-sovereign digital identities make business relationships easier

There are many situations and interactions in which people reveal part of their identity – by showing an identity document when checking into a hotel or providing documentation of qualifications during an application process, to name just two everyday examples. Digitizing hard copies of such evidence is time-consuming and complicated, and can be prone to errors – whether in the scanning of documents or typing information into forms on the internet. Many initiatives have therefore set their sights on establishing a digital identity ecosystem, both at a national level in Germany and at a European level. These include the Federal German Chancellery’s “European Digital Identity Initiative”, for example. [Checking into hotels with an ID wallet](#) is the first application in the digital identity ecosystem that is being newly established. Bosch is one of the pilot companies involved. “The most important currency in this context is the confidence people will have in digital solutions,” says Nik Scharmann, Project Director of the “Economy of Things” (EoT) strategic advanced engineering project at Bosch Research. Among other things, his team is therefore working on Distributed Ledger Technologies (DLT) such as blockchain, whose decentralized nature and dependability are designed to generate trust. The principle of self-sovereign identity (SSI) builds on this technology. At the heart of this type of software is the digital wallet.

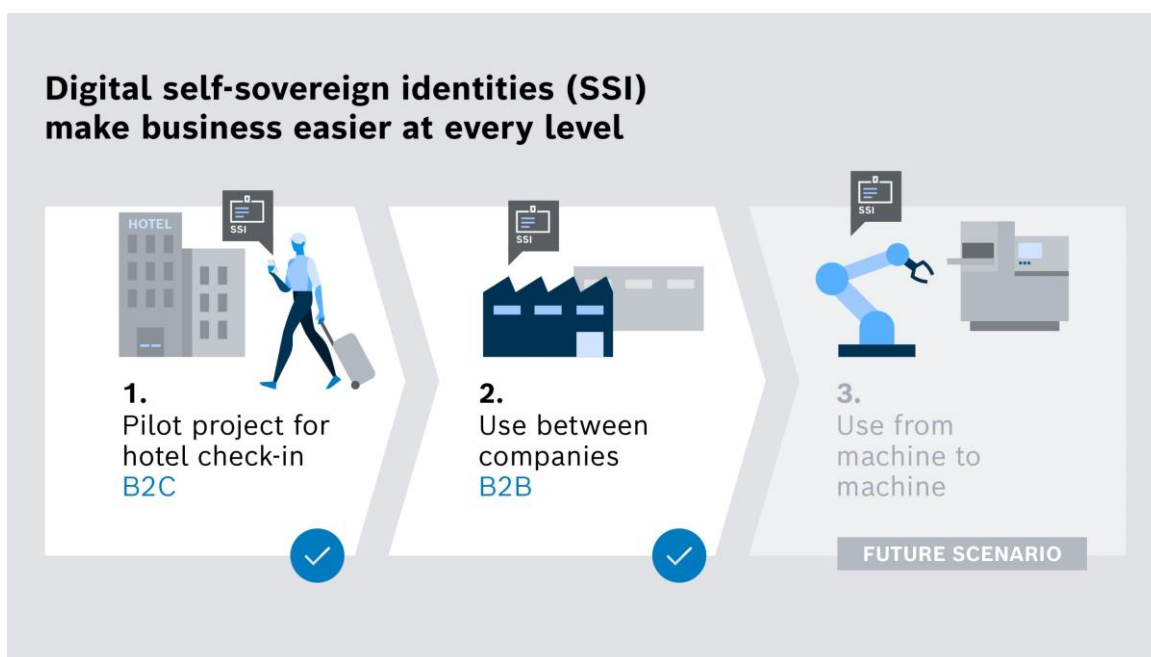
Transferring SSI to interactions between companies and between machines

As a leading international company for technology and service provision, Bosch is also systematically transferring the SSI principle to the B2B sector – in other words, to business relationships between companies. Initial products are already being developed at Bosch, by Bosch.IO and Bosch Global Services, for example. A further step will involve transferring SSI technology to secure and trustworthy interactions between machines. Currently, the implementation framework for SSI is also being provided by the European data infrastructure project [Gaia-X](#), for example. Before a specific Gaia-X operation can be launched, the central Gaia-X Federation Services (GXFS) will be needed as a basis for establishing ecosystems. For example, the Economy of Things team from Bosch Research worked together with other partners as part of the GXFS to draw up the technical specifications for the aspects “Identity and Trust” using SSI. The reference implementation they created is now being used in [Catena-X](#), the implementation initiative for the automotive industry. The basis for this is also being laid in [IDunion](#), where Bosch is part of the team developing a fundamental identity data infrastructure.

Master data management – cryptographically secure data forwarding

A prime example in a business setting is master data management. The SSI approach means every legal or natural person looks after their master data themselves. They thus have sovereignty over their data. In this context, sovereignty therefore means persons or entities have complete control of every facet of their own identity, including their name and address, independent of any third party. This begins right from the moment they start generating their identity. Legal entities can use company agent software to create their own decentralized ID number (DID), which is managed without any additional authorities. This DID and the associated company master data can be shared with third parties. Secure verification of the respective

identity can be passed on via technically validatable copies and can therefore also be scaled. On the one hand, this saves companies time, money, and administrative outlay while, on the other, it weaves a form of trust network in the digital ecosystem. Bosch has already developed an initial B2B reference implementation under the name “Business Partner Agent”. This is available to any interested parties as an open source solution.



“Whether for people, organizations or machines, in the European context, the field of self-sovereign digital identities is ultimately about ensuring evidence is provided and transmitted in a very user-friendly way, without compromising anything in terms of economic efficiency, security, data protection, technology, and governance. Only then can we realistically get closer to eliminating the need to have a piece of paper for everything,” Scharmman says.

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