SECURE PRODUCT TRACKING WITH TRUSTWORTHY TECHNOLOGIES: COGNITIVE SENSORS AND BLOCKCHAIN

In order to maintain leading global market positions industries nowadays need Internet systems with cognitive capabilities and highly secure shared data spaces. The Fraunhofer Cluster of Excellence Cognitive Internet Technologies CCIT is presenting its high-level vision of these key technologies with an example from the field of logistics: seamless, trustworthy product tracking by means of cognitive sensor and blockchain technology.

Temperature, storage, position and movement patterns – modern sensor technology is able to record a wide range of data regarding the state of sensitive goods during transport. However, the amount of data that has to be collected, aggregated and evaluated leads to enormous complexity. With the CCIT's "Cognitive Sensor Connector" complexity becomes manageable: As an edge device, it analyzes and preprocesses the raw data at the point of collection. Thus data are refined into Smart Data. When data about the status of the cargo is being transmitted out of the connector to the actors involved, this is subject to strict data flow and data usage control.

For a traceable compliance history the real time information out of the connector can be collected in a "Trackchain", a secure blockchain that preserves data protection when supply chains have to be tracked company- or worldwide. The use of cryptographic approaches such as "Attribute-Based Encryption" ensures that only parties with the required authorization have access to the information relevant for them.

FURTHER INFORMATION

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