Securing the Internet of things

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RFID tags and transponders are spreading like wildfire despite data privacy concerns. To improve RFID technology security, researchers have developed a software platform that connects a wide variety of sensor networks to any enterprise information technology infrastructure.

Radio frequency identification or RFID tags have already made their appearance in the wholesale industry. And it's only a matter of time and money before they begin replacing today's standard retail barcodes. Logistics professionals love to talk about the "Internet of Things" and as with any communications network, security is a lively topic of discussion here as well. This is especially true of RFID systems deployed beyond the boundaries of the enterprise network, as in supply chain management systems. Most of these processes are fully automated: Production line sensors detect the identity of a component or product, and actuators then guide it to the next step in the chain. The accumulated data is recorded and stored because the material flow must be traceable.

To keep each company in the chain from falling victim to data loss, system downtime or corporate espionage, IT specialists at the Fraunhofer Institute for Secure Information Technology SIT have developed a middleware program called SAN (Sensors Actuators Network). "Our software platform is like an adaptor that sits between the corporate IT system and the sensor network," explains project manager Stephan Vollmer. "The data is encrypted and protected on both sides. The real benefit of the program, however, is that it's system independent." Vollmer and his colleagues at SIT recently presented an initial prototype during a trade fair.

Since companies can continue to use their existing IT infrastructures, SAN offers a simple, cost-effective way to deploy RFID technology. In addition, the built-in flexibility allows the sensor networks to be expanded or swapped out, a feature not found in today's complete solutions. This lessens the dependency on a single system or manufacturer. Potential fields of application include logistics supply chain management and any production process which involves multiple enterprises.

Backup tapes are an example. Where is the last backup? Companies cannot afford delays in locating backup tapes, because when system failures and data loss bring productivity to a halt, this costs money. Citing his own experience, Vollmer says: "Locating backup tapes can often be more difficult than IT managers think. With SAN and an RFID product tracking solution, however, the backup tape can quickly be located – regardless whether it's still in the company's own mailroom, in the package courier's delivery truck or already in storage with an external service provider."

Source: Fraunhofer-Gesellschaft