Bundesministerium
für Wirtschaft
und Energie

Smart Data

The ISÆN method

What is the situation?

Whether you are buying a product on the internet or making an appointment online to see your doctor – many internet services today require data to be transferred and stored. It is important to ensure that this data is handled securely and that it is protected from misuse. The General Data Protection Regulation (GDPR) sets out new rules for the transfer of personal data which will apply from May 2018. The GDPR provides that personal data may only be processed if the data subjects have unambiguously given their consent, that data subjects have the right to object to their data being processed and that the controllers of data are obliged to inform the data subject if their data is disclosed to a third party. It is therefore key to use a technology that allows both individuals and companies to handle personal data securely and ensures that the rules set out by the GDPR are met.

Where does ISÆN come in?

ISÆN (Individual perSonal data Auditable addrEss Number) is a french standardisation initiative for secure identity management. ISÆN is designed to help internet users have better control of their personal data. In particular, ISÆN is made to help streamline the management of personal data and make it more transparent.

Using ISÆN for identity management

The ISÆN initiative is developing a data protection technology that will allow internet users to have their identity authenticated online, and to provide reliable proof of their identity on the internet. The technology also gives users the possibility to actively specify and control who is allowed to use their personal data and also to withdraw consent from these entities if necessary. ISÆN uses a method whereby an individual's personal data is stored in a digital safe deposit box, for example in a secure folder on their smartphones. This works by storing the users identity before any data is transferred and certifying it, for example by using biometric data like fingerprints or facial recognition. These identity features are then used to create a digital signature that allows users to provide proof of their identity online, but does not allow others to disclose a user's identity.

ISÆN is based on blockchain technology – the same technology used by the digital currency bitcoin. Blockchain is a digital chain of data that documents all transactions bearing the electronic signature of the user – for example when he or she buys something from an online shop. As the users identity is encrypted, the blockchain will never have access to the users personal data. If the user buys something from an online shop, the request whether he or she wants to give permission to the shop to access the data needed for completing the purchase is sent exclusively via the blockchain. The data is transferred only after the user has authorised the transfer. By using this technology, not only the users data, but also the transaction itself is

encrypted. Personal data is transferred only if the data subject gives explicit consent. This helps prevent masses of data from being transferred and makes the transmission of data more transparent. The technology also helps to store and process personal data in a tamper-proof and transparent manner.

Where ISÆN is used

ISÆN can greatly help to meet data protection standards across a wide range of different sectors. By providing a transparent and tamper-proof way of storing data, the french technology benefits internet service providers and users alike. At the same time, the technology – which is easy to use – ensures that users rights to information, correction, withdrawal, or deletion of their personal data are respected. Systems like ISÆN have the potential to build trust in e-commerce among individuals and make international online trading easier and more user-friendly.

However, the use of ISÆN is not limited to domestic and international e-commerce. For example, it could also be used in the healthcare sector, for managing patient data. Mobile health, for example, is a new trend: everywhere, people are using their smartphones, wearables and other types of gadgets to record health-related data and monitor their fitness levels – and the industry is growing quickly. This means that information about peoples exercise and eating habits, and data about blood sugar and blood pressure levels are being collected outside of doctors surgeries. ISÆN technology allows users to transfer such data in a secure manner. It also allows patients to decide what kind of healthcare-related data they want to transfer to their physician, and for what purpose. If necessary, physicians may be granted access not only to a patients mobile health data, but also to other medical records and health data collected by other physicians, caregivers or therapists.

But the options offered by the technology are still wider. In the future, ISÆN may also be used in the financial sector or in research – for example for conducting national or international studies.

Analysis undertaken by the Smart Data research group

As part of the ‘Smart Data – Innovations in Data’ technology programme, the Smart Data research group has analysed the ISÆN method for identity management. Its recommendation: continuing to pursue efforts to protect personal data in the digital age by using reliable technology. This also means dealing with the legal and technical issues that have not yet been resolved. In a next step, the developers of ISÆN will join with european partners to further build on and improve the technology, promote its roll-out at an international level and develop it into a reliable data protection technology that can be used across the EU. The study mentioned above can be found online at http://www.digitale-technologien.de/DT/Redaktion/DE/Downloads/Publikation/smartdata_studie_isaen.html

Smart Data – Innovations from Data

As part of its technology programme entitled ‘Smart Data - Innovations from Data’, the Federal Ministry for Economic Affairs and Energy is providing funding for a total of 16 flagship projects undertaken from 2014 to 2018 which are intended to open up the future big data technology market for german firms. Smart Data is part of the german government’s High-Tech Strategy and the Digital Agenda. More information about the Smart Data technology programme can be found here: www.smart-data-programm.de.

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